CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5

Purpose:	Compliance Evaluation Inspection
Facility:	Hubbell Wiegmann 501 West Apple Street Freeburg, Illinois 62243
NPDES Permit Number:	NA
Date of Inspection:	March 24, 2021
EPA Representatives:	Ben Atkinson, Inspector, 312-353-8243 Jessica Stromsdorfer, Environmental Engineer, 312-886-3164
State Representatives:	Joe Stitely, Inspector, 618-993-7213
Facility Representatives:	Jorge Garcia, EH&S Manager, 618-710-8050 Mori Rand Danielle Sheahan
Report Prepared by:	Ben Atkinson, Inspector Water Enforcement and Compliance Assurance Branch Atkinson.ben@epa.gov
Inspector Signature:	Atkinson, Benjamin Digitally signed by Atkinson, Benjamin Date: 2021.05.19 14:23:25 -05'00'
Approver Name and Title:	Ryan Bahr, Section 2 Chief Water Enforcement and Compliance Assurance Branch
Approver Signature and Date:	RYAN BAHR Digitally signed by RYAN BAHR Date: 2021.05.19 14:45:50 -05'00'

I. BACKGROUND

The purpose of this report is to describe, evaluate and document Hubbell Wiegmann's ("Hubbell" or "facility") compliance with the Clean Water Act (CWA) as observed during the March 24, 2021 EPA Compliance Evaluation Inspection.

Hubbell is a producer of electrical enclosures located in Freeburg, Illinois. The facility opened in 1964 as the E.M. Wiegmann Company and expanded multiple times through 1989. Hubbell Inc. acquired the E.M. Wiegmann Company in 1994. The facility works primarily with carbon steel, stainless steel, galvanized steel, and a small amount of aluminum.

Hubbell is a indirect discharger that discharges to the Village of Freeburg West Sewage Treatment Plant (National Pollutant Discharge Elimination System Permit IL0032310). The facility is a Categorical Industrial User and falls under the Metal Finishing Subcategory with the effluent limits listed in Table 1.

Table 1: Effluent Limitations under 40 CFR 433

Pollutant or pollutant property	Maximum for any 1 day	Monthly average shall not exceed
	Milligrams per liter (mg/l)	
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	

The facility has had multiple Zinc exceedances over the past five years. The facility's zinc effluent exceedances are listed in Table 2.

Table 2: Zinc Effluent Exceedances

Date	Sample Value mg/l	Limit mg/l	Limit Type
7/22/2020	3.23	2.61	1-Day Max
7/9/2020	6.88	2.61	1-Day Max
Jul-20	5.05	1.48	Monthly Average
Feb-20	2.5	1.48	Monthly Average
12/19/2019	7	2.61	1-Day Max
Dec-19	7	1.48	Monthly Average
May-19	1.9	1.48	Monthly Average

II. INSPECTION SUMMARY

Due to the COVID-19 pandemic, the inspection took place in several parts.

On March 18, 2021, EPA held a virtual opening conference. Included on that meeting were Ben Atkinson – EPA, Jessica Stromsdorfer – EPA, Greg Sanders – IEPA, Jorge Garcia - Hubbell Wiegmann's Environmental Health and Safety Manager, Brian Donovan - Hubbell Inc.'s Director of Environmental Health and Safety, Paul Pepler – engineer with Brown and Caldwell, and Mori Rand – engineer with Brown and Caldwell. We discussed the facility's operations, self-reported effluent violations, wastewater production, and stormwater management. I ended the conference by requesting a list of documents from Mr. Garcia. We also discussed the COVID-19 safety protocols that would be implemented during the on-site inspection.

On March 24, 2021, Ben Atkinson and Jess Stromsdorfer (EPA) along with Joe Stitely of IEPA toured the Hubbell Wiegmann facility. In addition to the facility tour, we had a brief opening discussion and closing conference with Mr. Jorge Garcia, Mori Rand, and Danielle Shehan.

The following topics were discussed during the calls and site inspection.

Facility Description

During the virtual opening conference, the facility representatives explained that the facility makes electrical enclosures (essentially metal boxes for electrical equipment) with an NAICS code 332119 for fabrication which includes sheering, punching, forming, welding, paint preparation, and powdering coating. The facility works primarily with carbon steel, stainless steel, galvanized steel, and a small amount of aluminum. The facility employs approximately 284 employees working 2 shifts Monday through Friday and a half shift on Saturdays. Normal operating hours are 6:00 AM to 4:30 PM.

The facility representatives explained that the facility receives metal in raw sheets which is cut with shears, punched, formed, and welded. The products are then prepared for powder coating by being passed through one of three wash lines. The wash lines are called the JIC, NEMA, and large parts washer. "JIC" and "NEMA" each refer to professional associations which developed technical standards for electrical equipment. They are the Joint Industry Council and National Electrical Manufacturers Association respectively. The primary difference between the lines is the size of the boxes. The JIC line produces boxes 12 inches or less in size. The NEMA line produces boxes 12 inches to 36 inches in size. The large parts washer prepares anything over 36 inches. The JIC and NEMA lines are four stage parts washers. The stages are cleaning chemicals, water rinse, rust inhibitor, and water rinse. The large parts washer is a single stage washer that cleans and seals in one step. The facility representatives stated that the parts washers are the only source of process wastewater at the facility. Following preparation, parts are powder coated and then baked. Once the products have cooled, they are packaged and shipped.

The facility representatives stated that there were existing floor drains throughout the facility that

had been sealed. EPA was provided with a piping diagram (Attachment 3).

The facility representatives stated that since October 2020, in response to the effluent exceedances, the facility has not discharged process wastewater to the sewer. The facility began operating the parts washers in a closed loop and closed the valve that would allow the wastewater holding tanks to discharge. Once the wash water is no longer viable, the facility has a waste hauler, Illini Environmental Inc., remove the spent wash water for offsite disposal. The facility representatives stated that they are in the process of assessing the causes and possible solutions to the zinc effluent limit exceedances. The facility representatives stated they believed the zinc exceedances were possibly due to sediment at the sampling location and were exploring ways (such as installing baffles in the holding tanks) to increase sediment removal prior to discharge. The facility representatives stated that they hoped to resume discharging as soon as they were certain they could meet their effluent limits but intended to continue to have their wastewater hauled away until that time.

Prior to October 2020, the parts washers had a constant flow of fresh water to the rinse stages which resulted in a continuous discharge. The cleaning solution and rust inhibitor solutions were periodically discharged. The facility representatives stated that there was no flow meter on the discharge to the sewer.

Stormwater

The facility representatives stated that the facility had a no exposure certification for industrial stormwater. IEPA was able to confirm that they had received the no exposure certification on August 5, 2016 and that it needs to be resubmitted every five years.

Sanitary Wastewater

The facility representatives stated that all sanitary wastewater entered the discharge pipe downstream of the process wastewater sampling point. EPA was provided with a piping diagram (Attachment 3).

Sampling Procedure

The facility provided a copy of the sampling procedures that had been used prior to October 2020 (Attachment 3). The facility did both a grab and a composite sample. The composite sample was a time-based composite composed of three aliquots collected one hour apart.

Effluent Exceedances

The facility was aware of their effluent exceedances and stated that they were actively investigating potential solutions.

Site Inspection

EPA and IEPA arrived at the facility at approximately 8:50 AM. EPA presented credentials and held an opening conference. Following the opening conference, the site inspection began.

EPA began at the north end of the facility at the JIC wash line. EPA observed the four-stage parts washer and associated wastewater holding tanks. The facility personnel pointed out newly

installed baffles in the wastewater tank which were intended to increase solids settling to help address the Zinc exceedances. The holding tank was empty and not in use as each stage was being operated in a closed loop. EPA observed the parts exiting the parts washer, excess water being sucked off by an employee with a vacuum, and the parts entering the drying oven (photos 1-12). EPA also observed a floor drain that had been sealed off.

EPA then walked to the sampling point for the process wastewater and observed the sampling well (photos 13 and 14).

EPA then walked to the NEMA 4 stage washer and associated wastewater holding tank. Again, new baffles had been installed to increase solids settling and the tank was not in use (photos 15 and 16). EPA observed the use of overpack drums around chemical barrels. EPA observed the parts traveling through the washer and into the drying oven. EPA also observed the NEMA powder coating area.

EPA then walked south through a packaging area and observed the facility using a two-part foam-in-place packaging system and overpack barrels used for chemical component containment. EPA continued south and observed the two-part seal extruder used to place weather seals on enclosure doors (photo 20 – 22).

EPA continued south through the manufacturing area and observed drip pans in place to contain fluid leaks from manufacturing equipment (photos 23, 24, and 34).

EPA observed an open door on the west side of the facility and observed a small building located between the main building and the warehouse building. Facility personnel identified the building as the air compressor building. In the air compressor building, EPA observed an air compressor with a leaking condensate collection valve (photos 25 and 26). The floor of the building had an oily layer on it with what appeared to be a flow path to the west side of the building (photos 27 and 28). On the west side of the building there was a hole in the side of the building at floor level. EPA walked outside and observed that the hole was covered by a piece of material on the west side of compressor building. No liquid was observed flowing out of the building at the time of the inspection. EPA also observed multiple plastic tubes connected to a condensate collection manifold. One of the lines was leaking with the leak dripping down to an overflowing5-gallon bucket (photo 29).

The collection manifold ran to the east to an oil water seperator. EPA observed liquid trickling down the exhaust pipes of the oil water seperator and flowing off the concrete pad (photos 30-33 and 72).

EPA then walked back into the main building. EPA observed a barrel of deionized water that is used for cooling the spot welders (photo 35).

EPA walked south to the single stage large parts washer and observed the washer and sump pit which collects the wastewater from the washer. Facility personnel stated that this sump pumps water to the wastewater holding tank at the JIC washer (photos 36-42 and 9).

EPA walked west and observed a former paint booth which is now used for individual parts washing on occasion. The paint booth had a sump pit which, the facility personnel stated, pumped any wastewater to the sump pit of the single stage washer (photos 44, 52, and 43).

Along the west wall, EPA observed a metal tank with a pipe running from the bottom of the tank through the west wall. EPA walked outside and saw the pipe terminated, uncapped, outside the wall. The facility personnel identified the metal tank as a holding tank for the deionized water used for the spot welder tip cooling system. EPA also observed what appeared to be a cooling tower along the exterior wall. Facility personnel identified the cooling tower as part of the closed loop spot welder tip cooling system (photos 45-48).

EPA also noted several pipes, some cut off, penetrating the west wall. EPA walked outside and noted the pipes entered a small building to the west of the main building. Facility personnel stated the building had previously been used for various purposes but was now only used as a storage space for chemicals (photos 49-51).

EPA then walked back north and observed the solvent dispensing booth with containment and grounding (photo 54).

EPA continued north and observed the chemical storage rack which held empty used barrels, waste storage barrels, and virgin materials barrels. EPA also observed an emergency spill kit (photos 55-63).

EPA then began a walk-around of the exterior of the facility. The exterior walk-around began on the northeast side of the facility and proceeded west around the north end of the main building then around the west side of the warehouse. EPA observed used pallets and a sump pit in a recessed loading dock on the west side of the warehouse (photos 64 and 66).

EPA walked east along the south side of the warehouse and observed a pipe protruding out of the east wall of the warehouse. EPA entered the warehouse and observed a sump pit to be source of the pipe (photos 67-68).

EPA continued north along the east side of the warehouse then south along the west side of the main building. EPA observed a small building north of the air compressor building which was being used for general storage (photos 70 and 71). EPA also observed multiple pipes protruding from the main building that terminated just outside the wall (photos 69, 73, 74, and 75).

EPA walked around the south end of the main building then north along the east side. EPA observed the scrap metal bins with covers to prevent stormwater contact (photo 77).

Closing Conference
After touring the facility, we went back to the conference room for a closing conference to discuss observations and areas of concern noted during the walk through. We left the facility around 2:30 p.m.

III. DOCUMENTS PROVIDED BY THE FACILITY

1. Process Flow Diagram
2. MSDS sheets
3. Illini Environmental explanation of methods of disposal of hauled waste
4. Wastewater Sampling Procedures
5. Facility Piping Diagram
6. Wastewater Tracking Manifests
7. Water Bills

IV. AREAS OF CONCERN

The following areas of concern were noted during the inspection:

1. The zinc effluent violations that occurred between May 2019 and July 2020.
2. The sampling protocol used by the facility does not appear to meet the requirement for a 24-hour flow proportional composite sample as required by 403.12 (g)(3) and Appendix E to Part 403—Sampling Procedures.
3. The leaking compressor condensate collection system in the compressor building.
4. The several pipes that left the building and whether they have the potential to discharge.

V. LIST OF ATTACHMENTS

1. Inspection Photographs
2. Arial Photo of Hubbell Wiegmann
3. Documents Provided by Hubbell Wiegmann

Inspection Photos

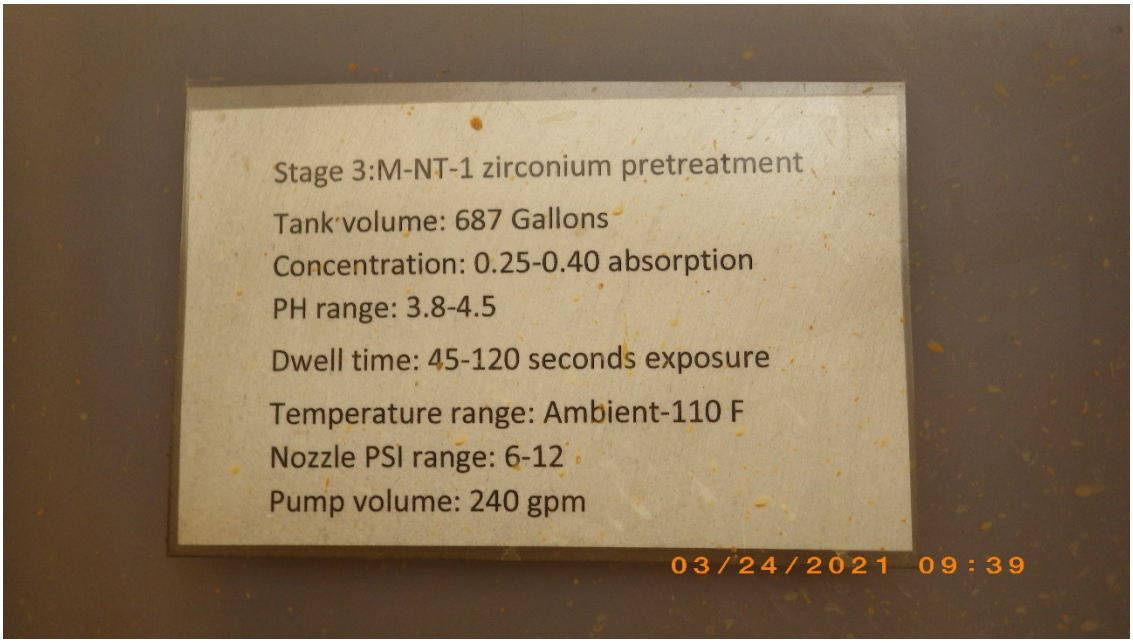
Hubbell-Wiegmann
EPA Inspection 03/24/2021
All photos taken by Ben Atkinson, Enforcement Officer, U.S. EPA
Camera: Ricoh WG-4 GPS

1: RIMG0001
Description: Looking north along the 4 stage JIC wash line and wastewater holding tanks.
Location: South of the JIC wash line.
Camera Direction: North
Date/Time: 03/24/2021 9:36 AM

2: RIMG0002
Description: Stage 1 of the 4 stage JIC wash line.
Location: South end of JIC wash line.
Camera Direction: East
Date/Time: 03/24/2021 9:37 AM

3: RIMG0003
Description: Stage 2 of the 4 stage JIC wash line.
Location: South end of JIC wash line.
Camera Direction: East
Date/Time: 03/24/2021 9:38 AM

4: RIMG0004
Description: Mistake photo.
Location:
Camera Direction: Date/Time: 03/24/2021 9:39 AM



5: RIMG0005
Description: Stage 3 of the 4 stage JIC wash line.
Location: South end of JIC wash line.
Camera Direction: East Date/Time: 03/24/2021 9:39 AM

6: RIMG0006
Description: Stage 4 of the 4 stage JIC wash line.
Location: South end of JIC wash line.
Camera Direction: East Date/Time: 03/24/2021 9:39 AM

7: RIMG0007
Description: Parts after exiting the JIC wash line. To the right (out of frame) is an employee who vacuums exccess water from the parts exiting the JIC wash line.
Location: North end of JIC wash line.
Camera Direction: East Date/Time: 03/24/2021 9:41 AM

8: RIMG0008
Description: Parts after exiting the JIC wash line. To the right (out of frame) is an employee who vacuums exccess water from the parts exiting the JIC wash line.
Location: North end of JIC wash line.
Camera Direction: East Date/Time: 03/24/2021 9:42 AM

9: RIMG0009
Description: Wastewater holding tanks on south end of JIC wash line. The holding tanks are not currently in use. Note the recently installed baffles (red arrows) intended to increase solids settling prior to discharge.
Location: South end of the JIC wash line.
Camera Direction: Southeast Date/Time: 03/24/2021 09:45 AM

10: RIMG0010
Description: Pipe from wastewater storage tank to pipe conveying flow to the facility's sampling point and then to the sewer.
Location: South end of the JIC wash line.
Camera Direction: North Date/Time: 03/24/2021 09:47 AM

11: RIMG0011
Description: Another view of the pipe from wastewater storage tank to pipe conveying flow to the facility's sampling point and then to the sewer.
Location: South end of the JIC wash line
Camera Direction:East Date/Time: 03/24/2021 09:47 AM

12: RIMG0012
Description: Piping on the west side of the JIC wash line.
Location: North end of the JIC wash line.
Camera Direction: East. Date/Time: 03/24/2021 9:50 AM

13: RIMG0013
Description: Sampling manhole. Operator stated that all process wastewater is conveyed to the pipe at the bottom of this sampling manhole.
Location: North side of the facility.
Camera Direction: Down Date/Time: 03/24/2021 9:51 AM

14: RIMG0014
Sampling manhole. Operator stated that all process wastewater is conveyed to the pipe at the bottom of this sampling manhole.
Location: North side of the facility.
Camera Direction: Down Date/Time: 03/24/2021 9:52 AM

15: RIMG0015
Description: Entry into NEMA wash line.
Location: North end of of NEMA wash line on west side of facility.
Camera Direction: Southwest Date/Time: 03/24/2021 9:55 AM

redacted for personal privacy

16: RIMG0016
Description: Wastewater holding tank for the NEMA wash line.
Location: North end of the NEMA wash line.
Camera Direction: North Date/Time: 03/24/2021 10:06 AM

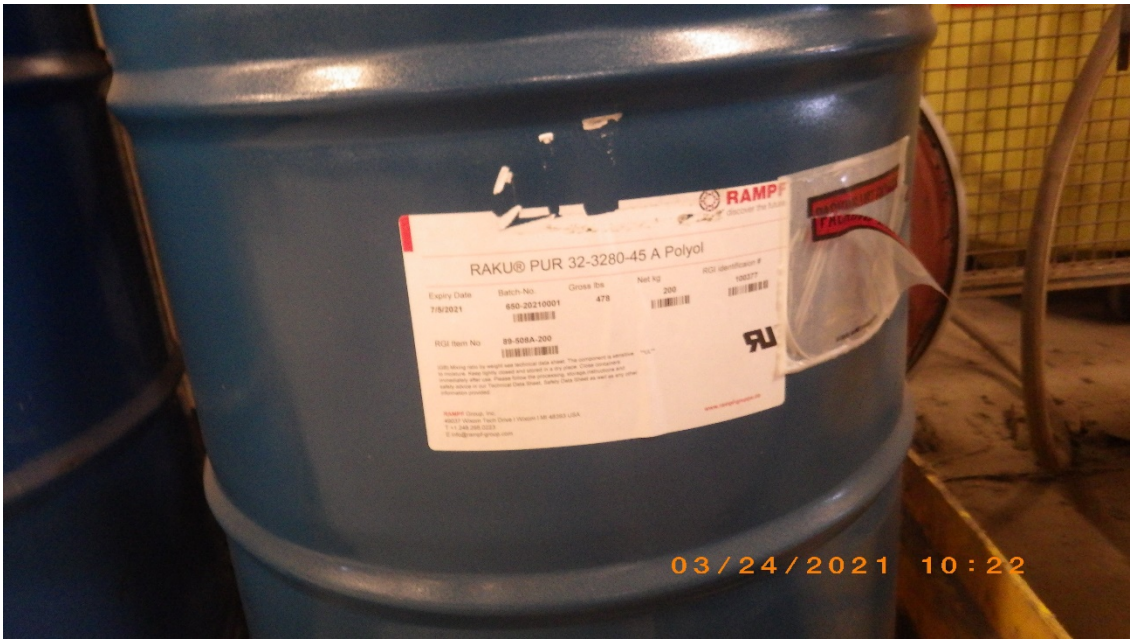
17: RIMG0017
Description: Part of the NEMA line powder paint area.
Location: West of NEMA washing line.
Camera Direction: South Date/Time: 03/24/2021 10:16 AM

18: RIMG0018
Description: Doors to NEMA line powder paint area.
Location: West of NEMA washing line.
Camera Direction: Southwest Date/Time: 03/24/2021 10:16 AM

19: RIMG0019
Description: “Sealed Air” two part packaging foam.
Location: Packaging area in central part of the facility.
Camera Direction: West Date/Time: 03/24/2021 10:19 AM

20: RIMG0020
Description: Two part sealant applied to enclosure doors.
Location: Central part of the facility.

Camera Direction: Soutwest Date/Time: 03/24/2021 10:21 AM



21: RIMG0021
Description: Two part sealant applied to enclosure doors.
Location: Central part of the facility.
Camera Direction: North Date/Time: 03/24/2021 10:22 AM

22: RIMG0022
Description: Two part sealant applied to enclosure doors.
Location: Central part of the facility.
Camera Direction: North Date/Time: 03/24/2021 10:22 AM

23: RIMG0023
Description: Collection pan under machinery to collect any leaked fluids.
Location: Adjacent to a brake press in the NEMA product line area.
Camera Direction: North
Date/Time: 03/24/2021

24: RIMG0024
Description: Collection pan collecting leaking fluid.
Location: NEMA product line.
Camera Direction: North.
Date/Time: 03/24/2021 10:31 AM

25: RIMG0025
Description: Oil/water leak from air compressor in compressor building.
Location: Compressor building west of the main facility and east of the warehouse.
Camera Direction: East Date/Time: 03/24/2021 10:33

26: RIMG0026
Description: Oil/water leak from air compressor in compressor building.
Location: Compressor building west of the main facility and east of the warehouse.
Camera Direction: East Date/Time: 03/24/2021 10:33

27: RIMG0027
Description: Oily residue and apparent flow path of oil/water leak from air compressor.
Location: Compressor building west of the main facility and east of the warehouse. Note the hole in the wall at ground level (red arrow).
Camera Direction: West Date/Time: 03/24/2021 10:34 AM

28: RIMG0028
Description: Oily residue on floor around unused piece of equipment.
Location: Compressor building west of the main facility and east of the warehouse.
Camera Direction: West Date/Time: 03/24/2021 10:34 AM

29: RIMG0029
Description: Compressor condensate collection pipe conveying oil/water condensate from the compressors to the ThermaPhase oil/water seperator. Note the overflowing bucket collecting liquid leaking from the collection pipe.
Location: Compressor building west of the main facility and east of the warehouse.
Camera Direction: East Date/Time: 03/24/2021 10:34 AM

30: RIMG0030
Description: ThermaPhase oil/water seperator located on the west side of the main facility building.
Location: Between the main facility building and the compressor building.
Camera Direction: East. Date/Time: 03/24/2021 10:38 AM

31: RIMG0031
Description: Wet area at base of the oil/water seperator which appeared to be condensate (from the exhaust pipes) flowing down the exhuast pipe.
Location: Between the main facility building and the compressor building.
Camera Direction: East Date/Time: 03/24/2021 10:38 AM

32: RIMG0032
Description: ThermaPhase oil water seperator.
Location: Between the main facility building and the compressor building.
Camera Direction: Southwest Date/Time: 03/24/2021 10:38 AM

33: RIMG0033
Description: Exhaust pipes from oil/water seperator.
Location:
Camera Direction:
Date/Time: 03/24/2021

34: RIMG0034
Description: Absorbent pad and catch pan being used to collect leaking hydraulic fluid from metal press.
Location: Nema product line.
Camera Direction: West Date/Time: 03/24/2021 11:02 AM

35: RIMG0035
Description: Barrel of deionized water used in closed loop system to cool spot welder tips.
Location: South end of the main facility building.
Camera Direction: Down Date/Time: 03/24/2021 11:07 AM

36: RIMG0036
Description: West end of the single stage washer used for large pieces.
Location: South end of the main facility building.
Camera Direction: Southeast Date/Time: 03/24/2021 11:12 AM

37: RIMG0037
Description: Barrels of chemicals used in large single stage washer.
Location: West end of the single stage washer.
Camera Direction: Down Date/Time: 03/24/2021 11:12 AM

38: RIMG0038
Description: Barrels of chemicals used in large single stage washer.
Location: West end of the single stage washer.
Camera Direction: Down Date/Time: 03/24/2021 11:12 AM

39: RIMG0039
Description: Sump pit on north side of single stage washer.
Location: North side of single stage washer.
Camera Direction: Down Date/Time: 03/24/2021 11:13 AM

40: RIMG0040
Description: Sump pit on north side of single stage washer.
Location: North side of single stage washer.
Camera Direction: Down Date/Time: 03/24/2021 11:15 AM

41: RIMG0041
Description: Sump pit on north side of single stage washer. Note discharge pump and pipe. The operator stated that this discharge pipe is routed to the JIC Line wash line holding tank.
Location: North side of single stage washer.
Camera Direction: Down Date/Time: 03/24/2021 11:18 AM

42: RIMG0042
Description: Looking east from the west end of the single stage wash line.
Location: West end of the single stage wash line.
Camera Direction: East. Date/Time: 03/24/2021 11:25 AM

43: RIMG0043
Description: Large plastic tank located on south wall of main facility, west of the single stage washer.
Location: South wall of main facility, west of the single stage washer.
Camera Direction: Southwest Date/Time: 03/24/2021 11:25 AM

44: RIMG0044
Description: Pressure washers located on the north side of the paint booth located in the southwest corner of the facility.
Location: Southwest corner of the facility's main building.
Camera Direction: East Date/Time: 03/24/2021 11:34 AM

45: RIMG0045
Description: Large tank located along the west wall of the south side of the main building.
Location: Southwest side of the facility.
Camera Direction: Southwest Date/Time: 03/24/2021 11:36 AM

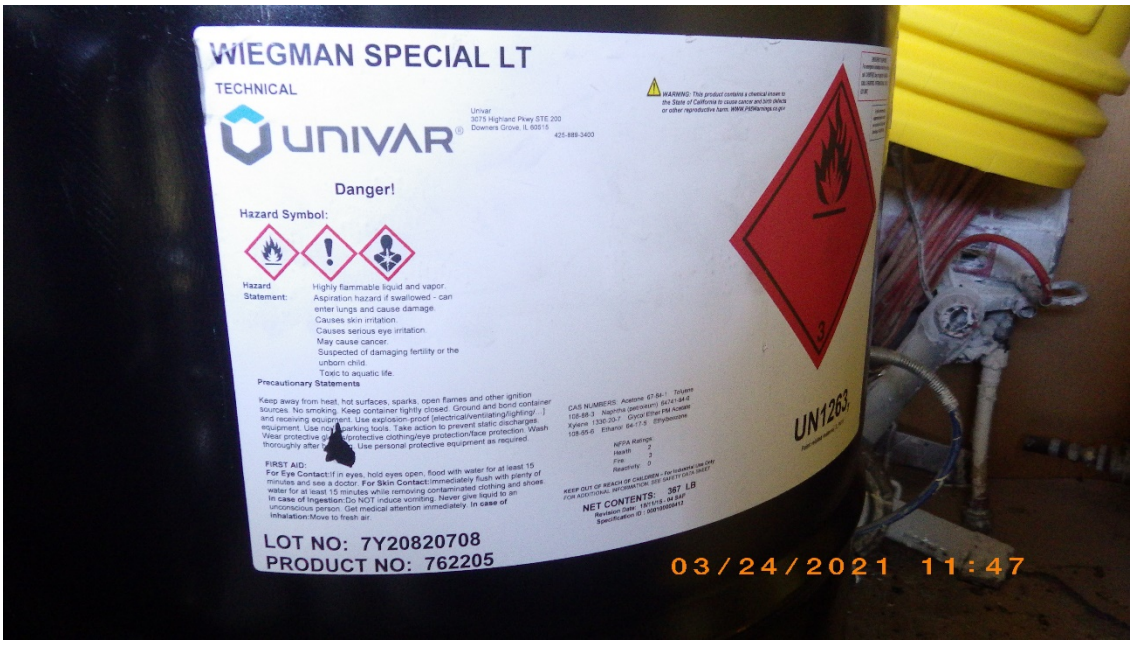
46: RIMG0046
Description: West side of tank seen in photo 45. Note pipe with valve routed from the bottom of the tank through the west wall.
Location: Southwest side of the facility.
Camera Direction: North Date/Time: 03/24/2021 11:36 AM

47: RIMG0047
Description: West side exterior of main building. Note pipe seen in photo 46 (red arrow) and spot welder water cooling tower (blue arrow).
Location: Southwest corner of main building.
Camera Direction: Northeast Date/Time: 03/24/2021 11:38 AM

48: RIMG0048
Description: Additional view of cooling tower.
Location: Southwest corner of main building.
Camera Direction: Northeast Date/Time: 03/24/2021 11:38 AM

49: RIMG0049
Description: A group of pipes protruding through the west wall of the main building on the south end of the building.
Location: Southwest corner of main building.
Camera Direction: Southwest Date/Time: 03/24/2021 11:41 AM

50: RIMG0050
Description: Small building west of the southwest corner of the main building. The pipes seen in photo 49 go to this building. The operator stated that this building is no longer used for its original purpose and is now only used for chemical storage.
Location: Small building west of southwest corner of main building.
Camera Direction: South Date/Time: 03/24/2021 11:47 AM



51: RIMG0051
Description: Close-up of one of the barrels stored in the room seen in photo 50.
Location: Small building west of southwest corner of main building.
Camera Direction: South Date/Time: 03/24/2021 11:47 AM

52: RIMG0052
Description: Sump in former paint booth now used for washing. The operator stated that the sump is piped over to the sump pit of the single stage washer.
Location: Southwest corner of main building.
Camera Direction: South Date/Time: 03/24/2021 11:54 AM

53: RIMG0053
Description: Sump in former paint booth now used for washing. The operator stated that the sump is piped over to the sump pit of the single stage washer.
Location: Southwest corner of main building.
Camera Direction: South Date/Time: 03/24/2021 11:54 AM

54: RIMG0054
Description: Chemical solvent dispenser with containment.
Location: West side of main building.
Camera Direction: West. Date/Time: 03/24/2021 11:56 AM

55: RIMG0055
Description: Waste storage drums and empty drums.
Location: West side of main building.
Camera Direction: Northwest. Date/Time: 03/24/2021 11:58 AM

56: RIMG0056
Description: Waste storage drums and empty drums.
Location: West side of main building.
Camera Direction: North Date/Time: 03/24/2021 12:00 PM

57: RIMG0057
Description: Waste storage drums and empty drums.
Location: West side of main building.
Camera Direction: North Date/Time: 03/24/2021 12:01 PM

58: RIMG0058
Description: Waste storage drums being filled.
Location: West side of main building.
Camera Direction: Down Date/Time: 03/24/2021 12:01 PM

59: RIMG0059
Description: Closeup of top of waste oil drum lid.
Location: West side of main building.
Camera Direction: Down Date/Time: 03/24/2021 12:01 PM

60: RIMG0060
Description: Waste storage drums and empty drums.
Location: West side of main building.
Camera Direction: South Date/Time: 03/24/2021 12:02 PM

61: RIMG0061
Description: Unopened new chemical storage.
Location: West side of main building.
Camera Direction: South Date/Time: 03/24/2021 12:02 PM

62: RIMG0062
Description: Emergency spill response kit located adjacent to the chemical storage rack.
Location: West side of main building.
Camera Direction: Southwest. Date/Time: 03/24/2021 12:03 PM

63: RIMG0063
Description: Interior of emergency spill response kit located adjacent to the chemical storage rack.
Location: West side of main building.
Camera Direction: Southwest. Date/Time: 03/24/2021 12:04 PM

64: RIMG0064
Description: Pallets stacked outdoors west of the southwest corner of the warehouse.
Location: West of the southwest corner of the warehouse.
Camera Direction: West Date/Time: 03/24/2021 1:23 PM

65: RIMG0065
Description: Loading dock on west side of southwest corner of the warehouse building. Note sump in corner of loading dock (red arrow).
Location: West side of southwest corner of warehouse.
Camera Direction: East Date/Time: 03/24/2021 1:24 PM

66: RIMG0066
Description: Outlet of sump seen in photo 65 and roof drains on south side of warehouse.
Location: South side of southwest corner of warehouse.
Camera Direction: North Date/Time: 03/24/2021 1:25 PM

67: RIMG0067
Description: Sump pump located in the southeast corner of the interior of the warehouse.
Location: Interior southeast corner of warehouse.
Camera Direction: Down Date/Time: 03/24/2021 1:28 PM

68: RIMG0068
Description: Outlet of sump pump seen in photo 67.
Location: East side of southeast corner of the warehouse.

Camera Direction: West Date/Time: 03/24/2021 1:29 PM

69: RIMG0069
Description: Uncapped pipe on west side of the main building.
Location: West side of main building.
Camera Direction: East Date/Time: 03/24/2021 1:34 PM

70: RIMG0070
Description: Interior of small building north of compressor building. Operator stated that this building was used for general storage and did not have a floor drain.
Location: North of compressor building between main building and warehouse.
Camera Direction: Northeast Date/Time: 03/24/2021 1:38 PM

71: RIMG0071
Description: Interior of small building north of compressor building. Operator stated that this building was used for general storage and did not have a floor drain.
Location: North of compressor building between main building and warehouse.
Camera Direction: Northeast Date/Time: 03/24/2021 1:40 PM

72: RIMG0072
Description: Closeup of data plate on oil water seperator located east of compressor building.
Location: Between compressor building and main building.
Camera Direction: West Date/Time: 03/24/2021 1:46 PM

73: RIMG0073
Description: Uncapped pipe on west side of main building.
Location: West side of main building.
Camera Direction: East Date/Time: 03/24/2021 1:53 PM

74: RIMG0074
Description: Uncapped pipes protruding from the ground on the west side of the main building.
Location: West side of main building
Camera Direction: East Date/Time: 03/24/2021 1:55 PM

75: RIMG0075
Description: Uncapped pipe protruding from the east side of the main building.
Location: Southeast side of main building.
Camera Direction: Northeast Date/Time: 03/24/2021 1:58 PM

76: RIMG0076
Description: Pallets stacked on the east side of main building.
Location: Southeast side of main building.
Camera Direction: South Date/Time: 03/24/2021 2:00 PM

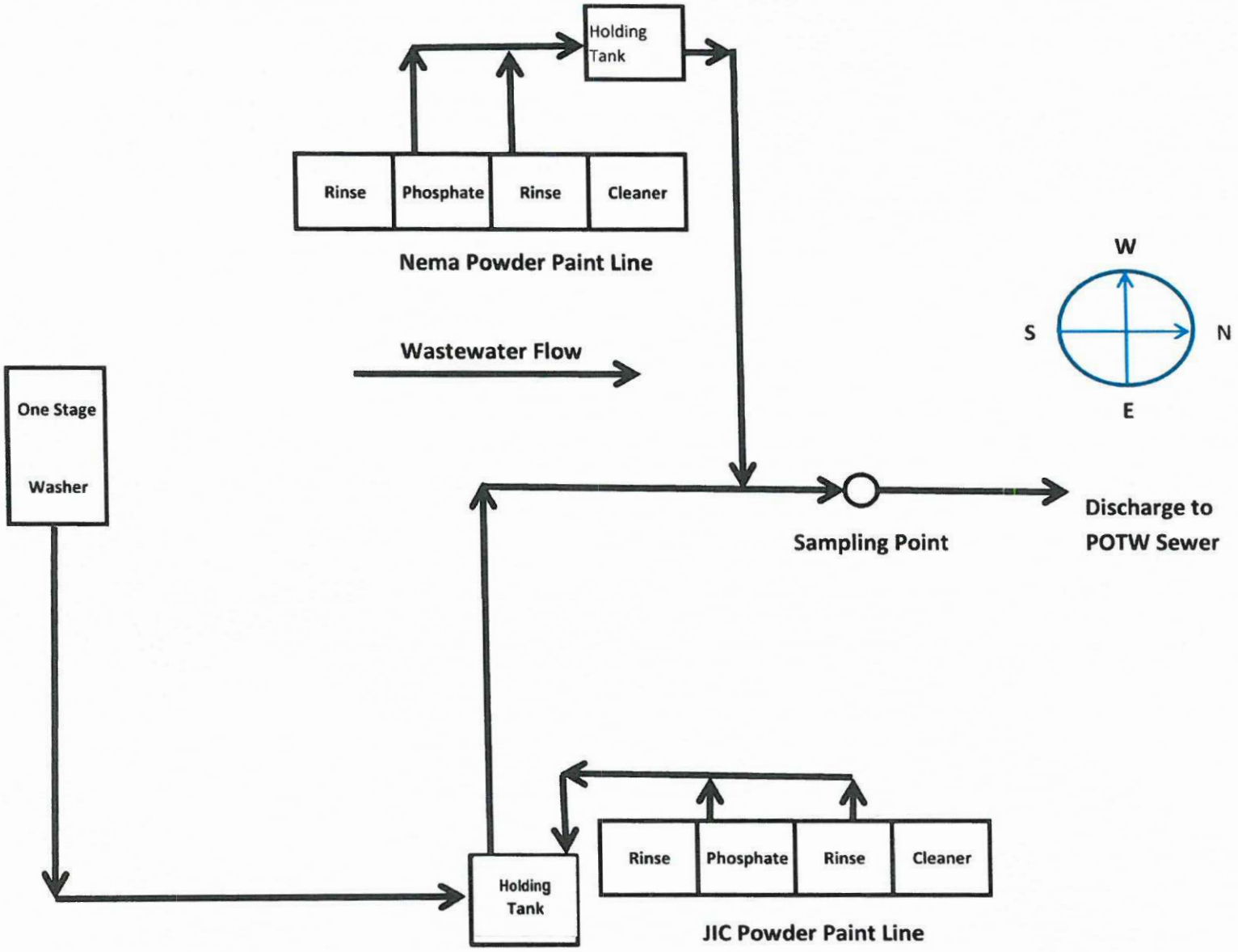
77: RIMG0077
Description: Scrap metal bins on east side of main building. Note covers on bins to prevent stormwater contact.
Location: East side of main building.
Camera Direction: Southwest
Date/Time: 03/24/2021 2:02 PM

Arial Photo of Hubbell Wiegmann


N
W
E
S
1 inch = 100 feet
Warehouse
Main Building
Compressor Building
Hubbell Wiegmann
501 W Apple Street
Freeburg, Illinois 62243
St. Clair County
38.42268926419547, -89.91523035035878
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Documents Provided by Hubbell Wiegman

Process Diagram


Holding Tank
Rinse
Phosphate
Rinse
Cleaner
Nema Powder Paint Line
Wastewater Flow
W
S
N
E
One Stage
Washer
Sampling Point
Discharge to POTW Sewer
Holding Tank
Rinse
Phosphate
Rinse
Cleaner
JIC Powder Paint Line

Piping Diagram

Feb

MAIN NEMA GAS SHUT OFF

E10 E9 E8 E6 E4 E2

F20 P8 F11

FLOOR DRAIN

FLOOR DRAIN

F23 F19 F13 W4

FLOOR DRAIN

B1

HOLDING TANK WASTE WATER DISCHARGE LINE

W3

F22 F12

F30 A4 AED F14

R2 F21

S2

W11 E29 F15 E16 F16 F17

E28 E27

FLOOR DRAIN

MAIN WATER SHUT OFF

W5

FLOOR DRAIN

F25 P10 EXIT B A3 F18 E26

WOMENS FLOOR DRAIN MENS SMALL CONFERENCE ROOM P5 FOREMAN OFFICE FLOOR DRAIN

MAIN ARGON

MAIN FACILITY GAS SHUT OFF

EXIT 4

FD1 F8 P.O.P. ROOM P2

F9

FLOOR DRAIN

F10 W1 P1 EXIT

FLOOR DRAIN

A2 FLOOR DRAIN P3

MENS FLOOR DRAIN

FLOOR WOMENS DRAIN

R1 F6

F4

FLOOR DRAIN

FLOOR DRAIN LOCATION UNKNOWN DUE TO CARPET

FLOOR DRAIN PROPOSED LOCATION

FLOOR DRAIN PROPOSED LOCATION F1

FLOOR DRAIN WOMENS

E24 W2 A1 F62 CAFETERIA

S1

FLOOR DRAIN FLOOR DRAIN FLOOR DRAIN

FLOOR DRAIN MENS F2 P4 F1 P18

HOLDING TANK

HOLDING TANK WASTE WATER DISCHARGE LINE

GARAGE EXIT 2 E25 EXIT

BRICK

MARKET POINT

ACCESS POINT

interpreted as by, and in accord

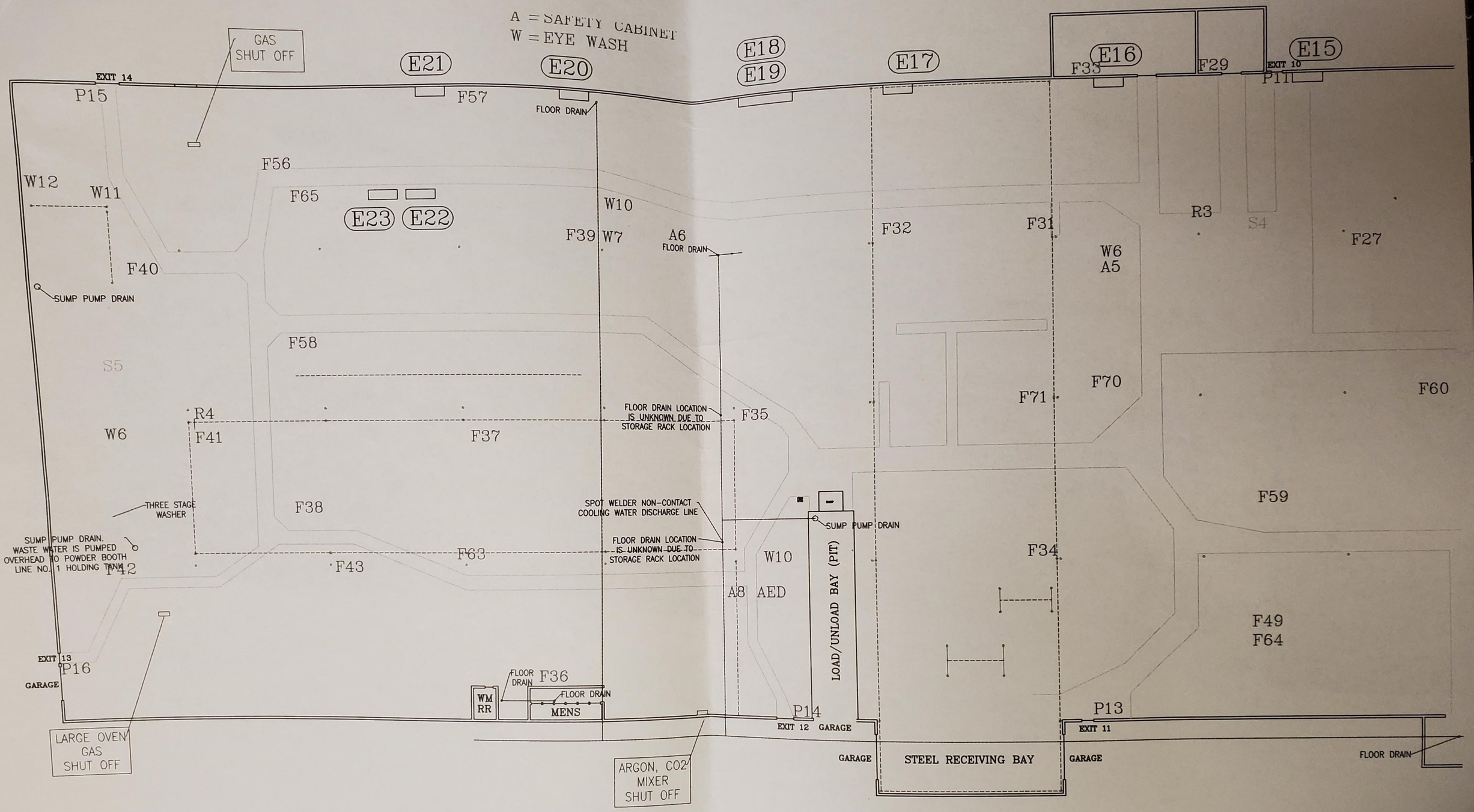
(29CFR1910.1200) including cited appendices, list

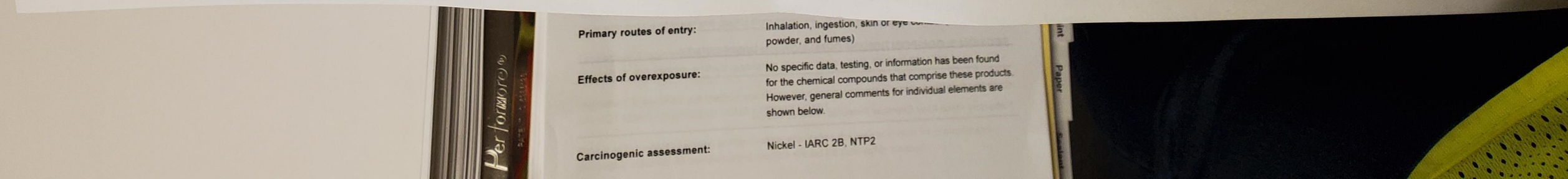
Primary routes of entry: Inhalation, ingestion, skin or eye contact (for dusts, mist, powder, and fumes)

Effects of overexposure: No specific data, testing, or information has been found for the chemical compounds that comprise these products. However, general comments for individual elements are shown below.

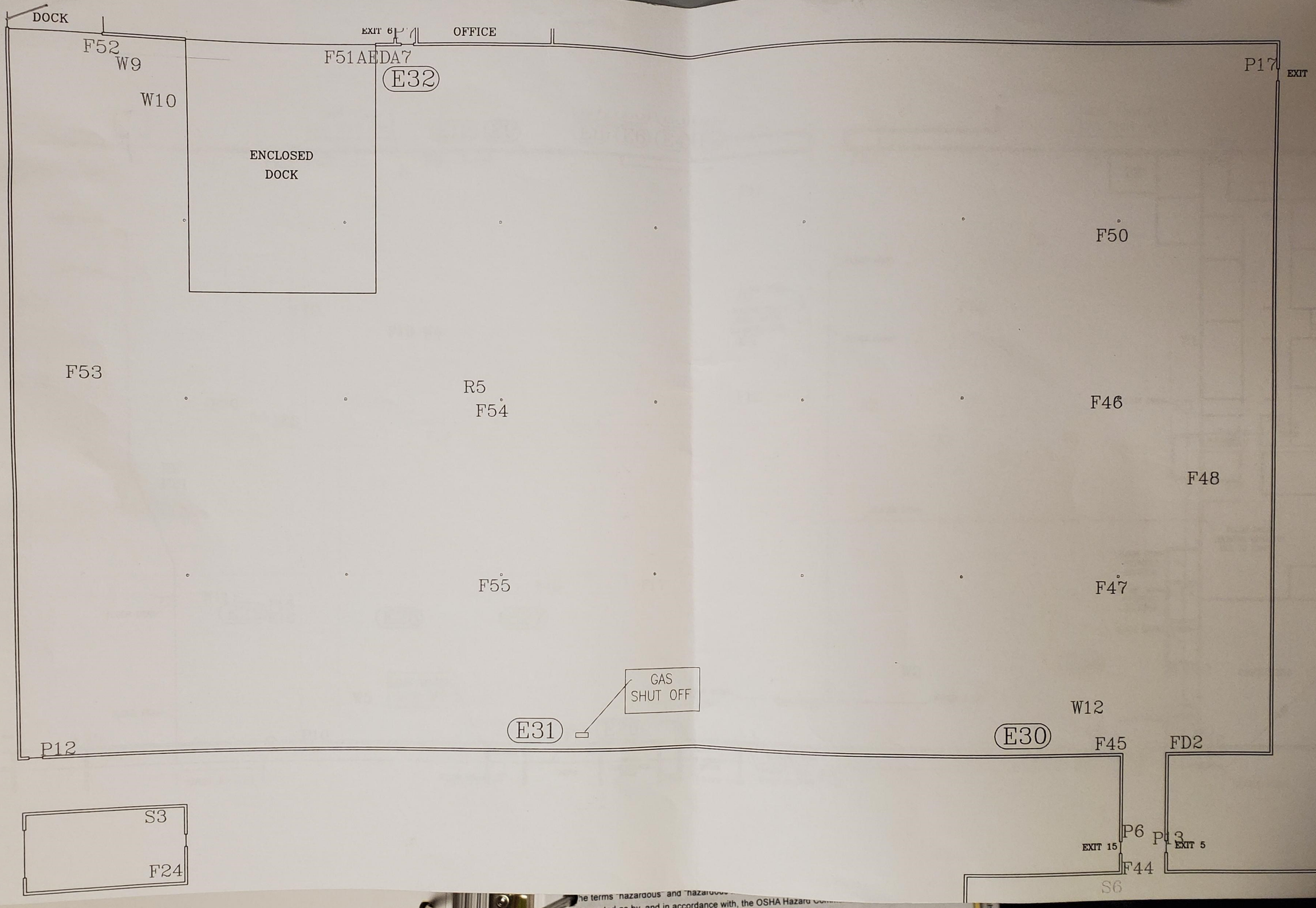
Nickel - IARC 2B, NTP2

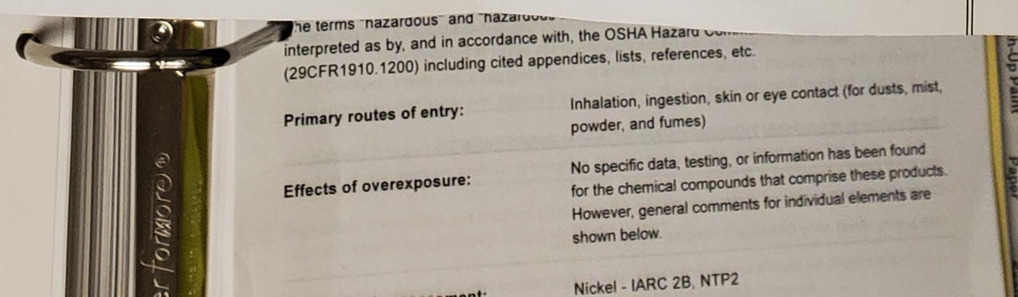
assessment:





Primary routes of entry:	Inhalation, ingestion, skin or eye co… powder, and fumes)
Effects of overexposure:	No specific data, testing, or information has been found for the chemical compounds that comprise these products. However, general comments for individual elements are shown below.
Carcinogenic assessment:	Nickel - IARC 2B, NTP2





he terms "hazardous" and "hazardous
interpreted as by, and in accordance with, the OSHA Hazard Co
(29CFR1910.1200) including cited appendices, lists, references, etc.

Primary routes of entry:	Inhalation, ingestion, skin or eye contact (for dusts, mist, powder, and fumes)
Effects of overexposure:	No specific data, testing, or information has been found for the chemical compounds that comprise these products. However, general comments for individual elements are shown below.
	Nickel - IARC 2B, NTP2

Paper
Up Paint

Sampling Procedure

Monthly Water Testing Sampling

<u>The samples must be collected and submitted to PDC Labs before the 15th of each month.</u>

Step 1: The Contact Person (Supervisor) will obtain the testing kit (cooler) from PDC Labs and verify the contents.

- 1 Chain of Custody Record (COC) sheet in a resealable plastic bag.
- 1 bottle SP01-Composite (Nitric Acid on red label CAS# 7697-37-2).
- 1 bottle SP01-Grab (Sodium Hydroxide on a green label CAS# 1310-73-2).
- 1 bottle SP01-Grab (Nitric Acid on a red label CAS# 7697-37-2).
- 1 bottle SP01-Grab (Sulfuric Acid on a yellow label CAS# 7664-93-9).
- 1 resealable plastic bag for the sample bottles.

Step 2: The Contact Person will notify the Sampler (production worker) when testing will be conducted and give the Sampler the cooler.

Step 3: The Sampler will proceed to the sampling area (manhole cover between JIC packaging and assembly) and collect the samples, in 1-hour increments, in the following order:

a. First sample will be for SP01-Composite. Only fill 1/3 of the bottle on this sample.
b. Second sample will be for SP01-Composite. Fill second 1/3 of the bottle on this sample.
c. Third sample will be filling the remaining SP01-Composite, along with filling the 3 SP01-Grab bottles.

Step 4: Upon collection completion, the Sampler will do the following:

a. Place all bottles within the resealable plastic bag, seal it, and place the sealed bag in the cooler.
b. Fill out the following sections of the COC sheet:
    a. “Sampler” (Printed Name).
    b. “Sampler’s Signature”.
    c. “Effluent Composite” - date collected and the 3 times samples were collected.
    d. “Effluent Grab” – date collected, and time collected.
c. Notify the Contact Person that the sampling is completed.

Step 5: The Contact Person will obtain the cooler and perform the following:

a. Verify COC is correctly filled out.
b. Immediately put ice on the samples, and note the start time of the chill process, on the COC sheet.
c. Contact PDC Labs for cooler pick up.
d. Before handing off the cooler to PDC Labs, sign, date, and time stamp the “Relinquished by” section.

Hauled Waste Final Disposition

ILLINI
Environmental, Inc.

P.O. Box 387
8895 California Drive
Caseyville, Illinois 62232
Phone: 618-397-1234
Fax: 618-397-3234

Hubbell-Wiegmann
501 West Apple St.
Freeburg, IL 62243

Re: Methods of Disposal for the following Waste Streams

Hello,

Per your request, please see the methods of disposal for each of your waste streams, as listed by their Material Name and Illini Approval Number.

20-275-5 (Wash Sump and Holding Tanks):

- Material is transported to Illini via Vac Tanker. The material is blended with a solidification agent until it passes paint filter. Once solidified, the material is transferred to a bulk container to be shipped to WM Milam Landfill.

20-321-8 (Universal Waste):

- Universal Waste is transported to Illini via Van Trailer. The Universal Waste is either counted or weighed depending on the material. The Waste is sorted into separate containers depending on the final disposal facility. Ex.) Lamps and Batteries will be sent to two different disposal facilities.

20-328-6 (RCRA Empty Drum):

- Poly Drums are transported to Illini via Van Trailer. They are added to a bulk load of RCRA Empty containers that Illini transports to WM Milam Landfill on a semi-regular basis.
- Steel Drums are transported to Illini via Van Trailer. They are crushed and added to our steel scrap for recycle.

Thank you,

Tyler Martini
EHS Manager

Waste Hauling Manifests

STRAIGHT BILL OF LADING – ORIGINAL – NOT NEGOTIABLE

132809

Shipper's No. _____

Carrier's No. ILR000107085

Carrier ILLINI ENVIRONMENTAL, INC. SCAC Date

TO: Consignee CONTAINER DISTRIBUTORS	FROM: Shipper HUBBELL WIEGMANN
Street 1200 BISSELL ST	Street 501 WEST APPLE STREET
Destination VENICE, IL Zip 62090	Origin FREEBURG, IL Zip 62243
Route	Vehicle Number
U.S. DOT Hazmat Reg. No. 1035665	

Number and Type of Packages	HM	Description of Articles	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
41	dm	RCRA "EMPTY CYCLINDER" (LESS THAN 1 INCH OF RESIDUAL MATERIA TOTES FOR RECYCLING			

Lindsay King 8/26/20
Tracking # 20-2342
APPROVAL #
INVOICE (HUBBELL WIEGMANN

Remit COD to:
Address:
City: State: Zip:

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

COD AMT: $

TOTAL CHARGES: $

COD FEE: Prepaid ☐ Collect ☐ $

FREIGHT CHARGES: ☐ Prepaid ☐ Collect

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations; the Property described above, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation PER:

SHIPPER: _____ CARRIER: _____

PER: _____ DATE: _____ PER: _____ DATE: 8-26-20

EMERGENCY RESPONSE TELEPHONE NUMBER:

NAME OR CONTRACT NUMBER OR OTHER UNIQUE IDENTIFIER:

491 (Rev. 3/17)

133548

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: C E S Q G
2. Page 1 of: 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 022122408 JJK

5. Generator's Name and Mailing Address
HUBBELL WIEGMANN
901 WEST APPLE STREET
FREEBURG IL 62243
Attn: JEFF GROH
Generator's Site Address (if different than mailing address)
Generator's Phone: 618 710-8036

6. Transporter 1 Company Name: ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: I L R 0 0 0 1 0 7 0 8 6

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8885 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 397-1234
U.S. EPA ID Number: I L R 0 0 0 1 0 7 0 8 6

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	001	TT	3500	G	IL18	IL19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-5 LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)
Tracking # 20-2714

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Jeff Groh
Signature:
Month: 10 Day: 02 Year: 2020

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Tyrone Fisher
Signature:
Month: 10 Day: 02 Year: 20
Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Mitch Simpson
Signature: Mitch Simpson
Month: 10 Day: 2 Year: 20

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

133769

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator ID Number: CESQG
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 022114654 JJK

5. Generator's Name and Mailing Address
HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Generator's Phone: 618 710-8038

~~Att JEFF GROH~~ Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: ILR000107086

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8895 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 397-1234
U.S. EPA ID Number: ILR000107086

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	001	TT	2100	G	IL18	IL19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-5 LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)
Tracking # 20-2794

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: STEVE KERSE
Signature: [signature]
Month: 10 Day: 13 Year: 20

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chuck Wiegman
Signature: [signature]
Month: 10 Day: 13 Year: 20

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. ~~Hazardous~~ Waste Report Management Method Codes (i.e., codes for ~~hazardous~~ waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of ~~hazardous~~ materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Mitch Simpson
Signature: [signature]
Month: 10 Day: 13 Year: 20

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

134025

Form Approved. OMB No. 2050-0039

Please print or type.

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	CESQG	1	800-424-9300	022114725 JJK

5. Generator's Name and Mailing Address
HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Generator's Phone: 618 710-8036

Attn JEFF GROH Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: ILR000107088

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8885 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 307-1234
U.S. EPA ID Number: ILR000107088

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	001	TT	2800	G	IL18	IL19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-5 LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN) Tracking # 20-2941

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ARON KASH-IAP Signature: [signature] Month: 10 Day: 23 Year: 20

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Mitch Simpson Signature: [signature] Month: 10 Day: 23 Year: 20

Transporter 2 Printed/Typed Name: Signature: Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month: Day: Year:

19. ~~Hazardous~~ Waste Report Management Method Codes (i.e., codes for ~~hazardous~~ waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of ~~hazardous~~ materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Mitch Simpson Signature: [signature] Month: 10 Day: 23 Year: 20

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

134163

Form Approved. OMB No. 2050-0039

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: C E S O G
2. Page 1 of: 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 022114607 JJK

~~ALL JEFF GROH~~ Generator's Site Address (if different than mailing address)

5. Generator's Name and Mailing Address
HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Generator's Phone: 618 710-9030

U.S. EPA ID Number

6. Transporter 1 Company Name: ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: ILR000107086

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8885 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 397-1234
U.S. EPA ID Number: ILR000107086

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	001	TT	4500	G.	IL18 IL19
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-5 LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)
Tracking # 20-3008

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ARUN KASHYAP
Signature:
Month: 10 Day: 30 Year: 2020

TRANSPORTER INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Tyrone Fisher
Signature: Tyrone Fisher
Month: 10 Day: 30 Year: 20

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Mitch Simpson
Signature: Mitch Simpson
Month: 10 Day: 30 Year: 20

134166

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CESQG
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 02114608 JJK

5. Generator's Name and Mailing Address:
HUSSELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Generator's Phone: 618 710-8036

ATT: JEFF GROH Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: ILR000107086

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address:
ILLINI ENVIRONMENTAL INC
9995 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 397-1234
U.S. EPA ID Number: ILR000107086

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	001	TT	2350	G	IL18	IL19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-5 LFS
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUSSEL WIEGMANN)
Jacking # 20-3008

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ARVN KASHYAP
Signature:
Month: 10 Day: 30 Year: 2020

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Tyrone fisher
Signature:
Month: 10 Day: 30 Year: 20
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Mitch Simpson
Signature:
Month: 10 Day: 30 Year: 20

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

134371

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	C E S Q G	1	800-424-9300	022114790 JJK

5. Generator's Name and Mailing Address
HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Generator's Phone: 6 1 8 7 1 0 - 8 0 3 8

Attn JEFF GROH Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: ILLINI ENVIRONMENTAL INC — U.S. EPA ID Number: I L R 0 0 0 1 0 7 0 8 6

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8895 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 397-1234
U.S. EPA ID Number: I L R 0 0 0 1 0 7 0 8 6

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	001	TT	5000	G	IL18	IL19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-5 LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)
Tracking #20-3151

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Michael Budde — Signature — Month: 11 Day: 13 Year: 20

INTL
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: John Dontigney — Signature — Month: 11 Day: 13 Year: 20
Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month — Day — Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Caleb Wright — Signature — Month: 11 Day: 13 Year: 20

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

134372

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number: CESQG	2. Page 1 of 1	3. Emergency Response Phone: 800-424-9300	4. Manifest Tracking Number: 022114791 JJK

5. Generator's Name and Mailing Address Att: JEFF GROH
HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Generator's Phone: 618 710 8036

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: ILR000107086

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8895 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 387-1234
U.S. EPA ID Number: ILR000107086

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	001	TT	1500	g	IL18	IL19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-3 LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)
Tracking # 20-3151

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Michael Budde Signature: [signature] Month/Day/Year: 11 13 20

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: John Dartigney Signature: [signature] Month/Day/Year: 11 13 20
Transporter 2 Printed/Typed Name: Signature: Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Caleb Wright Signature: [signature] Month/Day/Year: 11 13 20

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

STRAIGHT BILL OF LADING – ORIGINAL – NOT NEGOTIABLE

134416

Shipper's No. 1035665

ILLINI ENVIRONMENTAL, INC.

Carrier's No.

Carrier SCAC Date

TO: Consignee ILLINI ENVIRONMENTAL INC	**FROM:** Shipper HUBBELL WIEMANN
Street 8895 CALIFORNIA DRIVE	Street 501 WEST APPLE STREET
Destination CASEYVILLE, IL Zip 62232	Origin FREEBURG, IL Zip 62243
Route BEST WAY	Vehicle Number
	U.S. DOT Hazmat Reg. No. 052914550026WY

Number and Type of Packages	HM	Description of Articles	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
1		UNIVERSAL WASTE BALLASTS	100	P	
1		UNIVERSAL WASTE (TV/MICROWAVE)	100	P	
34		NSN Hazardous, NSN RCRA, (RCRA Drums) Not DOT Regulated	0	9	

TRACKING # 20-3269
APPROVAL # 20-321-8
INVOICE (HUBBELL WIEGMANN)

Remit COD to:
Address:
City: State: Zip:

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

COD AMT: $

TOTAL CHARGES: $

COD FEE: Prepaid ☐ Collect ☐ $

FREIGHT CHARGES: ☐ Prepaid ☐ Collect

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations; the Property described above, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation PER:

SHIPPER: Hubbell Wiegmann
PER: [signature] DATE: 11/25/20

CARRIER: Illini Environmental
PER: [signature] DATE: 11-25-20

EMERGENCY RESPONSE TELEPHONE NUMBER: 800 424 9300

NAME OR CONTRACT NUMBER OR OTHER UNIQUE IDENTIFIER: Chemtrec

491 (Rev. 3/17)

134637

2051

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CESOG

2. Page 1 of: 1

3. Emergency Response Phone: 800-424-9300

4. Manifest Tracking Number: 02139199 JJK

5. Generator's Name and Mailing Address
HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Generator's Phone: 618 710-8030

Generator's Site Address (if different than mailing address)
Att: JEFF GROH

6. Transporter 1 Company Name: ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: ILR000107086

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8885 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 397-1234
U.S. EPA ID Number: ILR000107086

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	001	TT	3,027	G	IL 18	IL 19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-S LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)
Tracking # 20-3352

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Jorge Garcia
Signature: Jorge Garcia
Month: 12 Day: 8 Year: 20

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: John Dorighey
Signature: John
Month: 12 Day: 8 Year: 20
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a
Printed/Typed Name: Caleb Wright
Signature: Caleb Wright
Month: 12 Day: 8 Year: 20

STRAIGHT BILL OF LADING – ORIGINAL – NOT NEGOTIABLE

135395

Shipper's No. ______

Carrier's No. ILR000107086

Carrier: ILLINI ENVIRONMENTAL, INC.

SCAC

Date 01-05-21

TO: Consignee: ILLINI ENVIRONMENTAL, INC.	**FROM:** Shipper: HUBBELL WIEGMANN
Street: 8895 CALIFORNIA DRIVE	Street: 501 WEST APPLE STREET
Destination: CASEYVILLE, IL Zip: 62232	Origin: FREEBURG, IL Zip: 62243
Route	Vehicle Number: 1935 / U.S. DOT Hazmat Reg. No. 052914550026WY

Number and Type of Packages	HM	Description of Articles	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
3 Boxes		FLUORESCENT BULBS (4FT) 79			
1-Box		FLUORESCENT BULBS (8FT) 26			
1-5gal DF		NON-HAZARDOUS ALKALINE BATTERIES	55 lb		
1-5gal DF		HALOGEN LIGHT BULBS 3			
1-5gal DF		UN2794, BATTERIES, WET, FILLED WITH ACID, 8, PG III, (ERG 154) (UNIVERSAL WASTE BATTERIES FOR RECYCLING)	50 lb		
1-5gal DF		NON-HAZARDOUS NI-CAD BATTERIES FOR RECYLING (UNIVERSAL WASTE BATTERIES FOR RECYCLING)	40 lb		
1-5gal DF		Non-Hazardous Lithium Ion Batteries for Recycling (Universal Waste Batteries for Recycling)	30 lb		

TRACKING #: 21-041
APPROVAL #20-321-6
INVOICE (HUBBELL WIEGMANN)

Remit COD to:
Address:
City: State: Zip:

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

COD AMT: $

COD FEE: Prepaid ☐ Collect ☐ $

TOTAL CHARGES: $

FREIGHT CHARGES: ☐ Prepaid ☐ Collect

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations; the Property described above, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation PER:

SHIPPER: [signature] 1-5-21 CARRIER: Illini Env.
PER: DATE: PER: [signature] DATE: 01-05-21

EMERGENCY RESPONSE TELEPHONE NUMBER: 800-424-9300

NAME OR CONTRACT NUMBER OR OTHER UNIQUE IDENTIFIER: Chemtrec

491 (Rev. 3/17)

1 35497

423

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	CESQG	1	800-424-9300	022904668 JJK

5. Generator's Name and Mailing Address — Att: JEFF GROH — Generator's Site Address (if different than mailing address)

HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243

Generator's Phone: 618 710-2038

6. Transporter 1 Company Name: ILLINI ENVIRONMENTAL INC — U.S. EPA ID Number: ILR000107086

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number: ILR000107086

ILLINI ENVIRONMENTAL INC
8895 CALIFORNIA DRIVE
CASEYVILLE IL 62232

Facility's Phone: 618 397-1734

GENERATOR

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	1	TT	5100	G	IL18	IL19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information

APPROVAL (1) 22-275-5 LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)

Tracking # 21-080

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: [signature] — Signature: James Huffman — Month 01 Day 9 Year 21

INT'L — 16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER — 17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Denise Evans — Signature: Denise Evans — Month 01 Day 09 Year 21

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Mitch Simpson — Signature: Mitch Simpson — Month 1 Day 9 Year 21

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. **DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM**

135525

2054

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CFSOG
2. Page 1 of: 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 022901888 JJK

GENERATOR

5. Generator's Name and Mailing Address
HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Att: JEFF GROH
Generator's Phone: 618 719-8858

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: ILR000107086

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8885 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 337-1294
U.S. EPA ID Number: ILR000107086

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	1	TI	2800	G	IL18 IL10
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-5 LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)
Tracking # 21-149

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Scott Tuthill
Signature
Month: 01 Day: 16 Year: 21

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Denise Evans
Signature: Denise Evans
Month: 01 Day: 16 Year: 21
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a
Printed/Typed Name: Mitch Simpson
Signature: Mitch Simpson
Month: 1 Day: 16 Year: 21

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

136161

423

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	CESQG	1	800-424-9300	022902204 JJK

GENERATOR

5. Generator's Name and Mailing Address
HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Generator's Phone: 618 710-8036

Attn: JEFF GROH Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: ILR000107088

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8895 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 397-1234
U.S. EPA ID Number: ILR000107088

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	1	TT	5000	G	IL18	IL19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-S LEB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)
Tracking # 21-385

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Jim Huffman
Signature:
Month: 02 Day: 13 Year: 2021

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Denise Evans
Signature: Denise Evans
Month: 02 Day: 13 Year: 2021
Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tyler Martini
Signature:
Month: 2 Day: 13 Year: 21

13e162

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: C E S Q G
2. Page 1 of: 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 022902225 JJK

GENERATOR

5. Generator's Name and Mailing Address
HUBBELL WIEGMANN
501 WEST APPLE STREET
FREEBURG IL 62243
Attn: JEFF GROH
Generator's Phone: 6 1 8 7 1 0 - 8 0 3 8
Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: ILLINI ENVIRONMENTAL INC
U.S. EPA ID Number: I L R 0 0 0 1 0 7 0 8 6

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
ILLINI ENVIRONMENTAL INC
8895 CALIFORNIA DRIVE
CASEYVILLE IL 62232
Facility's Phone: 618 397-1234
U.S. EPA ID Number: I L R 0 0 0 1 0 7 0 8 6

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON HAZARDOUS, NON RCRA, (WASH WATER) NOT DOT REGULATED	001	TT	3628	G	IL19	IL19	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
APPROVAL (1) 20-275-5 LFB
IL TRANS# 5256 IL SITE# 1630255011
INVOICE (HUBBEL WIEGMANN)
Tracking #21-405 (3628)

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: X Jorge Gerera
Signature: Xjorge Garcia
Month: 2 Day: 18 Year: 21

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: J Medina
Signature:
Month: 2 Day: 18 Year: 2021

Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a
Printed/Typed Name: Mitch Simpson
Signature: Mitch Simpson
Month: 2 Day: 18 Year: 21

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Water and Sewer Records

HUBBELL INCORPORATED
40 Waterview Drive
Shelton, CT 06484-1000
(475) 882-4000

Tradition Energy

Reports - Bill Detail Detail

Invoice # 406732783
Scan Date: 02/21/2020
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD

GREENVILLE, SC 29607

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
406732783	Feb 21, 2020	Live	Mar 7, 2020
Payment Date			03/02/2020

Electric - NA
01/16/20 - 02/15/20 Bill Period: 202002

WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 27,230.66
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,487.85
Current Electric - NA Charges	**$ 30,718.51**

Outdoor Light - NA
01/16/20 - 02/15/20 Bill Period: 202002

NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**

Water - NA
01/16/20 - 02/15/20 Bill Period: 202002

WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,225.91
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 586.28
Current Water - NA Charges	**$ 1,812.19**

Sewer - NA
01/16/20 - 02/15/20 Bill Period: 202002

WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,159.71
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 554.62
Current Sewer - NA Charges	**$ 1,714.33**

TAX	$ 829.71
Total Due	**$ 35,106.74**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	02/15/20	28801	28478	323	800	258,400 kWh - UNSPECIFIED	$ 27,230.66	88.65
UNKNOWN	501 W APPLE ST	02/15/20	883	0	883	1	883 kW - UNSPECIFIED	$ 3,487.85	11.35
Total:								$ 30,718.51	100.00

Optimized Cost (Actual): $ 31,462.08 (Override): 31462.08 Usage (Actual): 258400 kWh (Override): 258400.00000 $ 0.1218/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.77 (Override): 32.77 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	02/15/20	2900040	2734850	165190	1	165,190 Gallons	$ 1,225.91	418.36
UNKNOWN2	501 W APPLE ST	02/15/20	2282000	2203000	79000	1	79,000 Gallons	$ 586.28	200.08
Total:								$ 1,812.19	100.00

Optimized Cost (Actual): $ 1,856.06 (Override): 1856.06 Usage (Actual): 244190 Gallons (Override): 244190.00000 $ 0.0076/Gallons

Reports - Bill Detail Detail

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Invoice # 407200101
Scan Date: 03/20/2020
VILLAGE OF FREEBURG
Account: 0033038000

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
407200101	Mar 20, 2020	Live	Apr 7, 2020
Payment Date			04/01/2020

Electric - NA	
02/16/20 - 03/15/20 Bill Period: 202003	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 28,248.87
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,614.25
Current Electric - NA Charges	**$ 31,863.12**
Outdoor Light - NA	
02/16/20 - 03/15/20 Bill Period: 202003	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
02/16/20 - 03/15/20 Bill Period: 202003	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,478.20
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 615.95
Current Water - NA Charges	**$ 2,094.15**
Sewer - NA	
02/16/20 - 03/15/20 Bill Period: 202003	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,397.86
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 582.47
Current Sewer - NA Charges	**$ 1,980.33**
TAX	$ 842.24
TAX	$ 2.93
Total Due	**$ 36,814.77**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	03/15/20	29130	26801	329	800	263,200 kWh - UNSPECIFIED	$ 28,248.87	88.66
UNKNOWN	501 W APPLE ST	03/15/20	915	0	915	1	915 kW - UNSPECIFIED	$ 3,614.25	11.34
Total:								**$ 31,863.12**	**100.00**

Optimized Cost (Actual): $ 32,611.80 (Override): 32611.80 Usage (Actual): 263200 kWh (Override): 263200.00000 $ 0.1239/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.75 (Override): 32.75 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	03/15/20	3099230	2900040	199190	1	199,190 Gallons	$ 1,478.20	436.52
UNKNOWN2	501 W APPLE ST	03/15/20	2365000	2282000	83000	1	83,000 Gallons	$ 615.95	181.89
Total:								**$ 2,094.15**	**100.00**

Reports - Bill Detail Detail

Hubbell
701 MILLENNIUM BLVD

GREENVILLE, SC 29607

Invoice # 407709060
Scan Date: 04/20/2020
VILLAGE OF FREEBURG
Account: 0033036000

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
407709060	Apr 20, 2020	Live	May 7, 2020
Payment Date			05/01/2020

Electric - NA	
03/16/20 - 04/15/20 Bill Period: 202004	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 31,527.51
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,353.55
Current Electric - NA Charges	**$ 34,881.06**
Outdoor Light - NA	
03/16/20 - 04/15/20 Bill Period: 202004	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
03/16/20 - 04/15/20 Bill Period: 202004	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,978.65
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,172.47
Current Water - NA Charges	**$ 3,151.12**
Sewer - NA	
03/16/20 - 04/15/20 Bill Period: 202004	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,869.82
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,107.66
Current Sewer - NA Charges	**$ 2,977.48**
TAX	$ 908.96
Total Due	**$ 41,950.62**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	04/15/20	29484	29130	354	800	283,200 kWh - UNSPECIFIED	$ 31,527.51	90.39
UNKNOWN	501 W APPLE ST	04/15/20	849	0	849	1	849 kW - UNSPECIFIED	$ 3,353.55	9.61
Total:								$ 34,881.06	100.00

Optimized Cost (Actual): $ 35,653.58 (Override): 35653.58 Usage (Actual): 283200 kWh (Override): 283200.00000 $ 0.1259/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.71 (Override): 32.71 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	04/15/20	3365870	3099230	266640	1	266,640 Gallons	$ 1,978.65	388.31
UNKNOWN2	501 W APPLE ST	04/15/20	2523000	2365000	158000	1	158,000 Gallons	$ 1,172.47	230.09
Total:								$ 3,151.12	100.00

Optimized Cost (Actual): $ 3,220.91 (Override): 3220.91 Usage (Actual): 424640 Gallons (Override): 424640.00000 $ 0.0076/Gallons

Reports - Bill Detail Detail

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Invoice # 408327734
Scan Date: 05/21/2020
VILLAGE OF FREEBURG
Account: 0033038000

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
408327734	May 21, 2020	Live	Jun 7, 2020
Payment Date			06/01/2020

Electric - NA	
04/16/20 - 05/15/20 Bill Period: 202005	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 23,041.27
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,653.75
Current Electric - NA Charges	**$ 26,695.02**
Outdoor Light - NA	
04/16/20 - 05/15/20 Bill Period: 202005	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
04/16/20 - 05/15/20 Bill Period: 202005	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,017.92
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 564.03
Current Water - NA Charges	**$ 1,581.95**
Sewer - NA	
04/16/20 - 05/15/20 Bill Period: 202005	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 963.34
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 533.78
Current Sewer - NA Charges	**$ 1,497.12**
TAX	$ 614.80
Total Due	**$ 30,420.89**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	05/15/20	29723	29484	239	800	191,200 kWh - UNSPECIFIED	$ 23,041.27	86.31
UNKNOWN	501 W APPLE ST	05/15/20	925	0	925	1	925 kW - UNSPECIFIED	$ 3,653.75	13.69
Total:								**$ 26,695.02**	**100.00**

Optimized Cost (Actual): $ 27,245.65 (Override): 27245.65 Usage (Actual): 191200 kWh (Override): 191200.00000 $ 0.1425/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.66 (Override): 32.66 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	05/15/20	3503030	3365870	137160	1	137,160 Gallons	$ 1,017.92	397.95
UNKNOWN2	501 W APPLE ST	05/15/20	2599000	2523000	76000	1	76,000 Gallons	$ 564.03	220.51
Total:								**$ 1,581.95**	**100.00**

Optimized Cost (Actual): $ 1,614.58 (Override): 1614.58 Usage (Actual): 213160 Gallons (Override): 213160.00000 $ 0.0076/Gallons

Reports - Bill Detail Detail

Invoice # 409413587
Scan Date: 06/19/2020
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
409413587	Jun 19, 2020	Live	Jul 7, 2020
Payment Date			07/01/2020

Electric - NA	
05/16/20 - 06/15/20 Bill Period: 202006	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 32,618.46
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,310.10
TAX	$ 875.52
Current Electric - NA Charges	**$ 36,804.08**
Outdoor Light - NA	
05/16/20 - 06/15/20 Bill Period: 202006	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
05/16/20 - 06/15/20 Bill Period: 202006	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 2,802.91
Current Water - NA Charges	**$ 2,802.91**
Sewer - NA	
05/16/20 - 06/15/20 Bill Period: 202006	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 2,648.97
Current Sewer - NA Charges	**$ 2,648.97**
TAX	$ 2.68
Total Due	**$ 42,290.64**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE		COST	COST %
UNKNOWN	501 W APPLE ST	06/15/20	30065	29723	342	800	273,600	kWh - UNSPECIFIED	$ 32,618.46	90.79
UNKNOWN	501 W APPLE ST	06/15/20	838	0	838	1	838	kW - UNSPECIFIED	$ 3,310.10	9.21
Total:									**$ 35,928.56**	**100.00**

Optimized Cost (Actual): $ 36,806.41 (Override): 36806.41 Usage (Actual): 273600 kWh (Override): 273600.00000 $ 0.1345/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.00 (Override): 32.00 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE		COST	COST %
UNKNOWN1	501 W APPLE ST	06/15/20	0	0	0	1	377,710	Gallons	$ 2,802.91	100.00
Total:									**$ 2,802.91**	**100.00**

Optimized Cost (Actual): $ 2,803.09 (Override): 2803.09 Usage (Actual): 377710 Gallons (Override): 377710.00000 $ 0.0074/Gallons

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Welcome back, Michael Budde Home My Settings FAQ's Support Reminder Print Download Logout

HUBBELL INCORPORATED
40 Waterview Drive
Shelton, CT 06484-1000
(475) 882-4000

Tradition Energy

General | Dashboard | Reports | Analysis | Trends | Weather | Accounting | Site | ENERGY STAR | Options | Update | myFavorites

Reports - Bill Detail Detail

Invoice # 409865051
Scan Date: 07/21/2020
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Image | Notes | GL DIST | GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
409865051	Jul 21, 2020	Live	Aug 7, 2020
Payment Date			08/03/2020

Electric - NA	
06/16/20 - 07/15/20 Bill Period: 202007	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 27,811.77
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,223.20
Current Electric - NA Charges	**$ 31,034.97**
Outdoor Light - NA	
06/16/20 - 07/15/20 Bill Period: 202007	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
06/16/20 - 07/15/20 Bill Period: 202007	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 289.28
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,499.76
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 0.00
Current Water - NA Charges	**$ 1,789.04**
Sewer - NA	
06/16/20 - 07/15/20 Bill Period: 202007	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,692.49
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 0.00
Current Sewer - NA Charges	**$ 1,692.49**
TAX	$ 760.37
Total Due	**$ 35,308.87**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	07/15/20	30361	30065	296	800	236,800 kWh - UNSPECIFIED	$ 27,811.77	89.61
UNKNOWN	501 W APPLE ST	07/15/20	816	0	816	1	816 kW - UNSPECIFIED	$ 3,223.20	10.39
Total:								$ 31,034.97	100.00

Optimized Cost (Actual): $ 31,718.01 (Override): 31718.01 Usage (Actual): 236800 kWh (Override): 236800.00000 $ 0.1339/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.70 (Override): 32.70 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	07/15/20	3901810	3721740	180070	1	180,070 Gallons	$ 289.28	16.17
UNKNOWN1	501 W APPLE ST	07/15/20	0	0	0	1	0 Gallons	$ 1,499.76	83.83
UNKNOWN2	501 W APPLE ST	07/15/20	2819000	2758000	61000	1	61,000 Gallons	$ 0.00	0.00

Reports - Bill Detail Detail

Invoice # 410326226
Scan Date: 08/20/2020
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
410326226	Aug 20, 2020	Live	Sep 7, 2020
Payment Date			09/01/2020

Electric - NA	
07/16/20 - 08/15/20 Bill Period: 202008	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 36,745.45
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,969.75
TAX	$ 1,052.16
Current Electric - NA Charges	**$ 41,767.36**
Outdoor Light - NA	
07/16/20 - 08/15/20 Bill Period: 202008	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
07/16/20 - 08/15/20 Bill Period: 202008	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 2,842.46
Current Water - NA Charges	**$ 2,842.46**
Sewer - NA	
07/16/20 - 08/15/20 Bill Period: 202008	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 2,686.28
Current Sewer - NA Charges	**$ 2,686.28**
TAX	$ 3.22
Total Due	**$ 47,331.32**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	08/15/20	30772	30361	411	800	328,800 kWh - UNSPECIFIED	$ 36,745.45	90.25
UNKNOWN	501 W APPLE ST	08/15/20	1005	0	1005	1	1,005 kW - UNSPECIFIED	$ 3,969.75	9.75
Total:								$ 40,715.20	100.00

Optimized Cost (Actual): $ 41,770.20 (Override): 41770.20 Usage (Actual): 328800 kWh (Override): 328800.00000 $ 0.1270/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.00 (Override): 32.00 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	08/15/20	0	3901810	-3901810	1	383,040 Gallons	$ 2,842.46	100.00
Total:								$ 2,842.46	100.00

Optimized Cost (Actual): $ 2,842.65 (Override): 2842.65 Usage (Actual): 383040 Gallons (Override): 383040.00000 $ 0.0074/Gallons

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Reports - Bill Detail Detail

Invoice # 410744588
Scan Date: 09/21/2020
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
410744588	Sep 21, 2020	Live	Oct 8, 2020
Payment Date			10/02/2020

Electric - NA	
08/16/20 - 09/15/20 Bill Period: 202009	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 34,507.75
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,697.20
TAX	$ 995.84
Current Electric - NA Charges	**$ 39,200.79**
Outdoor Light - NA	
08/16/20 - 09/15/20 Bill Period: 202009	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
08/16/20 - 09/15/20 Bill Period: 202009	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 2,362.48
Current Water - NA Charges	**$ 2,362.48**
Sewer - NA	
08/16/20 - 09/15/20 Bill Period: 202009	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 2,362.49
Current Sewer - NA Charges	**$ 2,362.49**
TAX	$ 3.00
Total Due	**$ 43,960.76**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	09/15/20	31161	30772	389	800	311,200 kWh - UNSPECIFIED	$ 34,507.75	90.32
UNKNOWN	501 W APPLE ST	09/15/20	936	0	936	1	936 kW - UNSPECIFIED	$ 3,697.20	9.68
Total:								**$ 38,204.95**	**100.00**

Optimized Cost (Actual): $ 39,203.47 (Override): 39203.47 Usage (Actual): 311200 kWh (Override): 311200.00000 $ 0.1260/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.00 (Override): 32.00 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	09/15/20	4353150	4139850	213300	1	213,300 Gallons	$ 2,362.48	100.00
Total:								**$ 2,362.48**	**100.00**

Optimized Cost (Actual): $ 2,362.64 (Override): 2362.64 Usage (Actual): 213300 Gallons (Override): 213300.00000 $ 0.0111/Gallons

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Reports - Bill Detail Detail

Invoice # 411157900
Scan Date: 10/21/2020
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
411157900	Oct 21, 2020	Live	Nov 7, 2020
Payment Date			11/02/2020

Electric - NA	
09/16/20 - 10/15/20 Bill Period: 202010	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 30,001.46
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,373.30
Current Electric - NA Charges	**$ 33,374.76**
Outdoor Light - NA	
09/16/20 - 10/15/20 Bill Period: 202010	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
09/16/20 - 10/15/20 Bill Period: 202010	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,870.07
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 0.00
Current Water - NA Charges	**$ 1,870.07**
Sewer - NA	
09/16/20 - 10/15/20 Bill Period: 202010	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,768.93
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 0.00
Current Sewer - NA Charges	**$ 1,768.93**
TAX	$ 868.01
Total Due	**$ 37,913.77**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	10/15/20	31499	31161	338	800	270,400 kWh - UNSPECIFIED	$ 30,001.46	89.89
UNKNOWN	501 W APPLE ST	10/15/20	854	0	854	1	854 kW - UNSPECIFIED	$ 3,373.30	10.11
Total:								**$ 33,374.76**	**100.00**

Optimized Cost (Actual): $ 34,156.76 (Override): 34156.76 Usage (Actual): 270400 kWh (Override): 270400.00000 $ 0.1263/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.75 (Override): 32.75 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	10/15/20	4533140	4353150	179990	1	179,990 Gallons	$ 1,870.07	616.43
UNKNOWN2	501 W APPLE ST	10/15/20	3150000	3078000	72000	1	72,000 Gallons	$ 0.00	0.00
Total:								**$ 1,870.07**	**100.00**

Optimized Cost (Actual): $ 1,913.89 (Override): 1913.89 Usage (Actual): 251990 Gallons (Override): 251990.00000 $ 0.0076/Gallons

Invoice # 411590323
Scan Date: 11/20/2020
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
411590323	Nov 20, 2020	Live	Dec 8, 2020
Payment Date			12/02/2020

Electric - NA	
10/16/20 - 11/15/20 Bill Period: 202011	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 25,430.20
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,195.55
Current Electric - NA Charges	**$ 28,625.75**
Outdoor Light - NA	
10/16/20 - 11/15/20 Bill Period: 202011	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
10/16/20 - 11/15/20 Bill Period: 202011	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,216.14
Current Water - NA Charges	**$ 1,216.14**
Sewer - NA	
10/16/20 - 11/15/20 Bill Period: 202011	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,152.02
Current Sewer - NA Charges	**$ 1,152.02**
TAX	$ 706.59
Total Due	**$ 31,732.50**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	11/15/20	31774	31499	275	800	220,000 kWh - UNSPECIFIED	$ 25,430.20	88.84
UNKNOWN	501 W APPLE ST	11/15/20	809	0	809	1	809 kW - UNSPECIFIED	$ 3,195.55	11.16
Total:								**$ 28,625.75**	**100.00**

Optimized Cost (Actual): $ 29,277.68 (Override): 29277.68 Usage (Actual): 220000 kWh (Override): 220000.00000 $ 0.1331/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.73 (Override): 32.73 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	11/15/20	4685000	4533140	151860	1	151,860 Gallons	$ 1,216.14	100.00
Total:								**$ 1,216.14**	**100.00**

Optimized Cost (Actual): $ 1,243.84 (Override): 1243.84 Usage (Actual): 151860 Gallons (Override): 151860.00000 $ 0.0082/Gallons

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SEWER - NA

HUBBELL INCORPORATED
40 Waterview Drive
Shelton, CT 06484-1000
(475) 882-4000

Tradition Energy

Reports - Bill Detail Detail

Invoice # 411992161
Scan Date: 12/21/2020
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
411992161	Dec 21, 2020	Live	Jan 7, 2021
Payment Date			01/04/2021

Electric - NA
11/16/20 - 12/15/20 Bill Period: 202012

WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 27,680.55
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,195.55
Current Electric - NA Charges	**$ 30,876.10**

Outdoor Light - NA
11/16/20 - 12/15/20 Bill Period: 202012

NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**

Water - NA
11/16/20 - 12/15/20 Bill Period: 202012

WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,116.31
Current Water - NA Charges	**$ 1,116.31**

Sewer - NA
11/16/20 - 12/15/20 Bill Period: 202012

WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,116.31
Current Sewer - NA Charges	**$ 1,116.31**

TAX	$ 739.84
TAX	$ 2.59
Total Due	**$ 33,883.15**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	12/15/20	32063	31774	289	800	231,200 kWh - UNSPECIFIED	$ 27,680.55	89.65
UNKNOWN	501 W APPLE ST	12/15/20	809	0	809	1	809 kW - UNSPECIFIED	$ 3,195.55	10.35
Total:								$ 30,876.10	100.00

Optimized Cost (Actual): $ 31,567.60 (Override): 31567.60 Usage (Actual): 231200 kWh (Override): 231200.00000 $ 0.1365/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.72 (Override): 32.72 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	12/15/20	4826460	4685000	141460	1	141,460 Gallons	$ 1,116.31	100.00
Total:								$ 1,116.31	100.00

Optimized Cost (Actual): $ 1,141.32 (Override): 1141.32 Usage (Actual): 141460 Gallons (Override): 141460.00000 $ 0.0081/Gallons

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HUBBELL INCORPORATED
40 Waterview Drive
Shelton, CT 06484-1000
(475) 882-4000

Tradition Energy

General Dashboard Reports Analysis Trends Weather Accounting Site ENERGY STAR Options Update myFavorites

Reports - Bill Detail Detail

Invoice # 412388126
Scan Date: 01/20/2021
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
412388126	Jan 20, 2021	Live	Feb 7, 2021
Payment Date			02/01/2021

Electric - NA	
12/16/20 - 01/15/21 Bill Period: 202101	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 22,163.19
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,223.20
Current Electric - NA Charges	**$ 25,386.39**
Outdoor Light - NA	
12/16/20 - 01/15/21 Bill Period: 202101	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
12/16/20 - 01/15/21 Bill Period: 202101	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 1,004.45
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 0.00
Current Water - NA Charges	**$ 1,004.45**
Sewer - NA	
12/16/20 - 01/15/21 Bill Period: 202101	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 952.31
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 0.00
Current Sewer - NA Charges	**$ 952.31**
TAX	$ 601.65
Total Due	**$ 27,976.80**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	01/15/21	32297	32063	234	800	187,200 kWh - UNSPECIFIED	$ 22,163.19	87.30
UNKNOWN	501 W APPLE ST	01/15/21	816	0	816	1	816 kW - UNSPECIFIED	$ 3,223.20	12.70
Total:								**$ 25,386.39**	**100.00**

Optimized Cost (Actual): $ 25,944.33 (Override): 25944.33 Usage (Actual): 187200 kWh (Override): 187200.00000 $ 0.1386/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.70 (Override): 32.70 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	01/15/21	4950790	4826460	124330	1	124,330 Gallons	$ 1,004.45	618.50
UNKNOWN2	501 W APPLE ST	01/15/21	3186000	3175000	11000	1	11,000 Gallons	$ 0.00	0.00
Total:								**$ 1,004.45**	**100.00**

Optimized Cost (Actual): $ 1,026.53 (Override): 1026.53 Usage (Actual): 135330 Gallons (Override): 135330.00000 $ 0.0076/Gallons

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40 Waterview Drive
Shelton, CT 06484-1000
(475) 882-4000

Tradition Energy

General Dashboard Reports Analysis Trends Weather Accounting Site ENERGY STAR Options Update myFavorites

Reports - Bill Detail Detail

Invoice # 412818385
Scan Date: 02/19/2021
VILLAGE OF FREEBURG
Account: 0033038000

Hubbell
701 MILLENNIUM BLVD
GREENVILLE, SC 29607

Image Notes GL DIST GO BACK

INVOICE #	SCAN DATE	STATUS	DUE DATE
412818385	Feb 19, 2021	Live	Mar 7, 2021

Electric - NA	
01/16/21 - 02/15/21 Bill Period: 202102	
WIEGMANN - FREEBURG (7301C730) - kWh - UNSPECIFIED	$ 26,683.32
WIEGMANN - FREEBURG (7301C730) - kW - UNSPECIFIED	$ 3,152.10
Current Electric - NA Charges	**$ 29,835.42**
Outdoor Light - NA	
01/16/21 - 02/15/21 Bill Period: 202102	
NIGHT LIGHT SERVICE	$ 32.00
Current Outdoor Light - NA Charges	**$ 32.00**
Water - NA	
01/16/21 - 02/15/21 Bill Period: 202102	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 964.90
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 0.00
Current Water - NA Charges	**$ 964.90**
Sewer - NA	
01/16/21 - 02/15/21 Bill Period: 202102	
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 915.00
WIEGMANN - FREEBURG (7301C730) - Gallons	$ 0.00
Current Sewer - NA Charges	**$ 915.00**
TAX	$ 744.95
Total Due	**$ 32,492.27**

WIEGMANN - FREEBURG (7301C730)

ELECTRIC - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN	501 W APPLE ST	02/15/21	32587	32297	290	800	232,000 kWh - UNSPECIFIED	$ 26,683.32	89.44
UNKNOWN	501 W APPLE ST	02/15/21	798	0	798	1	798 kW - UNSPECIFIED	$ 3,152.10	10.56
Total:								**$ 29,835.42**	**100.00**

Optimized Cost (Actual): $ 30,535.51 (Override): 30535.51 Usage (Actual): 232000 kWh (Override): 232000.00000 $ 0.1316/kWh

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OUTDOOR LIGHT - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %

Optimized Cost (Actual): $ 32.75 (Override): 32.75 Usage (Actual): 0 kWh (Override): 0.00000 $ 0.0000/kWh

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WATER - NA

METER #	LOCATION	READING DATE	CURRENT READING	PREVIOUS READING	DIFFERENCE	METER MULTIPLIER	ACTUAL UNIT OF USAGE MEASURE	COST	COST %
UNKNOWN1	501 W APPLE ST	02/15/21	5070790	4950790	120000	1	120,000 Gallons	$ 964.90	618.53
UNKNOWN2	501 W APPLE ST	02/15/21	3196000	3186000	10000	1	10,000 Gallons	$ 0.00	0.00
Total:								**$ 964.90**	**100.00**

Optimized Cost (Actual): $ 987.54 (Override): 987.54 Usage (Actual): 130000 Gallons (Override): 130000.00000 $ 0.0076/Gallons

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MSDS Sheets

MATERIAL SAFETY DATA SHEET

ZINCGRIP® Steel

DATE OF PREPARATION: August 1, 2002
Revised October 7,2005, Revision 2

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT/CHEMICAL NAME — **ZINCGRIP® Steel**

MANUFACTURER'S NAME & TELEPHONE # — **AK STEEL CORPORATION**
513 425-5000 (Information)
800 331-5050 (Customer Service)
513 425-3815 (Health & Safety)

ADDRESS — **703 CURTIS STREET**
MIDDLETOWN, OHIO 45043-0001

SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

Components	CASRN[1]	% Weight	OSHA PEL[2]	ACGIH TLV[3]
Base Metal				
Iron	7439-89-6 as Fe	>95.0	10 mg/m^3 - Iron Oxide (Fe_2O_3) Dust and Fume (as Fe)	5 mg/m^3 –Iron Oxide (Fe_2O_3) Dust & Fume as Fe
Alloying Metals				
Aluminum	7429-90-5 as Al	<0.10	15 mg/m^3 -Total Dust 5 mg/m^3 - Respirable[4] as Al	10 mg/m^3 -Metal Dust 5 mg/m^3 -Welding Fume as Al
Boron	7440-42-8 as B	<0.01	15 mg/m^3 -Total Dust as Boron Trioxide (B_20_3)	10 mg/m^3 Total Dust as Boron Oxide (B_20_3)
Calcium	7440-70-2 as Ca	<0.10	15 mg/m^3 - Calcium Oxide (CaO)	2 mg/m^3 - Calcium Oxide (CaO)
Carbon	7440-44-0 as C	<0.30	15 mg/m^3 –Total Dust 5 mg/m^3 – Respirable[4,5]	10 mg/m^3 –Total Dust 3 mg/m^3 – Respirable[4,5]
Chromium	7440-47-3 as Cr	<0.15	1 mg/m^3 – Chromium Metal	0.5 mg/m^3 – Cr Metal & Cr III Compounds
Columbium (Niobium)	7440-03-1 as Nb	<0.10	15 mg/m^3 –Total Dust 5 mg/m^3 – Respirable[4,5]	15 mg/m^3 –Total Dust 3 mg/m^3 – Respirable[4,5]
Copper	7440-50-8 as Cu	<0.20	0.1 mg/m^3 – Fume as CuO 1 mg/m^3 – Cu Dusts & Mists	0.2 mg/m^3 – Fume 1 mg/m^3 – Cu Dusts & Mists
Manganese	7439-96-5 as Mn	<2.0	Ceiling 5 mg/m^3 – Metal Fume & Mn Compounds	0.2 mg/m^3 Metal Fume and Mn Compounds
Molybdenum	7439-98-7 as Mo	<0.30	15 mg/m^3 –Total Dust 5 mg/m^3 – Respirable[4,5]	10 mg/m^3 – Dust 2 mg/m^3 – Respirable[4,5]
Nickel	7440-02-0 as Ni	<0.20	1 mg/m^3 – Ni & Insoluble Compounds	1.5 mg/m^3 – as Ni 0.2 mg/m^3 – Insoluble Compounds
Phosphorus	7723-14-0 as P	<0.15	1 mg/m^3 as Phosphoric Acid (H_3P0_4)	1 mg/m^3 as Phosphoric Acid
Silicon	7440-21-3 as Si	<1.0	15 mg/m^3 –Total Dust 5 mg/m^3 – Respirable[4,5]	10 mg/m^3 –Total Dust 3 mg/m^3 – Respirable[4,5]
Sulfur	7704-34-9 as S	<0.05	15 mg/m^3 –Total Dust 5 mg/m^3 – Respirable[4,5]	10 mg/m^3 –Total Dust 3 mg/m^3 – Respirable[4,5]
Titanium	7440-32-6 as Ti	<0.10	15 mg/m^3 –Total Dust as TiO_2	10 mg/m^3 –Total Dust as TiO_2
Vanadium	7440-62-2 as V	<0.10	0.5 mg/m^3 – Respirable as V_2O_5[4,5] Ceiling 0.1 mg/m^3 – Fume as V_2O_5	0.05 mg/m^3 – Respirable as V_2O_5[4,5]
Metallic Coating[6]				
Zinc	7440-66-6 as Zn	100.0	15 mg/m^3 –Total Dust as ZnO 5 mg/m^3 – Respirable[4,5] & Fume, ZnO	2 mg/m^3 – Respirable[4,5] as ZnO STEL 10 mg/m^3 – Respirable[4,5]
Coating				
None				

Notes:

1. CASRN: Chemical Abstract Service Registry Number
2. OSHA PEL: OSHA 8-hour Permissible Exposure Limit as listed in 29 CFR 1910.1000 Table Z
3. ACGIH TLV: American Conference of Government Industrial Hygienist 8-hour Threshold Limit Valves as listed in *2005 Threshold Limit Valves for Chemical Substances and Physical Agents.*
4. Respirable: Particulates as measured with a cyclone sampling device that collects small particulate matter below a certain cut size, as defined in *NIOSH Manual of Analytical Methods*.
5. As particles not otherwise regulated.
6. % Weight for individual components are for the Metallic Coating, not the base metal and Coating,
7. ZINCGRIP® Steel Quality Extras include the following:
   - Commercial Steel Type B
   - Special Killed
   - Extra Deep Drawing Steel
   - Extra Deep Drawing Steel Plus
   - Dent Resistant
   - Structural Steel
   - High Strength Low Alloy Steel
8. Steel coils may be coated with a light coating oil to prevent corrosion.

SECTION 3 – HEALTH HAZARD DATA/EXPOSURE

Summary of Health Hazards

ZINCGRIP® Steel in its natural state does not pose an immediate health or fire hazard. However welding or heating this material will cause inorganic and organic fumes that are irritating, potentially corrosive and can cause respiratory distress. Mechanical operations such as sawing, grinding, drilling or similar physical operations may cause potentially hazardous airborne particulates which can injure the eyes and skin. These particulates when breathed may cause irritating and corrosive effects to the mouth, nose and respiratory tract.

If it is necessary to weld, heat, saw, grind, drill or any physical operation that will generate a fume or airborne particulates, an exposure assessment should be performed by a qualified industrial hygienist to determine the required personal protection equipment (PPE).

Primary Route(s) of Entry: Inhalation, ingestion, eyes or skin contact. Steel products in the natural state do not present an inhalation, ingestion, eye or skin contact hazard. However operations such as burning, welding, sawing, drilling or grinding may constitute hazards if exposures exceed limits listed in Section 2.

ACUTE EFFECTS OF EXPOSURE

Inhalation: Exposure to high concentrations of metallic fumes and dusts or organic particulates may result in irritation and/or sensitization of the lungs and other mucous membranes. Excessive inhalation of high concentrations of fumes generated from the heating of metals, e.g. zinc, copper and manganese, can produce an acute reaction known as “metal fume fever”

Skin Contact: Exposure to metal dusts may cause irritation or sensitization, possibly leading to dermatitis.

Eye Contact: Impact of metal particles on the eye may cause temporary damage to the eye or possible scars to the retina, thus producing long damage. Metal particles may cause rust staining of the eye unless removed. Metallic or organic fumes will cause irritation of the eyes.

Ingestion: Ingestion of harmful amounts is highly unlikely due to its solid insoluble form. Ingestion of dusts may cause nausea and/or vomiting. Heart failure.

MATERIAL CONDITIONS KNOWN TO BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL: Persons with impaired lungs may be at increased risk from overexposure to fumes generated by heating or welding this product.

CHRONIC EFFECTS OF OVEREXPOSURE

Excessive and Repeated Exposures to Alloy Fume or Dust May Cause:

- Allergic sensitization – dermatitis and asthma
- Lung inflammation and damage – pneumonitis, pneumonia, bronchitis, siderosis (benign lung disease caused by inhaling iron particles) diffuse pulmonary fibrosis.
- Nasal perforation and nasal cavity damage
- Eye inflammation, Eye stain from imbedded rust particles
- Central nervous system damage, possibly permanent (manganese)
- Kidney damage (copper, manganese, molybdenum)
- Liver damage (copper, molybdenum)
- Gout - Inflammation of the joints (molybdenum)
- See Section 11 for detailed toxicity information on individual components.

Carcinogenicity:

- The carcinogenicity of this product as a whole has not been tested.
- Individual components nickel, chromium and some compounds of these elemental metals have been associated with carcinogenicity by NTP and IARC.
- IARC lists welding fumes as 2B (Possibly carcinogenic to humans)
- No component greater than 0.1% by weight in this alloy is regulated by OSHA within 29 CFR 1910.1000, Subpart Z, as a carcinogen.

Signs and Symptoms of Overexposure:

- Redness, swelling, itching, and/or irritation of skin and eyes;
- Respiratory difficulties – coughing, wheezing, shortness of breath, dyspnea, decreased pulmonary function;
- Metal Fume Fever – symptoms consist of chills and fever (very similar and easily confused with flu symptoms), a metallic taste in the mouth, dryness and irritation of the throat, and tightness of the chest. The symptoms occur a few hours after excessive exposures and usually last from 12 to 48 hours.

SECTION 4 – EMERGENCY & FIRST-AID PROCEDURES

In case of overexposure to metal fumes and/or dusts

Inhalation: Immediately move the people from the contaminated area to fresh air. Give artificial respiration if breathing has stopped; or oxygen if necessary. Seek medical attention. Metal fume fever may be treated by bed rest, and administering a pain and fever reducing medication.
Skin: Remove contaminated clothing immediately. Flush contaminated skin with large quantities of water for fifteen minutes. Seek medical attention.
Eyes: In case of contact, immediately wash eyes with large amounts of water for fifteen minutes, occasionally lifting the lower and upper lids. Seek medical attention.
Ingestion: If conscious, immediately give person large quantities of water. Do not induce vomiting. Seek medical attention.

SECTION 5 – FIRE AND EXPLOSION DATA

The product is: Non-Flammable solid
Auto-ignition Temperature (°F): Not Applicable
Flash Point:(°F): Not Applicable
Flammability Limits (LEL and UEL): Not Applicable
Products of Combustion: Steel is not combustible. Steel might have a light surface coating of oil and this coating may produce carbon decomposition products, which are irritating to eyes and throat. Use water to cool coils.
Fire Hazard in the presence of various substances: Oil coated steel will smolder and smoke, but will not burn.
Explosion hazard in the presence of various substances: Material will not burn. Not Applicable
Fire fighting media and instructions: Use water to cool coils. Use appropriate fire extinguishers for surrounding materials. Do not release run off to sewers or waterways
Fire fighting equipment: Wear self-contained breathing apparatus firefighters protective clothing for surrounding fire areas to protect against the generation of metal dust and fumes which are hazardous.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill / Leak Procedures: Not applicable to steel products in solid state. For spills of finely dived particles, clean-up personnel should be protected against contact with skin and eyes. Avoid inhalation of dust. Finely divided material should be cleaned up by vacuuming or wet sweeping methods to prevent further dispersal of dust. Do not use compressed air. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations.

Regulatory Requirements: Release of this material in a solid form does not require notification of U.S EPA.

SECTION 7 – HANDLING AND STORAGE

Handling Precautions: Avoid the generation of large quantities of metal dusts and airborne particulates. Practice good housekeeping. Avoid breathing metal fumes and dusts.

Special Handling: Do not store steel products adjacent to acids, corrosive materials, materials that generate corrosive gases or incompatible materials.

SECTION 8– EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Ventilation, as described in the current *Industrial Ventilation Manual* produced by the American Conference of Governmental Industrial Hygienists, shall be provided in areas where exposures are above the permissible exposure limits or threshold limit values specified by OSHA or other local, state, and federal regulations.

Respiratory Protection: A respirator should be worn whenever airborne concentrations exceed the threshold limit value (TLV) or other recommended limits, in accordance with the OSHA Respiratory Protection Standard (29 CFR 1910.134). A qualified industrial hygienist should be consulted to perform exposure assessment.

Protective Clothing: Use appropriate protective clothing and safety equipment when handling this product. Although not recommended, if heating or welding is required, welder's aprons and gloves, and eye protection should be worn along with safety equipment. An exposure assessment should be conducted by a qualified industrial hygienist to determine proper respiratory protection.

Protective gloves should be worn whenever handling steel scrap or touching the steel coil. An example of such a glove is a Leather Glove with Kevlar Liner.

Eye Protection: Safety glasses and/or face shield (8" minimum) should be worn whenever grinding, cutting or drilling this product. Eyewash/Deluge stations should be located within 10 seconds of work place.

SECTION 9 – PHYSICAL/CHEMICAL CHARACTERISTICS

Evaporation Rate (Ethyl Ether=1)	Not Applicable
Melting Point (°F)	2795 °F as Fe, 787°F as Zinc
pH Information	Not Applicable
Percent Volatile by Volume	Not Applicable
Solubility in Water	Not Applicable
Specific Gravity (H_2O=1)	> 1.0
Vapor Pressure (mm Hg@25.0°C)	Not Applicable
Vapor Density ((Air=1)	Not Applicable
Appearance and Odor	Gray Metallic Color with No Odor

SECTION 10 - REACTIVITY DATA

Stability: ZINCGRIP® Steel is stable under normal storage and handling conditions.
Polymerization: Hazardous polymerization will not occur.
Chemical Incompatibilities: Will react with strong acids to form hydrogen gas. Iron Oxide dusts will in react with strong oxidants.
Conditions to Avoid: Storage with strong acids or oxidants.
Hazardous Decomposition Products: Thermal oxidative decomposition of steel coatings containing zinc can produce fumes containing oxides of zinc. Breathing zinc oxide fumes may produce respiratory distress and "metal fume fever".

SECTION 11 – TOXICOLOGICAL INFORMATION

ZINCGRIP® Steel is not toxic in the solid form. The toxicity occurs when processes generate dust and fumes of individual components.

Iron: Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in development of a benign pneumoconiosis, called siderosis, which is observable as an x-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of iron oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. LD_{50} (oral, rat) – 30 gm/kg. Iron Oxide, NIOSH-RTECS: N07400000, fume NIOSH-RTECS: N07525000

Aluminum: Nuisance dust. May cause mild irritation to eyes and mucous membranes. LD_{50}–no data. NIOSH-RTECS: BD0330000

Boron: Boron oxide dusts and fumes may cause upper respiratory tract and eye irritation, dryness of mouth, nose or throat, and sore throat and productive cough. LD_{50} (oral, mouse) – 3163 mg/kg. Boron Oxide: NIOSH-RTECS: ED7900000

Calcium: Concentration of calcium in steel is low but if converted to dust and prolonged exposure occurs inflammation of respiratory tract can occur. Skin irritant. Avoid eye contact. Eye-rabbit: 10 mg severe: calcium hydroxide. LD_{50} (oral-rat) – 7340 mg/Kg. Calcium Oxide, NIOSH-RTECS: EW3100000

Carbon: Nuisance dust. May cause mild irritation to eyes and mucous membranes. LD_{50} – no data

Chromium: Chromium metal has low toxicity in alloyed solid steel products. Chromium metal and trivalent chromium are listed by IARC as group 3 (not classifiable as to carcinogenicity in humans). Hexavalent chromium is classified by IARC as a Group 1 (carcinogenic to humans) and by ACIGH as A1 (confirmed human carcinogen). Hexavalent chromium compounds can act as a strong irritant of skin, eyes, and mucous membranes. LD_{Lo} (oral-human) - 71 mg/Kg. NIOSH-RTECS: GB4200000

Columbium (Niobium): No data on human intoxication. There is no evidence of a human health hazard. Treat as a nuisance dust. LD_{50} – no data. NIOSH-RTECS: QT9900000

Copper: Copper fumes can lead to "metal fume fever" with symptoms of thirst, cough, headache, sweat, pain in limbs and fever. Complete recovery usually occurs within 1 to 2 days of removal from exposure. Copper fumes can also nausea, gastric pain, and diarrhea. LD_{Lo} (oral-human) - 120 μg/Kg (nausea or vomiting). NIOSH-RTECS: GL53250000

Manganese: Chronic manganese poisoning may result from prolonged inhalation of manganese dust and fumes. The central nervous system is the chief site of damage from the disease, which may result in permanent disability. Symptoms include languor, sleepiness, weakness, emotional disturbances, spastic gait, recurring leg cramps, and paralysis. A high incidence of pneumonia and other upper respiratory infections have been found in workers exposed to dust or fume of manganese compounds. Manganese compounds are experimental equivocal tumorigenic agents. LD_{50} (oral, rat) – 30 mg/kg; TC_{Lo} – 2300 μg/m^3 (man). NIOSH-RTECS: OO9275000

Moybdenum: Inhalation of high concentrations can cause "hard metal lung" disease' and pneumoconiosis in workers exposed to high concentrations for extended periods of time. Symptoms of over exposure are anemia and diarrhea. The human body in various metabolic processes uses molybdenum. LD_{50} – no data. NIOSH-RTECS: QA4680000

Nickel: Can cause allergic dermatitis on contact, pulmonary asthma, and conjunctivitis in high concentrations or chronic exposure to soluble nickel compounds. Metallic nickel is classified by IARC as a Group 2B (possibly carcinogenic to humans) , by NTP (reasonably anticipated to be a human carcinogen), and by ACGIH as group A5 (not suspected as a human carcinogen). Nickel compounds are classified by IARC as Group 1 (carcinogenic to humans), by NTP as (known to be carcinogenic to humans, and by ACGIH as Group A1 (confirmed carcinogen in humans). TD_{Lo} (oral-rat) – 200mg/Kg (depressed activity). NIOSH-RTECS: QR5950000

Phosphorus: Dust of the phosphorous oxides and ferrophosphorous may cause respiratory irritation. LD_{50} – no data Phosphoric Acid, NIOSH-RTECS: TB6300000

Silicon: Nuisance dust. May cause mild irritation to eyes and mucous membranes. LD_{50} (oral, rat) – 3160 mg/kg. NIOSH-RTECS: VW0400000

Titanium: Nuisance dust. May cause mild irritation to eyes and mucous membranes. TD_{Lo} (oral-rat) – 60 gm/Kg (hypermotility - diarrhea). NIOSH-RTECS: XR2275000

Vanadium: Vanadium as vanadium pentoxide causes bleeding of the nose, asthma, cough, dyspnea, and conjunctivitis. LD_{50} – no data. Vanadium Pentoxide, RTECS: YW2450000

Zinc: The primary toxicological effect due is the inhalation of zinc fumes, formed when heating, burning or welding a zinc coated surface, such galvanizing. Overexposure to zinc fumes will cause metal fume fever. Attacks usually begin after 4 to 8 hours after exposure and consist of chills and fever, profuse sweating and weakness. Attacks usually last only 24 to 48 hours. Any person who suspects they are experiencing metal fume fever should seek medical assistance. TC_{Lo} (inhalation-human) – 600 mg/m^3 (cough-dyspnea). Zinc Oxide, NIOSH-RTECS: ZH4810000

Coating Oils: The oil will cause eye irritation. Repeated or prolonged skin contact will dry the skin and lead to dermatitis. LD_{50} (oral-mouse) – 22 gm/Kg. NIOSH-RTECS: PY8030000

SECTION 12 – ECOLOGICAL INFORMATION

ZINCGRIP® Steel is coated with a protective layer and poses no ecological hazard unless the metal is processed to generate dust, fumes, and soluble compounds of the individual components.

Aquatic Toxicity
24-hour, Ictalurus punctarus (channel catfish), LC_{50} >0.5% as Iron
96 hr, Pimpehales promelas, fathead minnow, LC_{50} 10-100 mg/L as Chromium
4 days post hatch, Omcorhynchus mykiss, Rainbow trout, LC_{50} 60-90 μg/L as Nickel
3-hour and 9 hour, Bufo bufo japonicus (Toad), LC_{50} = 3.2 mg/L as Zinc ion
Terrestrial Toxicity
8 weeks, Eisenia Fetida,earthworm, NOEC 26,000 mg/Kg as Zn
8-day ,Colinus virginianus (Northern Bobwhite), LC_{50} > 5000ppm as Zinc Oxide
8.5 weeks, 0-survival Porcellio scaber (woodlice) exposed to soil as Zinc Oxide

SECTION 13 – DISPOSAL INFORMATION

Disposal: Contact supplier or licensed contractor for detailed recommendations. Follow applicable Federal, state and local regulations

SECTION 14 – TRANSPORT INFORMATION

DOT Classification: Not listed as hazardous under 49 CFR 172.101

Special Conditions for Transport: Not Listed as hazardous substance under 49 CFR 172.101

Identification Number: Not Required

Hazardous Material Proper Shipping Name: Not Listed as hazardous substance under 49 CRF 172.10

SECTION 15 – REGULATORY INFORMATION

OSHA Regulations (29 CFR)

Air Contaminant (29 CFR 1910.1000, Table Z): Steel products are not listed as air contaminants. However individual components are listed.

EPA Regulations (40 CFR)

Resource Conservation and Recovery Act (RCRA) - Hazardous Waste: Steel products or scrap are not regulated as a solid waste or hazardous waste under this regulation. Dusts or fumes subject to TCLP toxicity characteristic test may indicate this material is to be classified as a hazardous waste (40CRF261.24).

Comprehensive Emergency Response Compensation and Liability Act (CERCLA) – Superfund: Steel products or scrap are not listed as hazardous substances. Metals in solid form greater than 100 micrometers (0.004 Inches) are not required to be reported under CERCLA. [Individual Reportable Quantities, RQ: Chromium (RQ = 5000 lb.), Copper (RQ = 5000 lb.), Nickel (RQ = 100 lb.), Copper (RQ = 5000 lb.), Silver (RQ = 1000 lb.), Zinc (RQ = 1000 lb.)].

SARA (Superfund Amendments and Reauthorization Act) Section 311/312 List the hazard class(es) of material : Steel products are not required to be listed. Metals (i.e. chromium, copper, nickel, silver, and zinc) require no reporting of releases of the solid form if the mean diameter is greater than 100 micrometers (0.004 inches).

SARA (Superfund Amendments and Reauthorization Act) Section 313 Toxic Chemicals: Steel products are not subject to reporting requirements.

State Regulations

Steel Products are not listed in state regulations. However, the individual components are listed in various state regulations.

Canada WHMIS (Workplace Hazardous Material Information System)

The material upon further processing has a WHMIS Classification of D-2

SECTION 16 – OTHER INFORMATION

NFPA 704M RATING: Health = 1, Flammability = 0, Reactivity = 0
NFPA Hazard Rating System: Least = 0, Slight =1, Moderate = 2, High =3, Extreme = 4

Revisions: Ecological Section added
Sections rearranged along the ANSI Z400.1-2003 guidelines

References:
ACIGH TLV's. American Industrial Hygiene Association, 2005
American National Standard for Hazardous Chemicals – MSDS, Z400.1-2003
American National Standard for Hazardous Chemicals – Precautionary Labeling, Z129.1-2005 Proposed
ATSDR- Agency for Toxic Substances and Disease Registry
EPA- IRIS Database for Risk Assessment
EPA – ECOTOX- ECOTOXiology database
EPA- National Primary Drinking Water Standards
IARC- International Agency on Cancer Research
NTP- National Toxicology Program
NIOSH Pocket Guide to Chemical Hazards (NPG), 2005
OSHA – Occupational Safety and Health Act:
RTECS- The Registry of Toxic Effects of Chemical Substances

Safety Data Sheet
Argon

Section 1: Product and Company Identification

Cee Kay Supply, Inc
5835 Manchester Avenue
Saint Louis, MO 63110
www.CeeKay.com
(314) 644-3500

Product Code: Argon

Section 2: Hazards Identification

Warning

Hazard Classification:
Gases Under Pressure

Hazard Statements:
Contains gas under pressure; may explode if heated

Precautionary Statements

Storage:
Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
7440-37-1

Chemical Substance	Chemical Family	Trade Names
ARGON, COMPRESSED	Inorganic gases	ARGON; UN 1006; AR

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Not applicable route of exposure	Flush eyes with plenty of water.	Not applicable route of exposure	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Non-flammable gas	Not applicable	▪ N/A ▪ N/A

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.	None known.	Stop leak if possible without personal risk.

Methods for Cleanup	Other Information
Leaks may be detected by a soapy-water solution.	

Section 7: Handling and Storage

Handling	Storage
Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.	Avoid using in confined spaces.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
ARGON, COMPRESSED: ARGON: ACGIH (simple asphyxiant)

Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Eye protection not required, but recommended.	Protective clothing is not required.	N/A

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Colorless	Colorless	N/A	Gas	Odorless	Tasteless

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not flammable			Nonflammable	Nonflammable	Nonflammable

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-303 F (-186 C)	-308 F (-189 C)	500 mmHg @ -190 C	1.38 (Air=1)	Not applicable	3.36% @ 20 C	Not applicable	Not available	Not applicable	0.0225 cP @ 25 C

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
39.948	AR	1.784 g/L @ 0 C	Not available	100%	Not applicable	Soluble: Organic solvents

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	No data available.

Hazardous Decomposition Products	Possibility of Hazardous Reactions
No data available.	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
Not established	Not established	Nausea, vomiting, difficulty breathing, irregular heartbeat, headache, dizziness, disorientation, mood swings, tingling sensation, loss of coordination, suffocation, convulsions, unconsciousness, coma

Eye Irritation	Skin Irritation	Sensitization
No information on significant adverse effects	No information on significant adverse effects	

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not established	Not established	Not established	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Not available Invertibrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Argon, compressed	UN1006	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Argon, compressed	UN1006	2.2	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	No	No	Yes

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65
Not regulated.

Canadian Regulations

WHMIS Classification
A

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Listed on inventory.

Section 16: Other Information

NFPA Rating
HEALTH=0 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Since 1950… it's all we do.
PO Box 5005 Naperville, IL 60567| 31W238 91st St. Naperville, IL 60564
Battery Builders, LLC. T: (630) 851-5800 | F: (630) 851-1040 | www.bbibattery.com

Safety Data Sheet

REVISION DATE: 7/26/18

This SDS should be attached or kept with the respective product with which it is associated.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Lead Acid Battery, Wet **Synonyms:** Industrial Battery, Traction Battery	**Product Use**: Electric Storage Battery **Manufacturer/Supplier:** Battery Builders, LLC. **Address:** 31W 238 91ST Street, Naperville, IL 60564
General Information Number: 630-851-5800 **Transportation Emergency Number:** 800-535-5053	**CHEMICAL EMERGENCY NUMBER:** INFOTRAC 800-535-5053

SECTION 2: HAZARD(S) IDENTIFICATION

Health	Category	Environmental	Physical
Acute Toxicity (Oral/Dermal/Inhalation) Skin Corrosion/Irritation Eye Damage Reproductive Carcinogenicity (lead) Carcinogenicity (arsenic) Carcinogenicity (acid mist) Specific Target Organ Toxicity (repeated exposure)	4 1A 1 1A 1B 1A 1A 2	Aquatic Chronic 1 Aquatic Acute 1	Explosive Chemical, Division 1.3

GHS Label:

Health	Environmental	Physical
		
Hazard Statements: **DANGER!** Causes severe skin burns and eye damage. Causes serious eye damage. May damage fertility or the unborn child if ingested or inhaled. May cause cancer if ingested or inhaled.	***Precautionary Statements:*** Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing, eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.	

Health	Environmental	Physical
Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure. May form explosive air/gas mixture during charging. Extremely flammable gas (hydrogen). Explosive, fire, blast or projection hazard.	Causes skin irritation, serious eye damage. Contact with internal components may cause irritation or severe burns. Avoid contact with internal acid. Irritating to eyes, respiratory system, and skin.	

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS (Chemical/Common Names):	CAS No.:	% by Wt:
Lead and Lead Compounds (inorganic)	7439-92-1	**67**
Electrolyte (H2SO4/H2O)	7664-93-9	**21**
Antimony	7440-36-0	**1**
Arsenic	7440-38-2	**<0.01**
Calcium	7440-70-2	**<0.01**
Tin	7440-31-5	**<0.01**
Polypropylene	9003-07-0	**<1**

Ingredients listed are representative of a typical industrial battery.

SECTION 4: FIRST-AID MEASURES

INHALATION:
Sulfuric Acid: Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.
Lead: Remove from exposure, gargle, wash nose and lips; consult physician.

INGESTION:
Sulfuric Acid: Give large quantities of water; Do NOT induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death; consult physician.
Lead: Consult physician immediately.

SKIN:
Sulfuric Acid: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before reuse. Discard contaminated shoes.
Lead: Wash immediately with soap and water.

EYES:
Sulfuric Acid and Lead: Flush immediately with large amounts of water for at least 15 minutes while lifting lids; Seek immediate medical attention if eyes have been exposed directly to acid.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: Not Applicable
Flammable Limits: LEL = 4.1% (Hydrogen Gas in air); UEL = 74.2%
Extinguishing media: CO2; foam; dry chemical. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use appropriate media for surrounding fire.

Fire Fighting Procedures:
Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application and wear acid-resistant clothing, gloves, face and eye protection. If batteries are on charge, shut off power to the charging equipment, but note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down.

Hazardous Combustion Products:
Highly flammable hydrogen gas is generated during charging and operation of batteries. If ignited by burning cigarette, naked flame or spark, may cause battery explosion with dispersion of casing fragments and corrosive liquid electrolyte. Carefully follow manufacturer's instructions for installation and service. Keep away all sources of gas ignition and do not allow metallic articles to simultaneously contact the negative and positive terminals of a battery. Follow manufacturer's instructions for installation and service.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Stop flow of material, contain/absorb small spills with dry sand, earth or vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of un-neutralized acid to sewer. Acid must be managed in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

SECTION 7: HANDLING AND STORAGE

Handling:
Unless involved in recycling operations, do not breach the casing or empty the contents of the battery. Handle carefully and avoid tipping, which may allow electrolyte leakage. There may be increasing risk of electric shock from strings of connected batteries. Keep containers tightly closed when not in use. If battery case is broken, avoid contact with internal components. Keep vent caps on and cover terminals to prevent short circuits. Place cardboard between layers of stacked automotive batteries to avoid damage and short circuits. Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water. Use banding or stretch wrap to secure items for shipping.

Storage:
Store batteries under roof in cool, dry, well-ventilated areas separated from incompatible materials and from activities that may create flames, spark, or heat. Store on smooth, impervious surfaces provided with measures

for liquid containment in the event of electrolyte spills. Keep away from metallic objects that could bridge the terminals on a battery and create a dangerous short-circuit.

Charging:
There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits (mg/m^3) **Note: N.E. = Not Established**

INGREDIENTS (Chemical/Common Names):	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Lead and Lead Compounds (inorganic)	0.05	0.05	0.05	0.05	0.05	0.15 (b)
Electrolyte (H_2SO_4/H_2O)	1	0.2	1	1	0.2	0.05 (c)
Antimony	0.5	0.5	0.5	0.5	0.5	0.5 (b,e)
Arsenic	0.01	0.01	0.01			
Cadmium	0.005	0.002 (b)	0.0025 Ca(d)	0.025	0.01	0.01 (f)
Tin	2	2	2			
Polypropylene	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.

NOTES:
***Ingredients listed are representative of a typical industrial battery. Consult individual manufacturer's SDS for information relating to a specific battery.**
(a) As dusts/mists **(b)**As inhalable aerosol **(c)**Thoracic fraction **(d)**Potential occupational carcinogen
(e) Based on OEL's of Austria, Belgium, Denmark, France, Netherlands, Switzerland, & U.K.
(f) Based on OEL of Belgium **(g)**Based on OEL of Netherlands

Engineering Controls (Ventilation):
Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant. Handle batteries cautiously, do not tip to avoid spills. Make certain vent caps are on securely. If battery case is damaged, avoid bodily contact with internal components. Wear protective clothing, eye and face protection, when filling, charging or handling batteries. Do not allow metallic materials to simultaneously contact both the positive and negative terminals of the batteries. Charge batteries in areas with adequate ventilation. General dilution ventilation is acceptable.

Respiratory Protection (NIOSH/MSHA approved):
None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.

Skin Protection:
If battery case is damaged, use rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing and boots.

Eye Protection:
If battery case is damaged, use chemical goggles or face shield.

Other Protection:
In areas where water and sulfuric acid solutions are handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply. Chemically impervious apron and face shield recommended when adding water or electrolyte to batteries. Wash Hands after handling.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Properties Listed Below are for Electrolyte:			
Boiling Point:	203 - 240° F	Specific Gravity (H2O = 1):	1.215 to 1.350
Melting Point:	N/A	Vapor Pressure (mm Hg):	10
Solubility in Water:	100%	Vapor Density (AIR = 1):	Greater than 1
Evaporation Rate: (Butyl Acetate = 1)	Less than 1	% Volatile by Weight:	N/A
pH:	~1 to 2	Flash Point:	Below room temperature (as hydrogen gas)
LEL (Lower Explosive Limit)	4% (Hydrogen)	UEL (Upper Explosive Limit)	74% (Hydrogen)
Appearance and Odor:	Manufactured article; no apparent odor. Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.		

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable _X_ Unstable ___
This product is stable under normal conditions at ambient temperature.

Conditions to Avoid: Prolonged overcharge at high current; sources of ignition.

Incompatibilities: (materials to avoid)
Electrolyte: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.
Lead compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents.
Arsenic compounds: strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas – arsine

Hazardous Decomposition Products:
Electrolyte: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen sulfide.
Lead compounds: Temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

Hazardous Polymerization:
Will not occur.

SECTION 11: TOXICOLOGY INFORMATION

Routes of Entry:
Sulfuric Acid: Harmful by all routes of entry.
Lead Compounds: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create dust, vapor or fume. The presence of nascent hydrogen may generate highly toxic arsine gas.

Inhalation:
Sulfuric Acid: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.
Lead Compounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

Ingestion:
Sulfuric Acid: May cause severe irritation of mouth, throat, esophagus and stomach.
Lead Compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.

Skin Contact:
Sulfuric Acid: Severe irritation, burns and ulceration.
Lead Compounds: Not absorbed through the skin.
Arsenic compounds: Contact may cause dermatitis and skin hyperpigmentation

Eye Contact:
Sulfuric Acid: Severe irritation, burns, cornea damage, and blindness.
Lead Compounds: May cause eye irritation.

Effects of Overexposure - Acute:
Sulfuric Acid: Severe skin irritation, damage to cornea, upper respiratory irritation.
Lead Compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

Effects of Overexposure - Chronic:
Sulfuric Acid: Possible erosion of tooth enamel, inflammation of nose, throat & bronchial tubes.
Lead Compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace

may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50 µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

Carcinogenicity:
Sulfuric Acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category I carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist.
Lead Compounds: Lead is listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.
Arsenic: Listed by National Toxicology Program (NTP), International Agency for Research on Cancer (IARC), OSHA and NIOSH as a carcinogen only after prolonged exposure at high levels.

Medical Conditions Generally Aggravated by Exposure:
Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggravate diseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

Acute Toxicity:
Inhalation LD50:
Electrolyte: LC50 rat: 375 mg/m3; LC50: guinea pig: 510 mg/m3
Elemental Lead: Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion)
Elemental arsenic: No data

Oral LD50:
Electrolyte: rat: 2140 mg/kg
Elemental lead: Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)
Elemental arsenic: LD50 mouse: 145 mg/kg
Elemental Antimony: LD50 rat: 100 mg/kg

Additional Health Data:
All heavy metals, including the hazardous ingredients in this product, are taken into the body primarily by inhalation and ingestion. Most inhalation problems can be avoided by adequate precautions such as ventilation and respiratory protection covered in Section 8. Follow good personal hygiene to avoid inhalation and ingestion: wash hands, face, neck and arms thoroughly before eating, smoking or leaving the work site. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of food, tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated areas and never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated from children and their environment.

The 19th Amendment to EC Directive 67/548/EEC classified lead compounds, but not lead in metal form, as possibly toxic to reproduction. Risk phrase 61: May cause harm to the unborn child, applies to lead compounds, especially soluble forms.

SECTION 12: ECOLOGICAL INFORMATION

Environmental Fate: Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments is slow. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain. Most studies include lead compounds and not elemental lead.

Environmental Toxicity: Aquatic Toxicity:

Sulfuric acid:	24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L
	96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L
Lead:	48 hr LC50 (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion
Arsenic:	24 hr LC50, freshwater fish (Carrassisus auratus) >5000 g/L.

Additional Information

· No known effects on stratospheric ozone depletion.
· Volatile organic compounds: 0% (by Volume)
· Water Endangering Class (WGK): NA

SECTION 13: DISPOSAL CONSIDERATIONS (UNITED STATES)

Spent batteries: Send to secondary lead smelter for recycling. Spent lead-acid batteries are not regulated as hazardous waste when the requirements of 40 CFR Section 266.80 are met. Spilled sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity) and D008 (lead).

Electrolyte: Place neutralized slurry into sealed acid resistant containers and dispose of as hazardous waste, as applicable. Large water diluted spills, after neutralization and testing, should be managed in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

Following local, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.

SECTION 14: TRANSPORT INFORMATION

United States:
The U.S. Department of Transportation (DOT) hazardous materials regulations (49 CFR) applicable to lead acid batteries are specified in 49 CFR 173.159.

Proper Shipping Name: Batteries, wet, filled with acid
Hazard Class: 8

ID Number: UN2794
Packing Group: N/A
Labels: Corrosive

49 CFR 173.159(e) specifies that when transported by highway or rail, electric storage batteries containing electrolyte or corrosive battery fluid are not subject to any other requirements of this subchapter, if all of the following are met:

(1) No other hazardous materials may be transported in the same vehicle;
(2) The batteries must be loaded or braced so as to prevent damage and short circuits in transit;
(3) Any other material loaded in the same vehicle must be blocked, braced, or otherwise secured to prevent contact with or damage to the batteries; and
(4) The transport vehicle may not carry material shipped by any person other than the shipper of the batteries.

If any of the above-referenced requirements are not met, the batteries must be shipped as fully-regulated Class 8 Corrosive hazardous materials.

IATA Dangerous Goods Regulations (DGR):
The shipping information is as follows:
Proper Shipping Name: Batteries, wet, filled with acid
Packing Group: N/A
Hazardous Class: 8
Label/Placard Required: Corrosive
UN Identification: UN2794
Reference IATA Packing Instruction 870 (IATA DGR 56th Edition)

IMDG Code:
The shipping information is as follows:
Proper Shipping Name: Batteries, wet, filled with acid
Packing Group: N/A
Hazardous Class: 8
Label/Placard Required: Corrosive
UN Identification: UN2794
Reference IMDG Code Packing Instruction P801

SECTION 15: REGULATORY INFORMATION

UNITED STATES:
EPA SARA Title III:
Section 302 EPCRA Extremely Hazardous Substances (EHS):
Sulfuric acid is a listed "Extremely Hazardous Substance" under EPCRA, with a Threshold Planning Quantity (TPQ) of 1,000 lbs. EPCRA Section 302 notification is required if 500 lbs or more of sulfuric acid is present at one site (40 CFR 370.10). For more information consult 40 CFR Part 355.

Section 304 CERCLA Hazardous Substances:
Reportable Quantity (RQ) for spilled 100% sulfuric acid under CERCLA (Superfund) and EPCRA (Emergency Planning and Community Right to Know Act) is 1,000 lbs. State and local reportable quantities for spilled sulfuric acid may vary.

Section 311/312 Hazard Categorization:
EPCRA Section 312 Tier Two reporting is required for non-automotive batteries if sulfuric acid is present in quantities of 500 lbs or more and/or if lead is present in quantities of 10,000 lbs or more. For more information consult 40 CFR 370.10 and 40 CFR 370.40

Section 313 EPCRA Toxic Substances: 40 CFR section 372.38 (b) states: If a toxic chemical is present in an article at a covered facility, a person is not required to consider the quantity of the toxic chemical present in such article when determining whether an applicable threshold has been met under § 372.25, § 372.27, or § 372.28 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the article from another person or the person produced the article. However, this exemption applies only to the quantity of the toxic chemical present in the article.

Supplier Notification: This product contains toxic chemicals that may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. For a manufacturing facility under SIC codes 20 through 39, the following information is provided to enable you to complete the required reports:

Toxic Chemical	CAS Number	Approximate % by Weight
Lead	7439-92-1	67
Sulfuric Acid/Water Solution	7664-93-9	21
Antimony	7440-36-0	1
Arsenic	7440-38-2	<0.01
Tin	7440-31-5	<0.01

See 40 CFR Part 370 for more details.

TSCA:
TSCA Section 8b – Inventory Status: All chemicals comprising this product are either exempt or listed on the TSCA Inventory.

TSCA Section 12b (40 CFR Part 707.60(b)) No notice of export will be required for articles, except PCB articles, unless the Agency so requires in the context of individual section 5, 6, or 7 actions.

TSCA Section 13 (40 CFR Part 707.20): No import certification required (EPA 305-B-99-001, June 1999, Introduction to the Chemical Import Requirements of the Toxic Substances Control Act, Section IV.A)

RCRA: Spent Lead Acid Batteries are subject to streamlined handling requirements when managed in compliance with 40 CFR section 266.80 or 40 CFR part 273. Waste sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity) and D008 (lead).

STATE REGULATIONS (US):
STATE REGULATIONS (US):
***Proposition 65 Warning**
Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and reproductive harm. Wash hands after handling.
*Battery companies not party to the 1999 consent judgment with Mateel Environmental Justice Foundation should include a Proposition 65 Warning that complies with the current version of Proposition 65.

INTERNATIONAL REGULATIONS:
Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).

Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

SECTION 16: OTHER INFORMATION

NFPA Hazard Rating for sulfuric acid:
Flammability (Red) = 0
Health (Blue) = 3
Reactivity (Yellow) = 2

Sulfuric acid is water-reactive if concentrated.

SOURCES OF INFORMATION:
International Agency for Research on Cancer (1987), *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Overall Evaluations of Carcinogenicity: An updating of IARC Monographs Volumes 1-42, Supplement 7, Lyon*, France.
Ontario Ministry of Labor Regulation 654/86. Regulations Respecting Exposure to Chemical or Biological Agents.
RTECS – Registry of Toxic Effects of Chemical Substances, National institute for Occupational Safety and Health.

SDS PREPARATION INFORMATION:

DATE OF ISSUE: 7/26/18

SUPERCEDES DATE: 2/26/18

DISCLAIMER: This Safety Data Sheet is based upon information and sources available at the time of preparation or revision date. Information in the SDS was obtained from sources which we believe are reliable but are beyond our direct supervision or control. We make no Warranty of Merchantability, Fitness for any particular purpose or any other Warranty, Expressed or Implied, with respect to such information and we assume no liability resulting from its use. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the obligation of each user of this product to determine the suitability of this product and comply with the requirements of all applicable laws regarding use and disposal of this product. For additional information concerning Battery Builders, LLC. products or questions concerning the contents of this SDS please contact your Battery Builders representative.

Revision Number: 006.7

Issue date: 09/10/2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **BONDERITE M-NT 1 CONVERSION COATING known as BONDERITE NT-1**

IDH number: 611359

Product type: Conversion coating

Restriction of Use: None identified

Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: +1 (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
CONTAINS FLUORIDES. MAY CAUSE DELAYED BURNS (NOT IMMEDIATELY PAINFUL OR VISIBLE)! LONG TERM EXPOSURE TO FLUORIDES OVER YEARS MAY CAUSE FLUOROSIS!

HAZARD CLASS	HAZARD CATEGORY
None	None

PICTOGRAM(S)
None

Precautionary Statements

Prevention: Not prescribed
Response: Not prescribed
Storage: Not prescribed
Disposal: Not prescribed

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Hexafluorozirconic acid	12021-95-3	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact: Remove contaminated clothing and footwear. Get medical attention. Rinse with large amounts of running water. GET MEDICAL ATTENTION IMMEDIATELY! If iced 0.13% benzalkonium chloride (Zephiran) solution or 2.5% calcium gluconate gel are available, the rinsing may be limited to 5 minutes, with the soaks or gel applied as soon as the rinsing is stopped. If benzalkonium chloride or calcium gluconate gel is not available, rinsing must continue until medical treatment is provided.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Get immediate medical attention. DO NOT induce vomiting unless directed to do so by medical personnel.

Symptoms: See Section 11.

Notes to physician: Ocular exposure to corrosive fluoride compounds has been treated with isotonic sodium chloride or magnesium chloride. Dermal exposure to corrosive fluoride compounds has been treated with calcium gluconate or calcium carbonate gel applied topically to the affected areas to relieve pain at the site of exposure.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.

Hazardous combustion products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.

Clean-up methods: Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors or mists of this product. Use only with adequate ventilation. Do not take internally. For industrial use only.

Storage: For safe storage, store between 40 °F (4.4 °C) and 110 °F (43.3 °C) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Protect from freezing.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Hexafluorozirconic acid	5 mg/m3 TWA (as Zr) 10 mg/m3 STEL (as Zr)	5 mg/m3 PEL (as Zr)	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Clear to slightly hazy
Odor: Mild
Odor threshold: Not available.
pH: 2.2 - 2.4
Vapor pressure: Not determined
Boiling point/range: > 98.9 °C (> 210°F)
Melting point/ range: Not determined
Specific gravity: 1.00 - 1.01 at 15.6 °C (60.08 °F)
Vapor density: Not determined
Flash point: Not applicable
Flammable/Explosive limits - lower: Not applicable
Flammable/Explosive limits - upper: Not applicable
Autoignition temperature: Not applicable
Flammability: Not applicable
Evaporation rate: Not available.
Solubility in water: Disperses in water as a suspension
Partition coefficient (n-octanol/water): Not determined
VOC content: Not available.
Viscosity: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions of storage and use.

Hazardous reactions: None under normal processing.

Hazardous decomposition products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen. Hydrogen fluoride

Incompatible materials: Avoid contact with organic materials, oils, greases, and any oxidizable materials. This product may react with strong alkalies.

Reactivity: Not available.

Conditions to avoid: Keep away from heat, ignition sources and incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. Inhalation of mists or vapors may produce upper airway edema, wheezing, pulmonary edema, pneumonitis and respiratory failure. Contains fluorides. Exposure to fluorides over years may cause fluorosis.

Skin contact: May cause mild to severe skin irritation. Liquid or vapor can cause fluoride-type irritation or burns which may not be immediately painful or visible. Following skin exposure to this product, the sensation of irritation or pain may be delayed.

Eye contact: This product may be severely irritating to the eyes.

Ingestion: Ingestion of large amounts may produce gastrointestinal disturbances including irritation, nausea, and diarrhea.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Hexafluorozirconic acid	None	No Records

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Hexafluorozirconic acid	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Do not empty into drains / surface water / ground water.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA. Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

International Air Transportation (ICAO/IATA)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

Water Transportation (IMO/IMDG)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification:	None above reporting de minimis
CERCLA/SARA Section 302 EHS:	None above reporting de minimis.
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA Section 313:	None above reporting de minimis.
California Proposition 65:	No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Regulatory Affairs

Issue date: 09/10/2018

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Safety Data Sheet
Carbon Dioxide

Section 1: Product and Company Identification

Cee Kay Supply, Inc
5835 Manchester Avenue
Saint Louis, MO 63110
www.CeeKay.com
(314) 644-3500

Product Code: Carbon Dioxide

Section 2: Hazards Identification

Warning

Hazard Classification:
Gases Under Pressure

Hazard Statements:
Contains gas under pressure; may explode if heated

Precautionary Statements

Storage:
Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
124-38-9

Chemical Substance	Chemical Family	Trade Names
CARBON DIOXIDE, GAS	Inorganic gases	CARBONIC ACID GAS; CARBONIC ANHYDRIDE; CARBON DIOXIDE; CARBON OXIDE; UN 1013; CO2

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.	Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	Do not induce vomiting.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Non-flammable	Non-flammable	▪ Any appropriate escape-type, self-contained breathing apparatus. ▪ Non-flammable

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Do not touch spilled material.	Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.	Stop leak if possible without personal risk.

Methods for Cleanup	Other Information
Stop leak, evacuate, remove source of ignition.	None

Section 7: Handling and Storage

Handling	Storage
Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.	Store and handle in accordance with all current regulations and standards

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
CARBON DIOXIDE, GAS: CARBON DIOXIDE: 5000 ppm (9000 mg/m3) OSHA TWA 10000 ppm (18000 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 30000 ppm (54000 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 5000 ppm ACGIH TWA 30000 ppm ACGIH STEL 5000 ppm (9000 mg/m3) NIOSH recommended TWA 10 hour(s) 30000 ppm (54000 mg/m3) NIOSH recommended STEL

Engineering Controls
Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.	Any appropriate escape-type, self-contained breathing apparatus.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Colorless	Colorless	N/A	Gas	Odorless	Acid taste

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not flammable	Not available	N/A	Nonflammable	Nonflammable	Nonflammable

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
Not available	-71 F (-57 C) @ 4000 mmHg	43700 mmHg @ 21 C	1.5 (Air=1)	1.522 @ 21 C	Soluble	3.7 (saturated aqueous solution) @ 101.3 kPa (carbonic acid)	Not available	Not applicable	0.01657 cP @ 0 C

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
44.01	C-O2	0.114	Not available	Not applicable	Not applicable	Soluble: Alcohol, acetone, hydrocarbons, organic solvents

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Carbon monoxide	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
Not established	Not established	Ringing in the ears, nausea, irregular heartbeat, headache, drowsiness, dizziness, tingling sensation, visual disturbances, suffocation, convulsions, coma

Eye Irritation	Skin Irritation	Sensitization
Irritation, frostbite, blurred vision	Liquid: blisters, frostbite	Difficulty breathing

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not available	Not established	Available.	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: 150000 ug/L 48 day(s) (Mortality) Brown trout (Salmo trutta) Invertibrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Relatively non-persistent in the environment. Moderately volatile from water.	Accumulates very little in the bodies of living organisms.	Leaches through the soil

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Carbon dioxide	UN1013	2.2	Not applicable	2.2	75 kg or L	150kg	None

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Carbon dioxide	UN1013	2.2	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	No	No	Yes

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65
Not regulated.

Canadian Regulations

WHMIS Classification
A

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Listed on inventory.

Section 16: Other Information

NFPA Rating
HEALTH=2 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

COLD ROLLED, HOT ROLLED AND ENAMELING STEEL

Safety Data Sheet (SDS)

Section 1 – Identification

1(a) Product Identifier used on Label: Cold Rolled, Hot Rolled Steel and Enameling Steel

1(b) Other means of identification: AKS-005, Refer to Section 16 for other synonyms

1(c) Recommended use of the chemical and restrictions on use: None

1(d) Name, address, and telephone number:

AK Steel
9227 Centre Point Drive
West Chester, Ohio 45069

Phone number : 513 425-5000 (information)
513 425-5104 (Health & Safety)

1(e) Emergency phone number: 800 331-5050

Section 2 – Hazard(s) Identification

2(a) Classification of the chemical: Cold Rolled, Hot Rolled Steel and Enameling Steel is considered an article under Reach regulation (REACH REGULATION (EC) No 1907/2006) and is not subject to classification under CLP regulation (REGULATION (EC) No 1272/2008). However, **Cold Rolled, Hot Rolled Steel and Enameling Steel** is not exempt as an article under OSHA's Hazard Communication Standard (29 CFR 1910.1200) due to its downstream use, thus this product is considered a mixture and a hazardous material. Therefore, the categories of Health Hazards as defined in "GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3" United Nations, New York and Geneva, 2009 have been evaluated. Refer to Section 3, 8 and 11 for additional information.

2(b) Signal word, hazard statement(s), symbols and precautionary statement(s):

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement(s)
	Carcinogenicity - 2 Reproductive Toxicity - 2 Single Target Organ Toxicity (STOT) Repeat Exposure -1	**Danger**	Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Causes damage to lungs and central nervous system through prolonged or repeated inhalation exposure.
	Acute Toxicity-Oral - 4 Skin Sensitization - 1 STOT Single Exposure - 3		Harmful if swallowed. May cause an allergic skin reaction. May cause respiratory irritation.
NA	Eye Irritation - 2B		Causes eye irritation.

Precautionary Statement(s):

Prevention	Response	Storage/Disposal
Do not breathe dusts / fume / gas / mist / vapor / spray. Wear protective gloves / protective clothing / eye protection / face protection. Contaminated work clothing must not be allowed out of the workplace. Use only outdoors or in well ventilated areas. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product.	If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed, concerned or feel unwell: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing. If eye irritation persists: Get medical advice/attention. If on skin: Wash with plenty of water. If irritation or rash occurs: Get medical advice/attention. Take off and wash contaminated clothing before reuse. If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth.	Dispose of contents in accordance with federal, state and local regulations.

2(c) Hazards not otherwise classified: None Known

2(d) Unknown acute toxicity statement (mixture): None Known

Section 3 – Composition/Information on Ingredients

3(a-c) Chemical name, common name (synonyms), CAS number and other identifiers, and concentration:

Chemical Name	CAS Number	EC Number	% by weight
Iron	7439-89-6	231-096-4	>95
Chromium	7440-47-3	231-157-5	1.10 (max)
Manganese	7439-96-5	231-105-1	<2.0

Section 3 – Composition/Information on Ingredients (continued)

3(a-c) Chemical name, common name (synonyms), CAS number and other identifiers, and concentration (continued):

Chemical Name	CAS Number	EC Number	% by weight
Nickel	7440-02-0	231-111-4	0.6 (max)
Silicon	7440-21-3	231-130-8	<1.0

EC - European Community
CAS - Chemical Abstract Service

Notes:

- Commercial steel products contain small amounts of various elements in addition to those specified. These small quantities frequently referred to as "trace" or "residual" elements, generally originate in the raw materials used and/or are alloying metals. Individual trace elements vary in concentration by weight, and may include aluminum, boron, calcium, carbon, columbium (niobium), copper, molybdenum, phosphorus, sulfur, titanium, and vanadium.
- Percentages are expressed as typical ranges or maximum concentrations of trace elements for the purpose of communicating the potential hazards of the finished product. Consult product specifications for specific composition information.
- The product may have a light coating of oil to prevent corrosion.

* Steel products as provided contain chromium metal in the zero valence state. As such, chromium metal does not present any unusual health hazard. Hence, the most applicable exposure limits relative to chromium in these products are those established for the metal, itself. However, welding, torch cutting, brazing or perhaps grinding of the chromium metal in steel products may generate airborne concentrations of hexavalent chromium, (Cr VI), a confirmed human carcinogen. Therefore, should the user perform any of these tasks, the hexavalent chromium exposure limits would apply.

Section 4 – First-aid Measures

4(a) Description of necessary measures:

- **Inhalation: Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), if inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed, concerned or feel unwell: Get medical advice/attention.
- **Eye Contact: Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), if in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing. If eye irritation persists: Get medical advice attention. If exposed, concerned or feel unwell: Get medical advice/attention.
- **Skin Contact:** If on skin: Wash thoroughly after handling. Wash with plenty of water. If irritation or rash occurs: Get medical advice/attention. Take off and wash contaminated clothing before reuse. If exposed, concerned or feel unwell: Get medical advice/attention.
- **Ingestion: Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), if swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. If exposed, concerned or feel unwell: Get medical advice/attention.

4(b) Most important symptoms/effects, acute and delayed (chronic):

- **Inhalation: Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped is not likely to present an acute or chronic health effect.
- **Eye: Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped is not likely to present an acute or chronic health effect.
- **Skin: Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped is not likely to present an acute or chronic health effect.
- **Ingestion: Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped is not likely to present an acute or chronic health effect.

However during further processing (welding, grinding, burning, etc.) individual components may illicit an acute or chronic health effect. Refer to Section 11-Toxicological Information.

4(c) Immediate Medical Attention and Special Treatment: None Known

Section 5 – Fire-fighting Measures

5(a) Suitable (and unsuitable) Extinguishing Media: Not Applicable for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped. Use extinguishers appropriate for surrounding materials.

5(b) Specific Hazards arising from the chemical: Not Applicable for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped. When burned, toxic smoke, fume and vapor may be emitted.

5(c) Special protective equipment and precautions for fire-fighters: Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: Not Applicable for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped. For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust.

6(b) Methods and materials for containment and clean up: Not Applicable for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Section 7 - Handling and Storage

7(a) Precautions for safe handling: Not Applicable for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped, however further processing (welding, burning, grinding, etc.) with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in well ventilated areas. Practice good housekeeping. Avoid breathing metal fumes and/or dust. Do not eat, drink or smoke when using this product. Cut resistant gloves and sleeves should be worn when working with steel products.

7(b) Conditions for safe storage, including any incompatibilities: Store away from acids and incompatible materials.

Section 8 - Exposure Controls / Personal Protection

8(a) Occupational Exposure Limits (OELs): Cold Rolled, Hot Rolled Steel and Enameling Steel as sold/shipped in its physical form does not present an inhalation, ingestion or contact hazard, nor would any of the following exposure data apply. However, operations such as burning, welding (high temperature), sawing, brazing, machining, grinding, etc. may produce fumes and/or particulates. The following exposure limits are offered as reference for an experienced industrial hygienist to review.

Ingredients	OSHA PEL [1]	ACGIH TLV [2]	NIOSH REL [3]	IDLH [4]
Iron	10 mg/m³ (as iron oxide fume)	5.0 mg/m³ (as iron oxide dust and fume)	5.0 mg/m³ (as iron oxide dust and fume)	2,500 mg Fe/m^3
Chromium	0.5 mg/m³ (as Cr II & III, inorganic compounds) 1.0 mg/m³ (as Cr, metal) 0.005 mg/m³ (as Cr VI, inorganic compounds & certain water insoluble) "AL" 0.0025 mg/m³ (as Cr VI, inorganic compounds & certain water insoluble)	0.5 mg/m³ (as Cr III, inorganic compounds) 0.5 mg/m³ (as Cr, metal) 0.05 mg/m³ (as Cr VI, inorganic compounds) 0.01 mg/m³ (as Cr VI, inorganic compounds & certain water insoluble)	0.5 mg/m³ (as Cr II & III, inorganic compounds) 0.5 mg/m³ (as Cr, metal) 0.001 mg/m³ (as Cr VI, inorganic compounds & certain water insoluble)	250 mg/m³ (as Cr II & metal) 25 mg/m³ (as Cr III) 15 mg/m³ (as Cr VI)
Manganese	(C) 5.0 mg/m³ (as Fume & Mn compounds)	0.2 mg/m³	(C) 5.0 mg/m³ 1.0 mg/m³ (as fume) (STEL) 3.0 mg/m³	500 mg Mn/m^3
Nickel	1.0 mg/m³ (as Ni metal & insoluble compounds)	1.5 mg/m³ (as inhalable fraction[5] Ni metal) 0.2 mg/m³ (as inhalable fraction Ni inorganic only insoluble and soluble compounds)	0.015 mg/m³ (as Ni metal & insoluble and soluble compounds)	10 mg/m³ (as Ni)
Silicon	15 mg/m³ (total dust, PNOR[6]) 5.0 mg/m³ (as respirable fraction, PNOR)	10 mg/m³	10 mg/m³ (as total dust) 5.0 mg/m³ (as respirable dust)	NE

NE - None Established

1. OSHA Permissible Exposure Limits (PELs) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A (C) designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Peak is defined as the acceptable maximum peak for a maximum duration above the ceiling concentration for an eight-hour shift. A skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday. An Action level (AL) is used by OSHA and NIOSH to express a health or physical hazard. They indicate the level of a harmful or toxic substance/activity, which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring. Action Levels are generally set at one half of the PEL but the actual level may vary from standard to standard. The intent is to identify a level at which the vast majority of randomly sampled exposures will be below the PEL.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as the maximum concentration to which workers can be exposed for a short period of time (15 minutes) for only four times throughout the day with at least one hour between exposures. A "skin" notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. ACGIH-TLVs are only recommended guidelines based upon consensus agreement of the membership of the ACGIH. As such, the ACGIH TLVs are for guideline use purposes and are not legal regulatory standards for compliance purposes. The TLVs are designed for use by individuals trained in the discipline of industrial hygiene relative to the evaluation of exposure to various chemical or biological substances and physical agents that may be found in the workplace.
3. The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH-REL) - Compendium of Policy and Statements. NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970's by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994.
5. Inhalable fraction. The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2014 TLVs ® and BEIs ® (Biological Exposure Indices) Appendix D, paragraph A.
6. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by a limit which is the same as the inert or nuisance dust limit of 15 mg/m^3 for total dust and 5 mg/m^3 for the respirable fraction.

8(b) Appropriate Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes and dusts during handling operations. Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust is necessary for use in enclosed or confined spaces. Provide sufficient general/local exhaust ventilation in pattern/volume to control inhalation exposures below current exposure limits.

8(c) Individual Protection Measures:

- **Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use only a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air …

Section 8 - Exposure Controls / Personal Protection (continued)

8(c) Individual Protection Measures (continued):

- **Respiratory Protection (continued):** … of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self-contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (Immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

  Warning! Air-purifying respirators both negative-pressure, and powered-air do not protect workers in oxygen-deficient atmospheres.
- **Eyes**: Wear appropriate eye protection to prevent eye contact. For operations which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use safety glasses to prevent eye contact. Contact lenses should not be worn where industrial exposures to this material are likely. Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.
- **Skin**: Wear appropriate personal protective clothing to prevent skin contact. Cut resistant gloves and sleeves should be worn when working with steel products. For operations which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use protective clothing, and gloves to prevent skin contact. Protective gloves should be worn as required for welding, burning or handling operations. Contaminated work clothing must not be allowed out of the workplace.
- **Other protective equipment**: An eyewash fountain and deluge shower should be readily available in the work area.

Section 9 - Physical and Chemical Properties

9(a) Appearance (physical state, color, etc.): Solid, Metallic Gray

9(b) Odor: Odorless

9(c) Odor Threshold: NA

9(d) pH: NA

9(e) Melting Point/Freezing Point: 2795° F, 1530° C (Approximate)

9(f) Initial Boiling Point and Boiling Range: ND

9(g) Flash Point: NA

9(h) Evaporation Rate: NA

9(i) Flammability (solid, gas): Non-flammable, non-combustible

9(j) Upper/lower Flammability or Explosive Limits: NA

9(k) Vapor Pressure: NA

9(l) Vapor Density (Air = 1): NA

9(m) Relative Density: >1.0 SG

9(n) Solubility(ies): Water Insoluble

9(o) Partition Coefficient n-octanol/water: ND

9(p) Auto-ignition Temperature: NA

9(q) Decomposition Temperature: ND

9(r) Viscosity: NA

NA - Not Applicable
ND - Not Determined for product as a whole

Section 10 - Stability and Reactivity

10(a) Reactivity: Not Determined (ND) for product in a solid form. Do not use water on molten metal.

10(b) Chemical Stability: Steel products are stable under normal storage and handling conditions.

10(c) Possibility of hazardous reaction: None Known

10(d) Conditions to Avoid: Storage with strong acids or calcium hypochlorite.

10(e) Incompatible Materials: Will react with strong acids to form hydrogen. Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.

10(f) Hazardous Decomposition Products: Thermal oxidative decomposition of steel products can produce fumes containing oxides of iron and manganese as well as other alloying elements.

Section 11 - Toxicological Information

11(a-e) Information on toxicological effects: The following toxicity data has been determined for **Cold Rolled, Hot Rolled Steel and Enameling Steel** when further processed using the information available for its components applied to the guidance on the preparation of an SDS under the GHS requirements of OSHA and the EU CPL:

Hazard Classification	Hazard Category		Hazard Symbols	Signal Word	Hazard Statement
	EU	OSHA			
Acute Toxicity Hazard (covers Categories 1-4)	NA*	4[a]		**Warning**	Harmful if swallowed.
Eye Damage/ Irritation (covers Categories 1, 2A and 2B)	NA*	2B[c]	No Pictogram	**Warning**	Causes eye irritation.
Skin/Dermal Sensitization (covers Category 1)	NA*	1[d]		**Warning**	May cause an allergic skin reaction.

Section 11 - Toxicological Information (continued)

11(a-e) Information on toxicological effects (continued):

Hazard Classification	Hazard Category		Hazard Symbols	Signal Word	Hazard Statement
	EU	OSHA			
Carcinogenicity (covers Categories 1A, 1B and 2)	NA*	2[g]		**Warning**	Suspected of causing cancer.
Toxic Reproduction (covers Categories 1A, 1B and 2)	NA*	2[h]		**Warning**	Suspected of damaging fertility or the unborn child.
Specific Target Organ Toxicity (STOT) Following Single Exposure (covers Categories 1-3)	NA*	3[i]		**Warning**	May cause respiratory irritation.
STOT following Repeated Exposure (covers Categories 1 and 2)	NA*	1[j]		**Danger**	Causes damage to lungs and central nervous system through prolonged or repeated inhalation exposure.

* Not Applicable - Semi-formed steel products are considered articles under Reach regulation (REACH REGULATION (EC) No 1907/2006) and are not subject to classification under CLP regulation (REGULATION (EC) No 1272/2008).

Toxicological data listed below are presented regardless to classification criteria. Individual hazard classification categories where the toxicological information has met or exceeded a classification criteria threshold are listed above.

a. No LC_{50} or LD_{50} has been established for **Cold Rolled, Hot Rolled Steel and Enameling Steel**. The following data has been determined for the components:

- **Iron:** Rat LD_{50} =98.6 g/kg (REACH)
  Rat LD_{50} =1060 mg/kg (IUCLID)
  Rat LD_{50} =984 mg/kg (IUCLID)
  Rabbit LD_{50} =890 mg/kg (IUCLID)
  Guinea Pig LD_{50} =20 g/kg (TOXNET)
- **Nickel:** LD_{50} >9000 mg/kg (Oral/Rat)
- **Silicon:** L_{D50} = 3160 mg/kg (Oral/Rat)
- **Manganese:** Rat LD_{50} > 2000 mg/kg (REACH)
  Rat LD_{50} > 9000 mg/kg (NLM Toxnet)

b. No Skin (Dermal) Irritation data available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a as a mixture or its individual components.

c. No Eye Irritation data available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a mixture. The following Eye Irritation information was found for the components:

- **Iron:** Causes eye irritation.
- **Silicon:** Slight eye irritation in rabbit protocol.
- **Nickel:** Slight eye irritation from particulate abrasion only.

d. No Skin (Dermal) Sensitization data available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a mixture. The following Skin (Dermal) Sensitization information was found for the components:

- **Nickel:** May cause allergic skin sensitization.

e. No Respiratory Sensitization data available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a mixture or its components.

f. No Germ Cell Mutagenicity data available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a mixture. The following Mutagenicity and Genotoxicity information was found for the components:

- **Iron:** IUCLID has found some positive and negative findings in vitro.
- **Nickel:** EU RAR has found positive results in vitro and in vivo but insufficient data for classification.

g. Carcinogenicity: IARC, NTP, and OSHA do not list **Cold Rolled, Hot Rolled Steel and Enameling Steel** as carcinogens. The following Carcinogenicity information was found for the components:

- **Welding Fumes -** IARC Group 2B carcinogen, a mixture that is possibly carcinogenic to humans.
- **Chromium (as metal and trivalent chromium compounds)** – IARC Group 3 carcinogens, not classifiable as to their human carcinogenicity.
- **Nickel and certain nickel compounds –** Group 2B - metallic nickel Group 1 - nickel compounds ACGIH confirmed human carcinogen. Nickel – EURAR Insufficient evidence to conclude carcinogenic potential in animals or humans; suspect carcinogen classification Category 2 Suspected of causing cancer.

h. No Toxic Reproduction data available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a mixture. The following Toxic Reproductive information was found for the components:

- **Nickel**: Effects on fertility.

i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a mixture. The following STOT following a Single Exposure data was found for the components:

- **Iron**: Irritating to Respiratory tract.

j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a whole. The following STOT following Repeated Exposure data was found for the components:

- **Nickel**: Rat 4 wk inhalation LOEL 4 mg/m^3 Lung and Lymph node histopathology. Rat 2 yr inhalation LOEL 0.1 mg/ m^3 Pigment in kidney, effects on hematopoiesis spleen and bone marrow and adrenal tumor. Rat 13 Week Inhalation LOAEC 1.0 mg/m^3 Lung weights, and Alveolar histopathology.
- **Manganese**: Inhalation of metal fumes - Degenerative changes in human Brain; Behavioral: Changes in motor activity and muscle weakness (Whitlock *et al.*, 1966).

Section 11 - Toxicological Information (continued)

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2009, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS).

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s) and potential resultant components from further processing:

Acute Effects:

- **Inhalation:** Excessive exposure to high concentrations of metal dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 micrometer and usually between 0.02-0.05 micrometers from many metals can produce an acute reaction known as "metal fume fever". Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. The symptoms come on in a few hours after excessive exposures and usually last from 12 to 48 hours. Long-term effects from metal fume fever have not been noted. Freshly formed oxide fumes of manganese and copper have been associated with causing metal fume fever.
- **Eye:** Excessive exposure to high concentrations of metal dust may cause irritation to the eyes.
- **Skin:** Skin contact with metal dusts may cause irritation or sensitization, possibly leading to dermatitis. Skin contact with metallic fumes and dusts may cause physical abrasion.
- **Ingestion:** Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of metal dust may cause nausea or vomiting.

Acute Effects by component:

- **Iron and iron oxides:** Iron is harmful if swallowed, causes skin irritation, and causes eye irritation. Contact with iron oxide has been reported to cause skin irritation and serious eye damage. Particles of iron or iron compounds, which become imbedded in the eye, may cause rust stains unless removed fairly promptly.
- **Chromium, chromium oxides and hexavalent chrome:** Hexavalent chrome causes damage to gastrointestinal tract, lung, severe skin burns and eye damage, serious eye damage, skin contact may cause an allergic skin reaction. Inhalation may cause allergic or asthmatic symptoms or breathing difficulties.
- **Manganese and manganese oxides:** Manganese and Manganese oxide is harmful if swallowed.
- **Nickel and nickel oxides:** Nickel may cause allergic skin sensitization. Nickel oxide may cause an allergic skin reaction.
- **Silicon and silicon oxides:** May be harmful if swallowed.

Delayed (chronic) Effects by component:

- **Iron and iron oxides**: Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign pneumoconiosis, called siderosis, which is observable as an X-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Iron oxide is listed as a Group 3 (not classifiable) carcinogen by the International Agency for Research on Cancer (IARC).
- **Chromium, chromium oxides and hexavalent chromium:** The health hazards associated with exposure to chromium are dependent upon its oxidation state. The metal form (chromium as it exists in this product) is of very low toxicity. The hexavalent form is very toxic. Repeated or prolonged exposure to hexavalent chromium compounds may cause respiratory irritation, nosebleed, ulceration and perforation of the nasal septum. Industrial exposure to certain forms of hexavalent chromium has been related to an increased incidence of cancer. NTP (The National Toxicology Program) Fourth Annual report on Carcinogens cites "certain Chromium compounds" as human carcinogens. ACGIH has reviewed the toxicity data and concluded that chromium metal is not classifiable as a human carcinogen. Hexavalent chromium may cause genetic defects and is suspected of damaging the unborn child. Developmental toxicity in the mouse, suspected of damaging fertility or the unborn child.
- **Manganese and manganese oxides:** Chronic exposure to high concentrations of manganese fumes and dusts may adversely affect the central nervous system with symptoms including languor, sleepiness, weakness, emotional disturbances, spastic gait, mask-like facial expression and paralysis. Animal studies indicate that manganese exposure may increase susceptibility to bacterial and viral infections. Occupational overexposure (Manganese) is a progressive, disabling neurological syndrome that typically begins with relatively mild symptoms and evolves to include altered gait, fine tremor, and sometimes, psychiatric disturbances. May cause damage to lungs with repeated or prolonged exposure. Neurobehavioral alterations in worker populations exposed to manganese oxides include: speed and coordination of motor function are especially impaired.
- **Nickel and nickel oxides:** Exposure to nickel dusts and fumes can cause sensitization dermatitis, respiratory irritation, asthma, pulmonary fibrosis, edema, and may cause nasal or lung cancer in humans. Nickel causes damage to lungs through prolonged or repeated inhalation exposure. IARC lists nickel and certain nickel compounds as Group 2B carcinogens (sufficient animal data). ACGIH 2013 TLVs® and BEIs® lists insoluble nickel compounds as confirmed human carcinogens. Nickel is suspected of damaging the unborn child.
- **Silicon and silicon oxides:** Silicon dusts are a low health risk by inhalation and should be treated as a nuisance dust. Eye contact with pure material can cause particulate irritation. Skin contact with silicon dusts may cause physical abrasion.

Section 12 - Ecological Information

12(a) Ecotoxicity (aquatic & terrestrial): No Data Available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped. However, individual components of the product when processed have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife as follows:

- **Iron Oxide**: LC_{50}: >1000 mg/L; Fish 48 h-EC_{50} > 100 mg/L (Currenta, 2008k); 96 h-$LC_0 \geq$ 50,000 mg/L. Test substance: Bayferrox 130 red (95 – 97% Fe_2O_3; < 4% SiO_2 and Al_2O_3) (Bayer, 1989a).
- **Hexavalent Chrome:** EU RAR listed as category 1, found acute EC_{50} and LD_{50} to algae and invertebrates < 1 mg.
- **Nickel Oxide:** IUCLID found LC_{50} in fish, invertebrates and algae > 100 mg/l.

Section 12 - Ecological Information (continued)

12(b) Persistence & Degradability: No Data Available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped or individual components.

12(c) Bioaccumulative Potential: No Data Available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped or individual components.

12(d) Mobility (in soil): No data available for **Cold Rolled, Hot Rolled Steel and Enameling Steel** as sold/shipped. However, individual components of the product have been found to be absorbed by plants from soil.

12(e) Other adverse effects: None Known

Additional Information:

Hazard Category: Not Reported

Signal Word: No Signal Word

Hazard Symbol: No Symbol

Hazard Statement: No Statement

Section 13 - Disposal Considerations

Disposal: Steel scrap should be recycled whenever possible. Product dusts and fumes from processing operations should also be recycled, or classified by a competent environmental professional and disposed of in accordance with applicable federal, state or local regulations.

Container Cleaning and Disposal: Follow applicable federal, state and local regulations. Observe safe handling precautions. European Waste Catalogue (EWC): 16-01-17 (ferrous metals), 12-01-99 (wastes not otherwise specified), 16-03-04 (off specification batches and unused products), or 15-01-04 (metallic packaging).

Please note this information is for Cold Rolled, Hot Rolled Steel and Enameling Steel in its original form. Any alterations can void this information.

Section 14 - Transport Information

14 (a-g) Transportation Information:

US Department of Transportation (DOT) under 49 CFR 172.101 **does not** regulate **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a hazardous material. All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

Shipping Name: Not Applicable (NA) **Shipping Symbols:** NA **Hazard Class:** NA **UN No.:** NA **Packing Group:** NA **DOT/ IMO Label:** NA **Special Provisions (172.102):** NA	**Packaging Authorizations** **a) Exceptions:** NA **b) Group:** NA **c) Authorization:** NA	**Quantity Limitations** **a) Passenger, Aircraft, or Railcar:** NA **b) Cargo Aircraft Only:** NA **Vessel Stowage Requirements** **a) Vessel Stowage:** NA **b) Other:** NA **DOT Reportable Quantities**: NA

International Maritime Dangerous Goods (IMDG) and the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) classification, packaging and shipping requirements follow the US DOT Hazardous Materials Regulation.

Regulations Concerning the International Carriage of Dangerous Goods by Road (ADR) does not regulate **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a hazardous material.

Shipping Name: Not Applicable (NA) **Classification Code:** NA **UN No.:** NA **Packing Group:** NA **ADR Label:** NA **Special Provisions:** NA **Limited Quantities:** NA	**Packaging** **a) Packing Instructions:** NA **b) Special Packing Provisions:** NA **c) Mixed Packing Provisions:** NA	**Portable Tanks & Bulk Containers** **a) Instructions:** NA **b) Special Provisions:** NA

International Air Transport Association (IATA) does not regulate **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a hazardous material.

Shipping Name: Not Applicable (NA) **Class/Division:** NA **Hazard Label (s):** NA **UN No.:** NA **Packing Group:** NA **Excepted Quantities (EQ):** NA	**Passenger & Cargo Aircraft Limited Quantity (EQ)**		**Cargo Aircraft Only**	**Special Provisions:** NA **ERG Code:** NA
	Pkg Inst: NA **Max Net Qty/Pkg:** NA	**Pkg Inst:** NA **Max Net Qty/Pkg:** NA	**Pkg Inst:** NA **Max Net Qty/Pkg:** NA	

Pkg Inst – Packing Instructions Max Net Qty/Pkg – Maximum Net Quantity per Package ERG – Emergency Response Drill Code

Transport Dangerous Goods (TDG) Classification: Cold Rolled, Hot Rolled Steel and Enameling Steel does not have a TDG classification.

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to an AK Steel product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

This product and/or its constituents are subject to the following regulations:

OSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product, **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a whole is not listed. However, individual components of the product are listed: Refer to Section 8, Exposure Controls and Personal Protection

EPA Regulations: The product, **Cold Rolled, Hot Rolled Steel and Enameling Steel** is not listed as a whole. However, individual components of the product are listed:

Components	Regulations
Chromium	CERCLA, CWA, SARA 313, RCRA, SDWA
Manganese	CAA, SARA 313, SDWA
Nickel	CAA, CERCLA, CWA, SARA 313

SARA 311/312 Potential Hazard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard

Regulations Key:

CAA	Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06])
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (42 USC Secs. 9601(14), 9603(a); 40 CFR Sec. 302.4, Table 302.4, Table 302.4 and App. A)
CWA	Clean Water Act (33 USC Secs. 1311; 1314(b), (c), (e), (g); 136(b), (c); 137(b), (c) [as of 8/2/06])
RCRA	Resource Conservation Recovery Act (42 USC Sec. 6921; 40 CFR Part 261 App VIII)
SARA	Superfund Amendments and Reauthorization Act of 1986 Title III Section 302 Extremely Hazardous Substances (42 USC Secs. 11023, 13106; 40 CFR sec. 372.65) and Section 313 Toxic Chemicals (42 USC Secs. 11023, 13106; 40 CFR Sec. 372.65 [as of 6/30/05])
TSCA	Toxic Substance Control Act (15 U.S.C. s/s 2601 et seq. [1976])
SDWA	Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. [1974])

Section 313 Supplier Notification: The product, **Cold Rolled, Hot Rolled Steel and Enameling Steel** contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act and 40 CFR part 372:

CAS #	Chemical Name	Percent by Weight
7440-47-3	Chromium	0.15 max
7439-96-5	Manganese	2.0 max
7440-02-0	Nickel	0.15 max

State Regulations: The product, **Cold Rolled, Hot Rolled Steel and Enameling Steel** as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

Pennsylvania Right to Know: Contains regulated material in the following categories:

- Hazardous Substances: Chromium, Manganese, Nickel and Silicon
- Environmental Hazards: Chromium, Manganese and Nickel
- Special Hazardous Substance: Chromium and Nickel

California Prop. 65: Contains elements known to the State of California to cause cancer or reproductive toxicity. This includes chromium compounds and nickel.

New Jersey: Contains regulated material in the following categories:

- Hazardous Substance: Chromium, Manganese, Nickel and Silicon
- Special Hazard Substance: Chromium, Manganese and Silicon
- Environmental Hazard Substance: Chromium, Manganese and Nickel

Minnesota: Chromium, Manganese, Nickel and Silicon

Massachusetts: Chromium, Manganese, and Nickel

Other Regulations:

WHMIS Classification (Canadian): The product, **Cold Rolled, Hot Rolled Steel and Enameling Steel** is not listed as a whole. However individual components are listed.

Ingredients	WHMIS Classification
Iron	B4, D2B
Manganese	B4, D2A
Nickel	D2A, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Prepared By: AM Health and Safety, Inc

Original Issue Date: 08/01/2002 **Revised Date:** 03/06/2015

Section 16 - Other Information (continued)

Additional Information:

Hazardous Material Identification System (HMIS) Classification

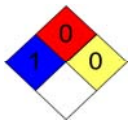
Health Hazard	1
Fire Hazard	0
Physical Hazard	0

HEALTH= **1**, Denotes possible chronic hazard if airborne dusts or fumes are generated Irritation or minor reversible injury possible.

FIRE= **0**, Materials that will not burn.

PHYSICAL HAZARD= **0**, Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.

National Fire Protection Association (NFPA)



HEALTH = **1**, Exposure could cause irritation but only minor residual injury even if no treatment is given.

FLAMMABILITY = **0,** Materials that will not burn.

INSTABILITY = **0**, Normally stable, even under fire exposure conditions, and are not reactive with water.

ABBREVIATIONS/ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	**NIF**	No Information Found
BEIs	Biological Exposure Indices	**NIOSH**	National Institute for Occupational Safety and Health
CAS	Chemical Abstracts Service	**NTP**	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	**ORC**	Organization Resources Counselors
CFR	Code of Federal Regulations	**OSHA**	Occupational Safety and Health Administration
CNS	Central Nervous System	**PEL**	Permissible Exposure Limit
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract	**PNOR**	Particulate Not Otherwise Regulated
HMIS	Hazardous Materials Identification System	**PNOC**	Particulate Not Otherwise Classified
IARC	International Agency for Research on Cancer	**PPE**	Personal Protective Equipment
LC50	Median Lethal Concentration	**ppm**	parts per million
LD50	Median Lethal Dose	**RCRA**	Resource Conservation and Recovery Act
LD $_{Lo}$	Lowest Dose to have killed animals or humans	**RTECS**	Registry of Toxic Effects of Chemical Substances
LEL	Lower Explosive Limit	**SARA**	Superfund Amendment and Reauthorization Act
LOEL	Lowest Observed Effect Level	**SCBA**	Self-contained Breathing Apparatus
LOAEC	Lowest Observable Adverse Effect Concentration	**SDS**	Safety Data Sheet
µg/m^3	microgram per cubic meter of air	**STEL**	Short-term Exposure Limit
mg/m^3	milligram per cubic meter of air	**TLV**	Threshold Limit Value
mppcf	million particles per cubic foot	**TWA**	Time-weighted Average
MSHA	Mine Safety and Health Administration	**UEL**	Upper Explosive Limit
NFPA	National Fire Protection Association		

Disclaimer: This information covers AK Steel products as delivered from an AK Steel facility, but does not include chemicals that may be applied by subsequent handlers and/or distributors of the product. This could include a variety of materials including oils, paints, galvanization, etc. that are not included in the Safety Data Sheet (SDS). Additionally, specialty orders may require application of coating materials not listed in this SDS. SDS's for any AK Steel applied specialty coating will be supplied separately. The information in this SDS was obtained from sources or is based upon data which we believe to be reliable; however, the information is provided without any representation or warranty, expressed or implied, regarding the accuracy or correctness of the information or whether other measures may be required under particular conditions. The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. AK Steel expressly disclaims all liability for loss, damage, or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This SDS covers the following AK Steel products:

Hot Rolled Steel includes:

Commercial Quality/Commercial Steel Type B

Commercial quality with Boron/Commercial Steel Type B with Boron

Drawing Quality Special Killed/Drawing Steel Type B

Drawing Quality Special Killed with Boron/Drawing Steel Type B with Boron

Extra Deep Drawing Quality Special Killed/Drawing Steel Type A

Hot Rolled Alloy

High Carbon

Cold Rolled Steel includes:

Commercial Steel Types: A.B.C

Special Killed

Drawing Steel Type B

Extra Deep Drawing Steel

Extra Deep Drawing Steel Plus

Bake Hardenable

Dent Resistant

Rephosphorized Steel

High Strength Low Alloy Steel

Structural Steel

Heat Treatable B Grades

*** Enameling Steel includes:**

Commercial Quality/Commercial Steel

Drawing Quality Special Killed/Drawing Steel

* **Enameling Steel** is a steel product that has been manufactured specifically for the enameling processes, which is applied by clients of AK Steel. AK Steel does not sell an enameled steel product. Enameling Steel is manufactured specifically for UNIVIT, I-F® and VITPlus™ porcelain coatings are applied.

For more description of this product, see the latest edition of AK Steel Corporation Price Book (800)-331-5050.

SAFETY DATA SHEET

Issue Date: 09/14/2020

Section 1. Chemical product and company identification

Product name: **PGL432271 H-GRAY 32271 POL. TGIC**

Product chemistry: Polyester

Material uses: Electrostatic coating for use in industrial plants.

Manufacturer: Vitracoat Pinturas en Polvo s.a. de c.v.
Av. Circuito de la Industria Sur No. 284, Parque Industrial Lerma.
Lerma Edo. De Mex. C.P. 52000

In case of Emergency (Health or Spills): México: (52) 722 26 27000
US: 888-778-5994

After hours: México: (52) 722 26 27000
US: 888-778-5994

Section 2. Hazardous ingredients

CHARACTERISTIC CHEMISTRY: Chemical Mixture

SUBSTANCE	CAS N°	%p/p	ACGIH TLV TWA
Triglycidyl Isocyanurate	2451-62-9	3-5	TWA: 0.05 mg/m³ 8 hours.
2-Mercaptobenzothiazole zinc salt	155-04-4	1-3	Not available

GLOBALLY HARMONIZED SYSTEM

Hazard statement: May cause the following hazards if not properly used (Section 7) and if not the recommended safety equipment (Section 5) is used.

- H303 May be harmful if swallowed
- H317 May cause an allergic skin reaction
- H320 Causes eye irritation
- H333 May be harmful if inhaled
- H335 May cause respiratory irritation
- H340 May cause genetic defects (routes of exposure oral,inhalation)
- H373 May cause damage to organs (respiratory) (if inhaled)

LABEL 2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 3. Hazards identification

Emergency overview

Physical state: Solid. [Powder.]

Odor: Odorless.

Signal word: WARNING!

Hazard statements: HARMFUL IF INHALED OR SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. MAY CAUSE GENETIC DEFECTS.

Precautionary measures : Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Use personal protective equipment as required. Wash thoroughly after handling.

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation: Toxic by inhalation. Slightly irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion: Toxic if swallowed.

Skin: Slightly irritating to the skin. May cause sensitization by skin contact.

Eyes: Severely irritating to eyes. Risk of serious damage to eyes.

Potential chronic health effects

Chronic effects: Contains material that can cause target organ damage. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Target organs: Contains material which causes damage to the following organs: lymphatic system.
Contains material which may cause damage to the following organs: lungs, the nervous system, upper respiratory tract, skin, eyes.

Over-exposure signs/symptoms

Inhalation: Adverse symptoms may include the following:

	respiratory tract irritation coughing
Ingestion	No specific data.
Skin	Adverse symptoms may include the following: Irritation, redness
Eyes	Adverse symptoms may include the following: pain or irritation watering redness
Medical conditions aggravated by overexposure	Pre-existing skin disorders and disorders involving any other target organs mentioned in this SDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Section 4. First aid measures

After contact with eyes:	Check for and remove any contact lenses. Immediately flush eyes with plenty of clean water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
After skin contact:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
After inhalation of material:	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
After ingestion:	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Notes to physician:	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Section 5.-Fire fighting measures

Flammability of the product	Fine dust clouds may form explosive mixtures with air.

Extinguishing media

Suitable	Use dry chemical, CO_2, water spray (fog) or foam.
Not suitable	Do not use water jet.
Special exposure hazards	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, metal oxide/oxides
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

NFPA:
Rate Peligrosidad

Section 6.-Measures accidental release

Personal precautions:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Precautions for environmental protection:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods for cleaning / collecting:	Pick up with vacuum equipment.

Section 7.-Handling and storage

Handling:	Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Avoid the creation of dust when handling and avoid all possible sources

of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Store in a segregated and approved area.
Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers.
Use appropriate containment to avoid environmental contamination.

Section 8.-Exposure limits and personal protective equipment

INGREDIENT	EXPOSURE LIMITS
Triglycidyl Isocyanurate	ACGIH TLV (United States, 3/2012). TWA: 0.05 mg/m³ 8 hours.
2-Mercaptobenzothiazole zinc salt	There are no currently occupational exposure limit values established for this substance.

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards.
Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Appropriate techniques should be used to remove potentially contaminated clothing.
Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Protection of hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Skin protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9 -. Physical and chemical properties

Physical state:	Solid. (powder)	Flash point:	N/A
		Vapor Pressure (20 ° C):	Closed cup: Not applicable.
Auto-ignition temperature:	450 to 600°C (842 to 1112°F)	Flammable limits:	20 - 70 g/m3
Odor:	Odorless	Relative density:	1.2 to 1.9 [ISO 8130-2/-3]N/A
Solubility:	Insoluble in the following materials: cold water and hot water.	Minimum ignition energy (mJ):	5 to 20

Section 10. Stability and reactivity

Chemical Stability: The product is stable.

Conditions to avoid: Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during

transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Triglycidyl Isocyanurate	LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	Rat Rabbit Rat	650 mg/m³ >2000 mg/kg 188 mg/kg	4 hours -- --
2-Mercaptobenzothiazole zinc salt	Not available	Not available	---	---

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Triglycidyl Isocyanurate	Sub-chronic NOAEL Oral Chronic NOAEL OralLD50 Sub-acute NOEL Inhalation Dusts and mists	Rat - Male, Female Rat – Male Mouse - Male, Female	7.32 mg/kg 1.3 mg/kg <100 mg/m³	94 days; 7 days per Hjek 63 weeks 5 days; 6 hours per day

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
Triglycidyl Isocyanurate	Eyes - Severe irritant	Rabbit		4 hours 100 milligrams

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
Triglycidyl Isocyanurate	Skin	Guinea pig	Sensitizing

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Triglycidyl Isocyanurate	Negative - Oral - TD	Rat – Male	4.36 mg/kg	99 weeks; 24 hours per day

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Triglycidyl Isocyanurate	OECD 471 Bacterial Reverse Mutation Test OECD 483 Mammalian Spermatogonial, Chromosome, Aberration Test OECD 478 Genetic Toxicology: Rodent Dominant Lethal Test	Experiment: In vitro Subject: Bacteria Metabolic activation: Metabolic activation +/- Experiment: In vivo Subject: Mammalian-Animal Cell: Germ Experiment: In vitro Subject: Mammalian-Human Cell: Somatic Metabolic activation: Metabolic activation+/- Experiment: In vivo Subject: Mammalian-Animal	Positive Positive Negative Negative

Teratogenicity

Conclusion/Summary: Not available.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Triglycidyl Isocyanurate	-----	Negative	Negative	Rat – Male	Oral	94 days; 7 days per week

Section 12. Ecological information

Ecotoxicity: No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Triglycidyl Isocyanurate	Acute EC50 29 mg/l Fresh water Acute IC50 >100 mg/l Fresh water Acute LC50 >100 mg/l Fresh water	Algae Micro-organism Daphnia	72 hours 3 hours 24 hours
2-Mercaptobenzothiazole zinc salt	None know.		

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Triglycidyl Isocyanurate	OECD 301B Ready Biodegradability - CO_2 Evolution Test	1 % - Not readily - 44 days	----	Activated sludge

Section 13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.
Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated	Not regulated	Not regulated	----		----
TDG Classification	Not regulated	Not regulated	Not regulated	----		----
Mexico Classification	Not regulated	Not regulated	Not regulated	----		----
ADR/RID Class	Not regulated	Not regulated	Not regulated	----		----
IMDG Class	Not regulated	Not regulated	Not regulated	----		----
IATA-DGR Class	Not regulated	Not regulated	Not regulated	----		----

PG*: Packing group

Section 15. Regulatory information

HCS Classification: Toxic material, Irritating material, Sensitizing material, Carcinogen, Target organ effects.

U.S. Federal regulations: **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs)	Not listed
Clean Air Act Section 602: Class I Substances	Not listed
Clean Air Act Section 602: Class II Substances	Not listed
DEA List I Chemicals: (Precursor Chemicals)	Not listed
DEA List II Chemicals: (Essential Chemicals)	Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ: **Not applicable.**

SARA 311/312

Classification: Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of Pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Triglycidyl Isocyanurate	3-5	No	No	No	Yes	Yes

SARA 313

	Product Name	CAS Number	%
Form R - Reporting requirements	No SARA (Superfund Amendments & Reauthorization AC) 313 chemicals are present		

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts	None of the components are listed.
New York	None of the components are listed.
New Jersey	The following components are listed: TRIGLYCIDYL ISOCYANURATE
Pennsylvania	The following components are listed: TRIGLYCIDYL ISOCYANURATE
Canada inventory	Not determined

International regulations

International lists	**Australia inventory (AICS)**: Not determined. **China inventory (IECSC):** Not determined. **Japan inventory:** Not determined. **Korea inventory:** Not determined. **Malaysia Inventory (EHS Register):** Not determined. **New Zealand Inventory of Chemicals (NZIoC):** Not determined. **Philippines inventory (PICCS):** Not determined. **Taiwan inventory (CSNN):** Not determined.
Chemical Weapons: Convention List Schedule I Chemicals	Not listed
Chemical Weapons: Convention List Schedule II Chemicals	Not listed
Chemical Weapons: Convention List Schedule III Chemicals	Not listed

Section 16. Other information

Label requirements	HARMFUL IF INHALED OR SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. MAY CAUSE GENETIC DEFECTS.

Version : 2

Indicates information that has changed from previously issued version. Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Safety Data Sheet
Liquid Nitrogen

Section 1: Product and Company Identification

Cee Kay Supply, Inc
5835 Manchester Avenue
Saint Louis, MO 63110
www.CeeKay.com
(314) 644-3500

Product Code: Liquid Nitrogen

Section 2: Hazards Identification

Warning

Hazard Classification:
Gases Under Pressure

Hazard Statements:
Contains gas under pressure; may explode if heated

Precautionary Statements

Storage:
Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
7727-37-9

Chemical Substance	Chemical Family	Trade Names
NITROGEN, CRYOGENIC LIQUID	Inorganic gases	NITROGEN, REFRIGERATED LIQUID; NITROGEN, REFRIGERATED LIQUID, CRYOGENIC LIQUID; NITROGEN; NITROGEN (LIQUID); LIQUID NITROGEN; UN 1977

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.	Flush eyes with plenty of water. Get medical attention.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Non-flammable. Use suitable extinguishing media for surrounding fire. Cylinders may rupture or explode if exposed to heat.	Non-flammable	▪ Respiratory protection may be needed for frequent or heavy exposure.

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.	No significant effects from contamination expected.	Stop leak if possible without personal risk.

Methods for Cleanup	Other Information
N/A	N/A

Section 7: Handling and Storage

Handling	Storage
Keep separated from incompatible substances. Store and use with adequate ventilation. Store away from heat and flame. Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	Protect containers from physical damage; do not drag, roll, slide or drop. Always use personal protective equipment including, cold insulating clothing, and splash resistant goggles. Close the container valve after each use; keep closed even when empty. Always use hand truck to transport cylinders.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
ACGIH (simple asphyxiant)

Engineering Controls
Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	Wear appropriate protective, cold insulating clothing.	Respiratory protection may be needed for frequent or heavy exposure.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Clear	Colorless	N/A	Liquefied gas	Odorless	Tasteless

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not flammable	Not available	Not available	Nonflammable	Nonflammable	Nonflammable

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-321 F (-196 C)	-346 F (-210 C)	760 mmHg @ -196 C	0.967 (Air=1)	Not applicable	1.6% @ 20 C	Not applicable	Not available	Not applicable	0.01787 cP @ 27 C

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
28.0134	N2	1.2506 g/L	Not available	100%	1	Soluble: Soluble: liquid ammonia Slightly Soluble: alcohol

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Metals, oxidizing materials

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Oxides of nitrogen	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
Not available	Not available	Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma

Eye Irritation	Skin Irritation	Sensitization
Frostbite, blurred vision	Blisters, frostbite	Difficulty breathing

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not hazardous	Not available	Not available	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment

Fish toxicity: Not available Invertibrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Nitrogen, refrigerated liquid	UN1977	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Nitrogen, refrigerated liquid	UN1977	2.2	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	No	No	Yes

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65
Not regulated.

Canadian Regulations

WHMIS Classification
Not determined.

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Not determined.

Section 16: Other Information

NFPA Rating
HEALTH=3 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Safety Data Sheet
Nitrogen

Section 1: Product and Company Identification

Cee Kay Supply, Inc
5835 Manchester Avenue
Saint Louis, MO 63110
www.CeeKay.com
(314) 644-3500

Product Code: Nitrogen

Section 2: Hazards Identification

Warning

Hazard Classification:
Gases Under Pressure

Hazard Statements:
Contains gas under pressure; may explode if heated

Precautionary Statements

Storage:
Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
7727-37-9

Chemical Substance	Chemical Family	Trade Names
NITROGEN, COMPRESSED GAS	Inorganic gases	DIATOMIC NITROGEN; DINITROGEN; NITROGEN; NITROGEN-14; NITROGEN GAS; UN 1066; N2

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Wash exposed skin with soap and water.	Flush eyes with plenty of water.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Non-flammable. Use suitable extinguishing media for surrounding fire. Cylinders may rupture or explode if exposed to heat.	Non-flammable	▪ Respiratory protection may be needed for frequent or heavy exposure.

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.	No significant effects from contamination expected.	Stop leak if possible without personal risk.

Methods for Cleanup	Other Information
N/A	N/A

Section 7: Handling and Storage

Handling	Storage
Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	Keep separated from incompatible substances.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
NITROGEN, COMPRESSED GAS: NITROGEN: ACGIH (simple asphyxiant)

Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Eye protection not required, but recommended.	Protective clothing is not required.	Respiratory protection may be needed for frequent or heavy exposure.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Clear	Colorless	N/A	Gas	Odorless	Tasteless

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not flammable	Not available	Not available	Nonflammable	Nonflammable	Nonflammable

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-321 F (-196 C)	-346 F (-210 C)	760 mmHg @ -196 C	0.967 (Air=1)	Not applicable	1.6% @ 20 C	Not applicable	Not available	Not applicable	0.01787 cP @ 27 C

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
28.0134	N2	1.2506 g/L	Not available	100%	1	Soluble: Liquid ammonia

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Metals, oxidizing materials

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Oxides of nitrogen	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
Not available	Not available	Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma

Eye Irritation	Skin Irritation	Sensitization
Contact with rapidly expanding gas may cause burns or frostbite	No information on significant adverse effects	Difficulty breathing

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not hazardous	Not available	Not available	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Not available Invertibrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Nitrogen, compressed	UN1066	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Nitrogen, compressed	UN1066	2.2	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	No	No	Yes

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65
Not regulated.

Canadian Regulations

WHMIS Classification
A

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Listed on inventory.

Section 16: Other Information

NFPA Rating
HEALTH=1 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Safety Data Sheet
Oxygen

Section 1: Product and Company Identification

Cee Kay Supply, Inc
5835 Manchester Avenue
Saint Louis, MO 63110
www.CeeKay.com
(314) 644-3500

Product Code: Oxygen

Section 2: Hazards Identification

Danger

Hazard Classification:
Gases Under Pressure
Oxidizing Gas (Category 1)

Hazard Statements:
Contains gas under pressure; may explode if heated
May cause or intensify fire; oxidizer

Precautionary Statements
Prevention:
Keep reduction valves/valves and fittings free from oil and grease.
Keep and store away from clothing and combustible materials.

Response:
In case of fire: Stop leak if safe to do so.

Storage:
Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
7782-44-7

Chemical Substance	Chemical Family	Trade Names
OXYGEN, COMPRESSED GAS	Inorganic gases	OXYGEN; DIOXYGEN; MOLECULAR OXYGEN; OXYGEN MOLECULE; PURE OXYGEN; UN 1072; O2

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
None expected	None expected	Not likely route of exposure	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.	None

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Non-flammable. Use extinguishing agent appropriate for the material which is burning. Use water in large quantities for fires involving oxygen.	Oxides of burning material	▪ Respiratory protection may be needed for frequent or heavy exposure. ▪ None

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.	Avoid contact with combustible materials.	Stop leak if possible without personal risk.

Methods for Cleanup	Other Information
Stop leak and ventilate	None

Section 7: Handling and Storage

Handling	Storage
Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	Keep separated from incompatible substances.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
OXYGEN, COMPRESSED GAS: No occupational exposure limits established.

Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Eye protection not required, but recommended.	Protective clothing is not required.	Respiratory protection may be needed for frequent or heavy exposure.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Clear	Colorless	N/A	Gas	Odorless	Tasteless

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not flammable	Not available	Not available	Nonflammable	Nonflammable	Nonflammable

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-297 F (-183 C)	-360 F (-218 C)	760 mmHg @ -183 C	1.1 (Air=1)	Not applicable	3.2% @ 25 C	Not applicable	Not available	Not applicable	0.02075 cP @ 25 C

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
31.9988	O2	1.309 g/L @ 25 C	Not available	Not applicable	Not applicable	Soluble: Alcohol

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Combustible materials, halo carbons, metals, bases, reducing agents, amines, metal salts, oxidizing materials, alkaline earth and alkali metals

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Miscellaneous decomposition products	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
Not established	Not established	Irritation, changes in body temperature, nausea, difficulty breathing, irregular heartbeat, dizziness, disorientation, hallucinations, mood swings, pain in extremities, tremors, lung congestion, convulsions

Eye Irritation	Skin Irritation	Sensitization
No information on significant adverse effects	No information on significant adverse effects	No significant target effects reported.

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not known.	Available.	Available.	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment

Fish toxicity: Not available Invertibrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Low bioaccumulation	Not available

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Oxygen, compressed	UN1072	2.2	Not available	2.2; 5.1	75 kg or L	150 kg	N/A

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Oxygen, compressed	UN1072	2.2; 5.1	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
No	No	Yes	No	Yes

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65
Not regulated.

Canadian Regulations

WHMIS Classification
A,C

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Not determined.

Section 16: Other Information

NFPA Rating
HEALTH=0 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

SAFETY DATA SHEET

Issue Date: 1/3/2019

Section 1. Chemical product and company identification

Product name: **POL. HW ANSI 49 GRAY 5373M**

Product chemistry: Polyester

Material uses: Electrostatic coating for use in industrial plants.

Manufacturer: Vitracoat America
2807 Marina Drive
Elkhart Indiana 46514

In case of Emergency (Health or Spills): México: (52) 722 26 27000
US: 888-778-5994

After hours: México: (52) 722 26 27000
US: 888-778-5994

Section 2. Hazardous ingredients

CHARACTERISTIC CHEMISTRY: Chemical Mixture

SUBSTANCE	CAS N°	%p/p	ACGIH TLV TWA
Triglicidil Isocianurate	2451-62-9	3-5	TWA: 0.05 mg/m³ 8 hours.

GLOBALLY HARMONIZED SYSTEM

Hazard statement: May cause the following hazards if not properly used (Section 7) and if not the recommended safety equipment (Section 5) is used.

- H303 May be harmful if swallowed
- H317 May cause an allergic skin reaction
- H320 Causes eye irritation
- H333 May be harmful if inhaled
- H335 May cause respiratory irritation
- H351 Suspected of causing cancer (if inhaled)
- H373 May cause damage to organs (respiratory) (if inhaled)

LABEL 2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 3. Hazards identification

Emergency overview

Physical state: Solid. [Powder.]

Odor: Odorless.

Signal word: WARNING!

Hazard statements: HARMFUL IF INHALED OR SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. POSSIBLE CANCER HAZARD CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.

Precautionary measures : Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Use personal protective equipment as required. Wash thoroughly after handling.

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation: Toxic by inhalation. Slightly irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion: Toxic if swallowed.

Skin: Slightly irritating to the skin. May cause sensitization by skin contact.

Eyes: Severely irritating to eyes. Risk of serious damage to eyes.

Potential chronic health effects

Chronic effects: Contains material that can cause target organ damage. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Target organs: Contains material which causes damage to the following organs: lymphatic system.
Contains material which may cause damage to the following organs: lungs, the nervous system, upper respiratory tract, skin, eyes.

Over-exposure signs/symptoms

Inhalation: Adverse symptoms may include the following:

	respiratory tract irritation coughing
Ingestion	No specific data.
Skin	Adverse symptoms may include the following: Irritation, redness
Eyes	Adverse symptoms may include the following: pain or irritation watering redness
Medical conditions aggravated by overexposure	Pre-existing skin disorders and disorders involving any other target organs mentioned in this SDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Section 4. First aid measures

After contact with eyes:	Check for and remove any contact lenses. Immediately flush eyes with plenty of clean water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
After skin contact:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
After inhalation of material:	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
After ingestion:	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Notes to physician:	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Section 5.-Fire fighting measures

Flammability of the product	Fine dust clouds may form explosive mixtures with air.

Extinguishing media

Suitable	Use dry chemical, CO_2, water spray (fog) or foam.
Not suitable	Do not use water jet.
Special exposure hazards	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, metal oxide/oxides
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

NFPA:
Rate Peligrosidad

Section 6.-Measures accidental release

Personal precautions:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Precautions for environmental protection:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods for cleaning / collecting:	Pick up with vacuum equipment.

Section 7.-Handling and storage

Handling:	Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Avoid the creation of dust when handling and avoid all possible sources

of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Store in a segregated and approved area.
Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers.
Use appropriate containment to avoid environmental contamination.

Section 8.-Exposure limits and personal protective equipment

INGREDIENT	EXPOSURE LIMITS
Triglicidil Isocianurate	ACGIH TLV (United States, 3/2012). TWA: 0.05 mg/m³ 8 hours.
Matting agent Jietonda	No data available

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards.
Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Appropriate techniques should be used to remove potentially contaminated clothing.
Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Protection of hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Skin protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9 -. Physical and chemical properties

Physical state:	Solid. (powder)	Flash point:	N/A
		Vapor Pressure (20 ° C):	Closed cup: Not applicable.
Auto-ignition temperature:	450 to 600°C (842 to 1112°F)	Flammable limits:	20 - 70 g/m3
Odor:	Odorless	Relative density:	1.2 to 1.9 [ISO 8130-2/-3]N/A
Solubility:	Insoluble in the following materials: cold water and hot water.	Minimum ignition energy (mJ):	5 to 20

Section 10. Stability and reactivity

Chemical Stability: The product is stable.

Conditions to avoid: Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during

transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Triglicidil Isocianurate	LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	Rat Rabbit Rat	650 mg/m³ >2000 mg/kg 188 mg/kg	4 hours -- --
Matting agent Jietonda	Oral: LD50	Rat	>1500 mg/kg	

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Triglicidil Isocianurate	Sub-chronic NOAEL Oral Chronic NOAEL OralLD50 Sub-acute NOEL Inhalation Dusts and mists	Rat - Male, Female Rat – Male Mouse - Male, Female	7.32 mg/kg 1.3 mg/kg <100 mg/m³	94 days; 7 days per Hjek 63 weeks 5 days; 6 hours per day

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
Triglicidil Isocianurate	Eyes - Severe irritant	Rabbit		4 hours 100 milligrams
Matting agent Jietonda	Eye: It may irritate to the eyes [rabbit] Skin: It may irritate slightly to the skin[rabbit]			

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
Triglicidil Isocianurate	Skin	Guinea pig	Sensitizing
Matting agent Jietonda	Skin	Guinea pig, Corium	It may irritate slightly to respiratory or skin.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Triglicidil Isocianurate	Negative - Oral - TD	Rat – Male	4.36 mg/kg	99 weeks; 24 hours per day
Matting agent Jietonda	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.			

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Triglicidil Isocianurate	OECD 471 Bacterial Reverse Mutation Test OECD 483 Mammalian Spermatogonial, Chromosome, Aberration Test	Experiment: In vitro Subject: Bacteria Metabolic activation: Metabolic activation +/- Experiment: In vivo Subject: Mammalian-Animal Cell: Germ Experiment: In vitro	Positive Positive Negative

	OECD 478 Genetic Toxicology: Rodent Dominant Lethal Test	Subject: Mammalian-Human Cell: Somatic Metabolic activation: Metabolic activation+/- Experiment: In vivo Subject: Mammalian-Animal	Negative
Matting agent Jietonda	No data available	No data available	No data available

Teratogenicity

Conclusion/Summary: Not available.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Triglicidil Isocianurate	-----	Negative	Negative	Rat – Male	Oral	94 days; 7 days per week

Section 12. Ecological information

Ecotoxicity: No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Triglicidil Isocianurate	Acute EC50 29 mg/l Fresh water Acute IC50 >100 mg/l Fresh water Acute LC50 >100 mg/l Fresh water	Algae Micro-organism Daphnia	72 hours 3 hours 24 hours

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Triglicidil Isocianurate	OECD 301B Ready Biodegradability - CO_2 Evolution Test	1 % - Not readily - 44 days	----	Activated sludge

Section 13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.
Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated	Not regulated	Not regulated	----		----
TDG Classification	Not regulated	Not regulated	Not regulated	----		----
Mexico Classification	Not regulated	Not regulated	Not regulated	----		----
ADR/RID Class	Not regulated	Not regulated	Not regulated	----		----

IMDG Class	Not regulated	Not regulated	Not regulated	----		----
IATA-DGR Class	Not regulated	Not regulated	Not regulated	----		----

PG*: Packing group

Section 15. Regulatory information

HCS Classification: Toxic material, Irritating material, Sensitizing material, Carcinogen, Target organ effects.

U.S. Federal regulations: **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs): Not listed

Clean Air Act Section 602: Class I Substances: Not listed

Clean Air Act Section 602: Class II Substances: Not listed

DEA List I Chemicals: (Precursor Chemicals): Not listed

DEA List II Chemicals: (Essential Chemicals): Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ: **Not applicable.**

SARA 311/312

Classification: Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of Pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Triglicidil Isocianurate	3-5	No	No	No	Yes	Yes

SARA 313

	Product Name	CAS Number	%
Form R - Reporting requirements	No SARA (Superfund Amendments & Reauthorization AC) 313 chemicals are present		

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts None of the components are listed.
New York None of the components are listed.
New Jersey The following components are listed: TRIGLICIDIL ISOCIANURATE
Pennsylvania The following components are listed: TRIGLICIDIL ISOCIANURATE
Canada inventory Not determined

International regulations

International lists **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory: Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons: Not listed

Convention List Schedule I Chemicals	
Chemical Weapons:	Not listed
Convention List Schedule II Chemicals	
Chemical Weapons:	Not listed
Convention List Schedule III Chemicals	

Section 16. Other information

Label requirements	HARMFUL IF INHALED OR SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.

Version : 2

Indicates information that has changed from previously issued version. Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Revision Number: 004.0

Issue date: 07/21/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: BONDERITE C-IC 2520 ACID DEOXIDIZER known as DEOXIDINE 2520

IDH number: 693244

Product type: Cleaner

Restriction of Use: None identified

Region: United States

Company address:
Henkel AG & Co. KGaA
Henkelstr. 67
Düsseldorf 40589

Contact information:
Telephone: +49 (211) 797 0

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

HAZARD CLASS	HAZARD CATEGORY
SKIN CORROSION	1B
SERIOUS EYE DAMAGE	1

PICTOGRAM(S)

Precautionary Statements

Prevention: Do not breathe vapors, mist, or spray. Wash thoroughly after handling. Wear protective gloves, eye protection, and face protection.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. Immediately call a poison control center or physician. Wash contaminated clothing before reuse.

Storage: Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Nitric acid	7697-37-2	5 - 10

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact: Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Immediate medical treatment necessary. DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Symptoms: See Section 11.

Notes to physician: If cyanosis is severe, intravenous injection of methylene blue, 1 mg/kg body weight, may be of value.

5. FIRE FIGHTING MEASURES

Extinguishing media: Use media appropriate for surrounding material.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Unusual fire or explosion hazards: This product is an aqueous mixture which will not burn.

Hazardous combustion products: Irritating and toxic gases or fumes may be released during a fire.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear appropriate personal protective equipment. Do not allow product to enter sewer or waterways.

Clean-up methods: Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Do not take internally. Wash thoroughly after handling. Do not breathe gas/fumes/vapor/spray.

Storage: Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Do not freeze.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Nitric acid	2 ppm TWA 4 ppm STEL	2 ppm (5 mg/m3) PEL	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1901.134) and ANSI's standard for respiratory protection (Z88.2-1992). A written respiratory protection program, including provisions for medical certification, training, fit-testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage, must be implemented. If concentrations are below the TLV and/or PEL, a NIOSH approved disposable dust/mist respirator may be used for personal comfort. For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-face piece respirator equipped with dust-mist cartridges may be used. For concentrations greater than 10 times the TLV and/or PEL, consult the NIOSH respirator decision logic found in Publication No.87-116 or ANSI Z88.2-1992. Note: ANSI Z88.2-1992 requires the use of a HEPA filter if the particle size distribution of the contaminant is unknown. WARNING! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Chemical resistant, impermeable gloves. The use of butyl rubber gloves is recommended. The use of polyvinyl chloride gloves is recommended. The use of neoprene gloves is recommended. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Colorless, light brown
Odor: Acrid
Odor threshold: Not available.
pH: < 2
Vapor pressure: Not applicable
Boiling point/range: > 200 °F (> 93.3 °C) calculated
Melting point/ range: Not determined
Specific gravity: 1.03 - 1.06
Vapor density: Not applicable
Flash point: Not applicable
Flammable/Explosive limits - lower: Not applicable
Flammable/Explosive limits - upper: Not applicable
Autoignition temperature: Not applicable
Evaporation rate: Not determined
Solubility in water: Complete
Partition coefficient (n-octanol/water): Not determined
VOC content: 0 % (calculated)
Viscosity: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: Will not occur.

Hazardous decomposition products: Decomposes with heat to produce oxides of nitrogen.

Incompatible materials: Oxidizers. May react with acrolein, acrylaldehyde, hydrogen peroxide, nitric acid, and oxidizing agents.

Reactivity: This product may react with strong alkalies.

Conditions to avoid: Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. Inhalation of vapors may cause moderate to severe respiratory tract irritation. This product may be harmful by inhalation.

Skin contact: Contact with liquid may produce severe skin irritation including redness, inflammation and chemical burns.

Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Ingestion: This product may produce corrosive damage to the gastrointestinal tract if it is swallowed. Ingestion of corrosive acids may result in moderately severe burns to mouth and esophagus with more severe burns and damage to the stomach. This product may cause methemoglobinemia characterized by a reduction in oxygen carrying capacity of the blood with symptoms including headache, dizziness, flushed face, fatigue, nausea, vomiting, drowsiness, stupor, tremors, uneven heart action, coma and rarely death.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Nitric acid	Inhalation LC50 (RAT, 30 min) = 334 mg/l Inhalation LC50 (RAT, 30 min) = 244 mg/l Inhalation LC50 (RAT, 30 min) = 138 mg/l Inhalation LC50 (RAT, 4 h) = 65 mg/l	Irritant, Corrosive, Lung, Teeth

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Nitric acid	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: This product, if discarded directly, would be a characteristic RCRA corrosive waste (D002).

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Nitric acid
Hazard class or division: 8
Identification number: UN 2031
Packing group: II
DOT Hazardous Substance(s): Nitric acid

International Air Transportation (ICAO/IATA)

Proper shipping name: Nitric acid
Hazard class or division: 8
Identification number: UN 2031
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: NITRIC ACID
Hazard class or division: 8
Identification number: UN 2031
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: Nitric acid (CAS# 7697-37-2).
CERCLA/SARA Section 311/312: Immediate Health
CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Nitric acid (CAS# 7697-37-2).
CERCLA Reportable quantity: Nitric acid (CAS# 7697-37-2) 1,000 lbs. (454 kg)

California Proposition 65: No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Jennifer Mckay, Regulatory Affairs Specialist

Issue date: 07/21/2014

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SDS ID No.: AM USA - 001

Safety Data Sheet (SDS)

Section 1 – Identification

1(a) Product Identifier used on Label: Hot Rolled or Cold Rolled Steel

1(b) Other means of identification: Refer to Section 16 for product synonyms.

1(c) Recommended use of the chemical and restrictions on use: These products are sold to all steel-consuming industries including automotive, heavy machinery, pipes and tubes, construction, packaging and appliances. The main markets for these products are construction and mechanical engineering, as well as energy and automotive applications.

1(d) Name, address, and telephone number:

ArcelorMittal USA LLC
1 South Dearborn Street
Chicago, IL 60603-9888

Phone number : 219-787-4901 or
email at: msdssupport@arcelormittal.com

1(e) Emergency phone number: 1-760-476-3962 (3E Company Code: 333211) or CHEMTREC (Day or Night): 1-800-424-9300

Section 2 – Hazard(s) Identification

2(a) Classification of the chemical: Hot Rolled or Cold Rolled Steel is considered an article under Reach regulation (REACH REGULATION (EC) No 1907/2006) and is not subject to classification under CLP regulation (REGULATION (EC) No 1272/2008). However, **Hot Rolled or Cold Rolled Steel** is not exempt as an article under OSHA's Hazard Communication Standard (29 CFR 1910.1200) due to its downstream use, thus this product is considered a mixture and a hazardous material. Therefore, the categories of Health Hazards as defined in "GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3" United Nations, New York and Geneva, 2009 have been evaluated. Refer to Section 3, 8 and 11 for additional information.

2(b) Signal word, hazard statement(s), symbols and precautionary statement(s):

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement(s)
	Carcinogenicity - 2 Reproductive Toxicity - 2 Single Target Organ Toxicity (STOT) Repeat Exposure - 1	**Danger**	Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Causes damage to lungs and central nervous system through prolonged or repeated inhalation exposure.
	Skin Sensitization - 1 STOT Single Exposure - 3		May cause an allergic skin reaction. May cause respiratory irritation.
NA	Eye Irritation - 2B		Causes eye irritation.

Precautionary Statement(s):

Prevention	Response	Storage/Disposal
Do not breathe dusts / fume / gas / mist / vapor / spray. Wear protective gloves / protective clothing / eye protection / face protection. Contaminated work clothing must not be allowed out of the workplace. Use only outdoors or in well ventilated areas. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product.	If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed, concerned or feel unwell: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If on skin: Wash with plenty of water. If irritation or rash occurs: Get medical advice/attention. Take off and wash contaminated clothing before reuse. Call a poison center/doctor if you feel unwell.	Dispose of contents in accordance with federal, state and local regulations.

2(c) Hazards not otherwise classified: None Known

2(d) Unknown acute toxicity statement (mixture): None Known

Section 3 – Composition/Information on Ingredients

3(a-c) Chemical name, common name (synonyms), CAS number and other identifiers, and concentration:

Chemical Name	CAS Number	EC Number	% weight
Iron	7439-89-6	231-096-4	95-99.9
Manganese	7439-96-5	231-105-1	0.05-2.45

Section 3 – Composition/Information on Ingredients (continued)

3(a-c) Chemical name, common name (synonyms), CAS number and other identifiers, and concentration (continued):

Chemical Name	CAS Number	EC Number	% weight
Nickel	7440-02-0	231-111-4	0.01-0.42
Silicon	7440-21-3	231-130-8	0.01-3.04
Aluminum	7429-90-5	231-072-3	0.01-1.60

EC - European Community

CAS - Chemical Abstract Service

- Product surfaces may be treated with small amounts of corrosion-inhibiting oil that may contain mineral oil or petroleum distillates, or paints, epoxies, laminates, etc., generally applied at the customer's request. Refer to the coating manufacturer's SDS for hazards associated with coatings.

Section 4 – First-aid Measures

4(a) Description of necessary measures:

- **Inhalation: Hot Rolled or Cold Rolled Steel** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), if inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed, concerned or feel unwell: Get medical advice/attention.
- **Eye Contact: Hot Rolled or Cold Rolled Steel** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), if in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing. If eye irritation persists: Get medical advice attention. If exposed, concerned or feel unwell: Get medical advice/attention.
- **Skin Contact:** If on skin: Wash thoroughly after handling. Wash with plenty of water. If irritation or rash occurs: Get medical advice/attention. Take off and wash contaminated clothing before reuse. If exposed, concerned or feel unwell: Get medical advice/attention.
- **Ingestion: Hot Rolled or Cold Rolled Steel** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), if exposed, concerned or feel unwell: Get medical advice/attention.

4(b) Most important symptoms/effects, acute and delayed (chronic):

- **Inhalation: Hot Rolled or Cold Rolled Steel** as sold/shipped is not likely to present an acute or chronic health effect.
- **Eye: Hot Rolled or Cold Rolled Steel** as sold/shipped is not likely to present an acute or chronic health effect.
- **Skin: Hot Rolled or Cold Rolled Steel** as sold/shipped is not likely to present an acute or chronic health effect.
- **Ingestion: Hot Rolled or Cold Rolled Steel** as sold/shipped is not likely to present an acute or chronic health effect.

However during further processing (welding, grinding, burning, etc.), individual components may illicit an acute or chronic health effect. Refer to Section 11-Toxicological Information.

4(c) Immediate Medical Attention and Special Treatment: None Known

Section 5 – Fire-fighting Measures

5(a) Suitable (and unsuitable) Extinguishing Media: Not Applicable for **Hot Rolled or Cold Rolled Steel** as sold/shipped. Use extinguishers appropriate for surrounding materials.

5(b) Specific Hazards arising from the chemical: Not Applicable for **Hot Rolled or Cold Rolled Steel** as sold/shipped. When burned, toxic smoke, fume and vapor may be emitted.

5(c) Special protective equipment and precautions for fire-fighters: Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: Not Applicable for **Hot Rolled or Cold Rolled Steel** as sold/shipped. For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust.

6(b) Methods and materials for containment and clean up: Not Applicable for **Hot Rolled or Cold Rolled Steel** as sold/shipped. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Section 7 - Handling and Storage

7(a) Precautions for safe handling: Not Applicable for **Hot Rolled or Cold Rolled Steel** as sold/shipped, however further processing (welding, burning, grinding, etc.) with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in well ventilated areas. Practice good housekeeping. Avoid breathing metal fumes and/or dust. Do not eat, drink or smoke when using this product. Cut resistant gloves and sleeves should be worn when working with steel products.

7(b) Conditions for safe storage, including any incompatibilities: Store away from acids and incompatible materials.

Section 8 - Exposure Controls / Personal Protection

8(a) Occupational Exposure Limits (OELs): Hot Rolled or Cold Rolled Steel as sold/shipped in its physical form does not present an inhalation, ingestion or contact hazard, nor would any of the following exposure data apply. However, operations such as burning, welding (high temperature), sawing, brazing, machining, grinding, etc. may produce fumes and/or particulates. The following exposure limits are offered as reference for an experienced industrial hygienist to review.

Ingredients	OSHA PEL [1]	ACGIH TLV [2]	NIOSH REL [3]	IDLH [4]
Iron	10 mg/m³ (as iron oxide fume)	5.0 mg/m³ (as iron oxide dust and fume)	5.0 mg/m³ (as iron oxide dust and fume)	2,500 mg Fe/m³
Manganese	(C) 5.0 mg/m³ (as Fume & Mn compounds)	0.2 mg/m³	(C) 5.0 mg/m³ 1.0 mg/m³ (as fume) (STEL) 3.0 mg/m³	500 mg Mn/m³
Nickel	1.0 mg/m³ (as Ni metal & insoluble compounds)	1.5 mg/m³ (as inhalable fraction[5] Ni metal) 0.2 mg/m³ (as inhalable fraction Ni inorganic only insoluble and soluble compounds)	0.015 mg/m³ (as Ni metal & insoluble and soluble compounds)	10 mg/m³ (as Ni)
Silicon	15 mg/m³ (total dust, PNOR[6]) 5.0 mg/m³ (as respirable fraction, PNOR)	10 mg/m³	10 mg/m³ (as total dust) 5.0 mg/m³ (as respirable dust)	NE
Aluminum	15 mg/m³ (total dust, PNOR) 5.0 mg/m³ (as respirable fraction, PNOR)	1.0 mg/m³	10 mg/m³ (as total dust) 5.0 mg/m³ (as respirable dust)	NE

NE - None Established

1. OSHA Permissible Exposure Limits (PELs) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A (C) designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Peak is defined as the acceptable maximum peak for a maximum duration above the ceiling concentration for an eight-hour shift. A skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday. An Action level (AL) is used by OSHA and NIOSH to express a health or physical hazard. They indicate the level of a harmful or toxic substance/activity, which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring. Action Levels are generally set at one half of the PEL but the actual level may vary from standard to standard. The intent is to identify a level at which the vast majority of randomly sampled exposures will be below the PEL.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as the maximum concentration to which workers can be exposed for a short period of time (15 minutes) for only four times throughout the day with at least one hour between exposures. A "skin" notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. ACGIH-TLVs are only recommended guidelines based upon consensus agreement of the membership of the ACGIH. As such, the ACGIH TLVs are for guideline use purposes and are not legal regulatory standards for compliance purposes. The TLVs are designed for use by individuals trained in the discipline of industrial hygiene relative to the evaluation of exposure to various chemical or biological substances and physical agents that may be found in the workplace.
3. The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH-REL) - Compendium of Policy and Statements. NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970's by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994.
5. Inhalable fraction. The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2014 TLVs ® and BEIs ® (Biological Exposure Indices) Appendix D, paragraph A.
6. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by a limit which is the same as the inert or nuisance dust limit of 15 mg/m³ for total dust and 5 mg/m³ for the respirable fraction.

8(b) Appropriate Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes and dusts during handling operations. Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust is necessary for use in enclosed or confined spaces. Provide sufficient general/local exhaust ventilation in pattern/volume to control inhalation exposures below current exposure limits.

8(c) Individual Protection Measures:

- **Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use only a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self-contained ….

Section 8 - Exposure Controls / Personal Protection (continued)

8(c) Individual Protection Measures (continued):

- **Respiratory Protection (continued):** …breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (Immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

  Warning! Air-purifying respirators both negative-pressure, and powered-air do not protect workers in oxygen-deficient atmospheres.
- **Eyes**: Wear appropriate eye protection to prevent eye contact. For operations which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use safety glasses to prevent eye contact. Contact lenses should not be worn where industrial exposures to this material are likely. Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.
- **Skin**: Wear appropriate personal protective clothing to prevent skin contact. Cut resistant gloves and sleeves should be worn when working with steel products. For operations which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use protective clothing, and gloves to prevent skin contact. Protective gloves should be worn as required for welding, burning or handling operations. Contaminated work clothing must not be allowed out of the workplace.
- **Other protective equipment**: An eyewash fountain and deluge shower should be readily available in the work area.

Section 9 - Physical and Chemical Properties

9(a) Appearance (physical state, color, etc.): Solid, Metallic Gray

9(b) Odor: Odorless

9(c) Odor Threshold: NA

9(d) pH: NA

9(e) Melting Point/Freezing Point: ~2750 ºF (~1510 C)

9(f) Initial Boiling Point and Boiling Range: ND

9(g) Flash Point: NA

9(h) Evaporation Rate: NA

9(i) Flammability (solid, gas): Non-flammable, non-combustible

9(j) Upper/lower Flammability or Explosive Limits: NA

9(k) Vapor Pressure: NA

9(l) Vapor Density (Air = 1): NA

9(m) Relative Density: 7.85

9(n) Solubility(ies): Water Insoluble

9(o) Partition Coefficient n-octanol/water: ND

9(p) Auto-ignition Temperature: NA

9(q) Decomposition Temperature: ND

9(r) Viscosity: NA

NA - Not Applicable
ND - Not Determined for product as a whole

Section 10 - Stability and Reactivity

10(a) Reactivity: Not Determined (ND) for product in a solid form. Do not use water on molten metal.

10(b) Chemical Stability: Steel products are stable under normal storage and handling conditions.

10(c) Possibility of hazardous reaction: None Known

10(d) Conditions to Avoid: Storage with strong acids or calcium hypochlorite

10(e) Incompatible Materials: Will react with strong acids to form hydrogen. Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.

10(f) Hazardous Decomposition Products: Thermal oxidative decomposition of steel products can produce fumes containing oxides of iron and manganese as well as other alloying elements.

Section 11 - Toxicological Information

11 Information on toxicological effects: The following toxicity data has been determined for **Hot or Cold Rolled Steel** when further processed using the information available for its components applied to the guidance on the preparation of an SDS under the GHS requirements of OSHA and the EU CPL.

Hazard Classification	Hazard Category		Hazard Symbols	Signal Word	Hazard Statement
	EU	OSHA			
Eye Damage/ Irritation (covers Categories 1, 2A and 2B)	NA*	2B[c]	No Pictogram	**Warning**	Causes eye irritation - Rating due to iron particulate generated from further processing (welding, grinding, burning, etc.).
Skin/Dermal Sensitization (covers Category 1)	NA*	1[d]		**Warning**	May cause an allergic skin reaction. - Nickel is a skin sensitizer.
Carcinogenicity (covers Categories 1A, 1B and 2)	NA*	2[g]		**Warning**	Suspected of causing cancer. - Rating due to nickel particulate or fume that can enter the body generated when further processed (welding, grinding, burning, etc.).
Toxic Reproduction (covers Categories 1A, 1B and 2)	NA*	2[h]		**Warning**	Suspected of damaging fertility or the unborn child. - Rating due to nickel particulate or fume that can enter the body generated when further processed (welding, grinding, burning, etc.).

Section 11 - Toxicological Information (continued)

11 Information on toxicological effects (continued):

Hazard Classification	Hazard Category		Hazard Symbols	Signal Word	Hazard Statement
	EU	OSHA			
Specific Target Organ Toxicity (STOT) Following Single Exposure (covers Categories 1-3)	NA*	3[i]		**Warning**	May cause respiratory irritation. - Rating due to iron particulate or fume that can enter the body generated when further processed (welding, grinding, burning, etc.).
STOT following Repeated Exposure (covers Categories 1 and 2)	NA*	1[j]		**Danger**	Causes damage to lungs and central nervous system through prolonged or repeated inhalation exposure. - Rating due to nickel or manganese particulate or fume that can enter the body generated when further processed (welding, grinding, burning, etc.).

* Not Applicable - Semi-formed steel products are considered articles under Reach regulation (REACH REGULATION (EC) No 1907/2006) and are not subject to classification under CLP regulation (REGULATION (EC) No 1272/2008).

Toxicological data listed below are presented regardless to classification criteria. Individual hazard classification categories where the toxicological information has met or exceeded a classification criteria threshold are listed above.

a. No LC_{50} or LD_{50} has been established for **Hot Rolled or Cold Rolled Steel**. The following data has been determined for the components:

- **Iron:** Rat LD_{50} =98.6 g/kg (REACH)
  Rat LD_{50} =1060 mg/kg (IUCLID)
  Rat LD_{50} =984 mg/kg (IUCLID)
  Rabbit LD_{50} =890 mg/kg (IUCLID)
  Guinea Pig LD_{50} =20 g/kg (TOXNET)
- **Silicon:** L_{D50} = 3160 mg/kg (Oral/Rat)
- **Aluminum:** Rat LD_{50} > 15.9 g/kg (REACH)
- **Nickel:** LD_{50} >9000 mg/kg (Oral/Rat)
- **Manganese:** Rat LD_{50} > 2000 mg/kg (REACH)
  Rat LD_{50} > 9000 mg/kg (NLM Toxnet)

b. No Skin (Dermal) Irritation data available for **Hot Rolled or Cold Rolled Steel** as a mixture or its individual components.

c. No Eye Irritation data available for **Hot Rolled or Cold Rolled Steel** as a mixture. The following Eye Irritation information was found for the components:

- **Iron:** Causes eye irritation.
- **Silicon:** Slight eye irritation in rabbit protocol.
- **Nickel:** Slight eye irritation from particulate abrasion only.

d. No Skin (Dermal) Sensitization data available **for Hot Rolled or Cold Rolled Steel** as a mixture. The following Skin (Dermal) Sensitization information was found for the components:

- **Nickel:** May cause allergic skin sensitization.

e. No Respiratory Sensitization data available for **Hot Rolled or Cold Rolled Steel** as a mixture or its components.

f. No Germ Cell Mutagenicity data available for **Hot Rolled or Cold Rolled Steel** as a mixture. The following Mutagenicity and Genotoxicity information was found for the components:

- **Iron:** IUCLID has found some positive and negative findings in vitro.
- **Nickel:** EU RAR has found positive results in vitro and in vivo but insufficient data for classification.
- **Aluminum:** IUCLID; ATSDR have found this ingredient is not mutagenic *in vitro*; but has marginal effects *in vivo.*

g. Carcinogenicity: IARC, NTP, and OSHA do not list **Hot Rolled or Cold Rolled Steel** as carcinogens. The following Carcinogenicity information was found for the components:

- **Welding Fumes -** IARC Group 2B carcinogen, a mixture that is possibly carcinogenic to humans.
- **Nickel and certain nickel compounds –** Group 2B - metallic nickel Group 1 - nickel compounds ACGIH confirmed human carcinogen. Nickel – EURAR Insufficient evidence to conclude carcinogenic potential in animals or humans; suspect carcinogen classification Category 2 Suspected of causing cancer.

h. No Toxic Reproduction data available for **Hot Rolled or Cold Rolled Steel** as a mixture. The following Toxic Reproductive information was found for the components:

- **Nickel**: Effects on fertility.

i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **Hot Rolled or Cold Rolled Steel** as a mixture. The following STOT following a Single Exposure data was found for the components:

- **Iron**: Irritating to Respiratory tract.

j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **Hot Rolled or Cold Rolled Steel** as a whole. The following STOT following Repeated Exposure data was found for the components:

- **Nickel**: Rat 4 wk inhalation LOEL 4 mg/m^3 Lung and Lymph node histopathology. Rat 2 yr inhalation LOEL 0.1 mg/ m^3 Pigment in kidney, effects on hematopoiesis spleen and bone marrow and adrenal tumor. Rat 13 Week Inhalation LOAEC 1.0 mg/m^3 Lung weights, and Alveolar histopathology.
- **Manganese**: Inhalation of metal fumes - Degenerative changes in human Brain; Behavioral: Changes in motor activity and muscle weakness (Whitlock *et al.,* 1966).
- **Aluminum**: Repeated exposure associated with Asthma, fibrosis in lungs and encephalopathy in humans. Reviews have found chronic exposure to aluminum flake has been reported to cause pneumoconiosis in workers. Repeat oral exposure to aluminum results in decrements in neurobehavioral function and development.

Section 11 - Toxicological Information (continued)

11 Information on toxicological effects (continued):

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2009, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS), European Union Classification, Labeling and Packaging. (EU CPL), Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), International Uniform Chemical Information Database (IUCLID), TOXicology Data NETwork (TOXNET), European Risk Assessment Reports (EU RAR).

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s) and potential resultant components from further processing:

Acute Effects:

- **Inhalation:** Excessive exposure to high concentrations of metal dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 micrometer and usually between 0.02-0.05 micrometers from many metals can produce an acute reaction known as “metal fume fever”. Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. The symptoms come on in a few hours after excessive exposures and usually last from 12 to 48 hours. Long-term effects from metal fume fever have not been noted. Freshly formed oxide fumes of manganese have been associated with causing metal fume fever.
- **Eye:** Excessive exposure to high concentrations of metal dust may cause irritation to the eyes.
- **Skin:** Skin contact with metal dusts may cause irritation or sensitization, possibly leading to dermatitis. Skin contact with metallic fumes and dusts may cause physical abrasion.
- **Ingestion:** Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of metal dust may cause nausea or vomiting.

Acute Effects by component:

- **Iron and iron oxides:** Iron is harmful if swallowed, causes skin irritation, and causes eye irritation. Contact with iron oxide has been reported to cause skin irritation and serious eye damage. Particles of iron or iron compounds, which become imbedded in the eye, may cause rust stains unless removed fairly promptly.
- **Manganese and manganese oxides:** Manganese and Manganese oxide are harmful if swallowed.
- **Nickel and nickel oxides:** Nickel may cause allergic skin sensitization. Nickel oxide may cause an allergic skin.
- **Silicon and silicon oxides:** May be harmful if swallowed.
- **Aluminum and aluminum oxides :** Not Reported/ Not Classified

Delayed (chronic) Effects by component:

- **Iron and iron oxides**: Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign pneumoconiosis, called siderosis, which is observable as an X-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Iron oxide is listed as a Group 3 (not classifiable) carcinogen by the International Agency for Research on Cancer (IARC).
- **Manganese and manganese oxides:** Chronic exposure to high concentrations of manganese fumes and dusts may adversely affect the central nervous system with symptoms including languor, sleepiness, weakness, emotional disturbances, spastic gait, mask-like facial expression and paralysis. Animal studies indicate that manganese exposure may increase susceptibility to bacterial and viral infections. Occupational overexposure (Manganese) is a progressive, disabling neurological syndrome that typically begins with relatively mild symptoms and evolves to include altered gait, fine tremor, and sometimes, psychiatric disturbances. May cause damage to lungs with repeated or prolonged exposure. Neurobehavioral alterations in worker populations exposed to manganese oxides include: speed and coordination of motor function are especially impaired.
- **Nickel and nickel oxides:** Exposure to nickel dusts and fumes can cause sensitization dermatitis, respiratory irritation, asthma, pulmonary fibrosis, edema, and may cause nasal or lung cancer in humans. Nickel causes damage to lungs through prolonged or repeated inhalation exposure. IARC lists nickel and certain nickel compounds as Group 2B carcinogens (sufficient animal data). ACGIH 2014 TLVs® and BEIs® lists insoluble nickel compounds as confirmed human carcinogens. Nickel is suspected of damaging the unborn child.
- **Silicon and silicon oxides:** Silicon dusts are a low health risk by inhalation and should be treated as a nuisance dust. Eye contact with pure material can cause particulate irritation. Skin contact with silicon dusts may cause physical abrasion.
- **Aluminum and Aluminum oxides**: Chronic inhalation of finely divided powder has been reported to cause pulmonary fibrosis and emphysema. Repeated skin contact has been associated with bleeding into the tissue, delayed hypersensitivity and granulomas. Chronic exposure to aluminum flake has been reported to cause pneumoconiosis in workers. Repeat oral exposure to aluminum results in decrements in neurobehavioral function and development.

Section 12 - Ecological Information

12(a) Ecotoxicity (aquatic & terrestrial): No Data Available for **Hot Rolled or Cold Rolled Steel** as sold/shipped. However, individual components of the product when processed have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife as follows:

- **Iron Oxide**: LC_{50}: >1000 mg/L; Fish 48 h-EC_{50} > 100 mg/L (Currenta, 2008k); 96 h-$LC_0 \geq$ 50,000 mg/L Test substance: Bayferrox 130 red (95 – 97% Fe_2O_3; < 4% SiO_2 and Al_2O_3) (Bayer, 1989a).
- **Nickel Oxide:** IUCLID found LC_{50} in fish, invertebrates and algae > 100 mg/l.

12(b) Persistence & Degradability: No Data Available for **Hot Rolled or Cold Rolled Steel** as sold/shipped or individual components.

Section 12 - Ecological Information (continued)

12(c) Bioaccumulative Potential: No Data Available for **Hot Rolled or Cold Rolled Steel** as sold/shipped or individual components.

12(d) Mobility (in soil): No data available for **Hot Rolled or Cold Rolled Steel** as sold/shipped. However, individual components of the product have been found to be absorbed by plants from soil.

12(e) Other adverse effects: None Known

Additional Information:

Hazard Category: Not Reported **Signal Word:** No Signal Word

Hazard Symbol: No Symbol

Hazard Statement: No Statement

Section 13 - Disposal Considerations

Disposal: Steel scrap should be recycled whenever possible. Product dusts and fumes from processing operations should also be recycled, or classified by a competent environmental professional and disposed of in accordance with applicable federal, state or local regulations.

Container Cleaning and Disposal: Follow applicable federal, state and local regulations. Observe safe handling precautions. European Waste Catalogue (EWC): 16-01-17 (ferrous metals), 12-01-99 (wastes not otherwise specified), 16-03-04 (off specification batches and unused products), or 15-01-04 (metallic packaging).

Please note this information is for Hot Rolled or Cold Rolled Steel in its original form. Any alterations can void this information.

Section 14 - Transport Information

14 (a-g) Transportation Information:

US Department of Transportation (DOT) under 49 CFR 172.101 **does not** regulate **Hot Rolled or Cold Rolled Steel** as a hazardous material. All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

Shipping Name: Not Applicable (NA) **Shipping Symbols:** NA **Hazard Class:** NA **UN No.:** NA **Packing Group:** NA **DOT/ IMO Label:** NA **Special Provisions (172.102):** NA	**Packaging Authorizations** **a) Exceptions:** NA **b) Group:** NA **c) Authorization:** NA	**Quantity Limitations** **a) Passenger, Aircraft, or Railcar:** NA **b) Cargo Aircraft Only:** NA **Vessel Stowage Requirements** **a) Vessel Stowage:** NA **b) Other:** NA **DOT Reportable Quantities**: NA

International Maritime Dangerous Goods (IMDG) and the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) classification, packaging and shipping requirements follow the US DOT Hazardous Materials Regulation.

Regulations Concerning the International Carriage of Dangerous Goods by Road (ADR) does not regulate **Hot Rolled or Cold Rolled Steel** as a hazardous material.

Shipping Name: Not Applicable (NA) **Classification Code:** NA **UN No.:** NA **Packing Group:** NA **ADR Label:** NA **Special Provisions:** NA **Limited Quantities:** NA	**Packaging** **a) Packing Instructions:** NA **b) Special Packing Provisions:** NA **c) Mixed Packing Provisions:** NA	**Portable Tanks & Bulk Containers** **a) Instructions:** NA **b) Special Provisions:** NA

International Air Transport Association (IATA) does not regulate **Hot Rolled or Cold Rolled Steel** as a hazardous material.

Shipping Name: Not Applicable (NA) **Class/Division:** NA **Hazard Label (s):** NA **UN No.:** NA **Packing Group:** NA **Excepted Quantities (EQ):** NA	**Passenger & Cargo Aircraft** **Limited Quantity (EQ)**		**Cargo Aircraft Only** **Pkg Inst:** NA **Max Net Qty/Pkg:** NA	**Special Provisions:** NA **ERG Code:** NA
	Pkg Inst: NA **Max Net Qty/Pkg:** NA	**Pkg Inst:** NA **Max Net Qty/Pkg:** NA		

Pkg Inst – Packing Instructions Max Net Qty/Pkg – Maximum Net Quantity per Package ERG – Emergency Response Drill Code

Transport Dangerous Goods (TDG) Classification: Hot Rolled or Cold Rolled Steel does not have a TDG classification.

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to an ArcelorMittal product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

This product and/or its constituents are subject to the following regulations:

OSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product, **Hot Rolled or Cold Rolled Steel** as a whole is not listed. However, individual components of the product are listed: Refer to Section 8, Exposure Controls and Personal Protection.

EPA Regulations: The product, **Hot Rolled or Cold Rolled Steel** is not listed as a whole. However, individual components of the product are listed:

Components	Regulations
Manganese	CAA, SARA 313, SDWA
Nickel	CAA, CERCLA, CWA, SARA 313
Aluminum	SARA 313

SARA Potential Hazard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard.

Section 313 Supplier Notification: The product, **Hot Rolled or Cold Rolled Steel** contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act and 40 CFR part 372:

CAS #	Chemical Name	Percent by Weight
7439-96-5	Manganese	2.5 max
7440-02-0	Nickel	1.8 max
7429-90-5	Aluminum	1.60

Regulations Key:

CAA	Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06])
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (42 USC Secs. 9601(14), 9603(a); 40 CFR Sec. 302.4, Table 302.4, Table 302.4 and App. A)
CWA	Clean Water Act (33 USC Secs. 1311; 1314(b), (c), (e), (g); 136(b), (c); 137(b), (c) [as of 8/2/06])
RCRA	Resource Conservation Recovery Act (42 USC Sec. 6921; 40 CFR Part 261 App VIII)
SARA	Superfund Amendments and Reauthorization Act of 1986 Title III Section 302 Extremely Hazardous Substances (42 USC Secs. 11023, 13106; 40 CFR sec. 372.65) and Section 313 Toxic Chemicals (42 USC secs. 11023, 13106; 40 CFR Sec. 372.65 [as of 6/30/05])
TSCA	Toxic Substance Control Act (15 U.S.C. s/s 2601 et seq. [1976])
SDWA	Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. [1974])

State Regulations: The product, **Hot Rolled or Cold Rolled Steel** as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

Pennsylvania Right to Know: Contains regulated material in the following categories:

- Hazardous Substances: Aluminum, Manganese, Nickel and Silicon
- Environmental Hazards: Aluminum, Manganese and Nickel
- Special Hazardous Substance: Nickel

California Prop. 65: Contains elements known to the State of California to cause cancer or reproductive toxicity. This includes Nickel.

New Jersey: Contains regulated material in the following categories:

- Hazardous Substance: Aluminum, Manganese, Molybdenum, Silicon, and Nickel
- Environmental Hazards: Manganese and Nickel
- Special Hazardous Substance: Aluminum. Manganese and Silicon

Minnesota: Manganese, and Nickel

Massachusetts: Aluminum, Manganese, Silicon and Nickel

Other Regulations:

WHMIS Classification (Canadian): The product, **Hot Rolled or Cold Rolled Steel** is not listed as a whole. However individual components are listed.

Ingredients	WHMIS Classification
Manganese	Reproductive toxicity - Category 2, Specific target organ toxicity - repeated exposure - Category 1, Combustible dusts
Nickel	Skin sensitization – Category 1, Carcinogenicity – Category 2, Specific target organ toxicity – repeated exposure - Category 1
Silicon	Flammable solids - Category 2, Combustible dusts

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Prepared By: ArcelorMittal USA LLC

Original Issue Date: 8/26/2002 **Revised Date:** 01/01/2016

Section 16 - Other Information (continued)

Additional Information:

Hazardous Material Identification System (HMIS) Classification

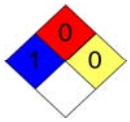
Health Hazard	1
Fire Hazard	0
Physical Hazard	0

HEALTH= **1**, Denotes possible chronic hazard if airborne dusts or fumes are generated Irritation or minor reversible injury possible.

FIRE= **0**, Materials that will not burn.

PHYSICAL HAZARD= **0**, Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.

National Fire Protection Association (NFPA)



HEALTH = **1**, Exposure could cause irritation but only minor residual injury even if no treatment is given.

FLAMMABILITY = **0,** Materials that will not burn.

INSTABILITY = **0**, Normally stable, even under fire exposure conditions, and are not reactive with water.

ABBREVIATIONS/ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	**NIF**	No Information Found
BEIs	Biological Exposure Indices	**NIOSH**	National Institute for Occupational Safety and Health
CAS	Chemical Abstracts Service	**NTP**	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	**ORC**	Organization Resources Counselors
CLP	Classification, Labelling and Packaging	**OSHA**	Occupational Safety and Health Administration
CFR	Code of Federal Regulations	**PEL**	Permissible Exposure Limit
CNS	Central Nervous System	**PNOR**	Particulate Not Otherwise Regulated
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract	**PNOC**	Particulate Not Otherwise Classified
HMIS	Hazardous Materials Identification System	**PPE**	Personal Protective Equipment
IARC	International Agency for Research on Cancer	**ppm**	parts per million
LC50	Median Lethal Concentration	**RCRA**	Resource Conservation and Recovery Act
LD50	Median Lethal Dose	**REACH**	Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals
LD_{Lo}	Lowest Dose to have killed animals or humans	**RTECS**	Registry of Toxic Effects of Chemical Substances
LEL	Lower Explosive Limit	**SARA**	Superfund Amendment and Reauthorization Act
LOEL	Lowest Observed Effect Level	**SCBA**	Self-contained Breathing Apparatus
LOAEC	Lowest Observable Adverse Effect Concentration	**SDS**	Safety Data Sheet
$\mu g/m^3$	microgram per cubic meter of air	**STEL**	Short-term Exposure Limit
mg/m^3	milligram per cubic meter of air	**TLV**	Threshold Limit Value
mppcf	million particles per cubic foot	**TWA**	Time-weighted Average
MSHA	Mine Safety and Health Administration	**UEL**	Upper Explosive Limit
NFPA	National Fire Protection Association		

Products covered for Hot Rolled or Cold Rolled Steel include:

Cold Rolled Steel	Cold Rolled Full Hard Steel
Cold Rolled Enameling Steel	Cold Rolled Carbon Steel
Cold Rolled HSLA Steel	Cold Rolled Motor Lamination Steel
Hot Rolled Carbon Steel	Floor Plate
Hot Rolled HSLA Steel	Advanced High Strength Steel (AHSS)/TRIP
Bake Hard	High Strength Low Alloy (HSLA)
Low Carbon	Ultra High Strength (UHSS)
Ultra Low Carbon (ULC)	Advanced High Strength (AHSS)
Structural	

Hot Rolled or Cold Rolled Steel

Signal Word: **DANGER**

Symbols: 

HAZARD STATEMENTS:

Causes eye irritation.
May cause an allergic skin reaction.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
May cause respiratory irritation.
Causes damage to lungs and central nervous system through prolonged or repeated inhalation exposure.

PRECAUTIONARY STATEMENTS

Do not breathe dusts / fume / gas / mist / vapor / spray.
Wear protective gloves / protective clothing / eye protection / face protection.
Contaminated work clothing must not be allowed out of the workplace.
Use only outdoors or in well ventilated areas.
Wash thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not eat, drink or smoke when using this product.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If exposed, concerned or feel unwell: Get medical advice/attention.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing.
If on skin: Wash with plenty of water. If irritation or rash occurs: Get medical advice/attention. Take off and wash contaminated clothing before reuse.
Call a poison center/doctor if you feel unwell.
Dispose of contents in accordance with federal, state and local regulations.

SDS ID No.: AM USA - 001

ArcelorMittal USA LLC
1 South Dearborn Street
Chicago, IL 60603-9888

General Information: Phone: 219-787-4901 or email at: msdssupport@arcelormittal.com

CHEMTREC (Day or Night): 1-800-424-9300

Emergency Contact: 1-760-476-3962, (3E Company Code: 333211)

Original Issue Date: 8/26/2002 **Revised:** 01/01/2016

Material Safety Data Sheet

Revision Number: 002.1 **Issue date:** 06/24/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **BONDERITE C-IC PURGE 2510 SCALE REMOVER known as PARCO PURGE 2510**
IDH number: 593872
Product type: Cleaner
Region: United States

Company address:
Henkel Corporation
32100 Stephenson Highway
Madison Heights, MI 48071

Contact information:
Telephone: 248.583.9300
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state:	Liquid	**HEALTH:**	3
Color:	Light yellow	**FLAMMABILITY:**	0
Odor:	Sharp	**PHYSICAL HAZARD:**	0
		Personal Protection:	See MSDS Section 8

DANGER–CORROSIVE!: CAUSES EYE, SKIN, DIGESTIVE TRACT, AND RESPIRATORY TRACT BURNS.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. Inhalation of mists or vapors may produce upper airway edema, wheezing, pulmonary edema, pneumonitis and respiratory failure.

Skin contact: Corrosive to the skin. Contact with the skin or mucous membranes may cause severe irritation and burns.

Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Ingestion: This product may be fatal if it is swallowed. This product may produce corrosive damage to the gastrointestinal tract if it is swallowed.

Existing conditions aggravated by exposure: Pre-existing skin, eye and respiratory allergies.

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Hydrochloric acid	7647-01-0	30 - 60

4. FIRST AID MEASURES

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact: Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention. Launder contaminated clothing before reuse.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Immediate medical treatment necessary. DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.

5. FIRE FIGHTING MEASURES

Flash point: Not applicable

Autoignition temperature: Not available

Flammable/Explosive limits - lower: Not applicable

Flammable/Explosive limits - upper: Not applicable

Extinguishing media: Use media appropriate for surrounding material.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Unusual fire or explosion hazards: This product is an aqueous mixture which will not burn.

Hazardous combustion products: Upon combustion, oxides of chlorine may be released.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear suitable protective clothing, gloves and eye/face protection.

Clean-up methods: Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations. Ventilate area.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Do not breathe gas/fumes/vapor/spray. Wash thoroughly after handling. Provide adequate ventilation. Do not take internally. For industrial use only.

Storage: Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Hydrochloric acid	2 ppm Ceiling	5 ppm (7 mg/m3) Ceiling	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Light yellow
Odor:	Sharp
Odor threshold:	Not available
pH:	< 1
Vapor pressure:	Not determined
Boiling point/range:	> 100 °C (> 212°F)
Melting point/ range:	Not available
Specific gravity:	1.1 - 1.2
Vapor density:	Not determined
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not applicable
Flammable/Explosive limits - upper:	Not applicable
Autoignition temperature:	Not available
Evaporation rate:	Not available
Solubility in water:	Complete
Partition coefficient (n-octanol/water):	Not available
VOC content:	Not applicable

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: None under normal processing.

Hazardous decomposition products: Upon combustion, oxides of chlorine may be released.

Incompatible materials: This product may react with strong alkalies. Do not mix with chlorates.

Conditions to avoid: Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Hydrochloric acid	No	No	No

Hazardous components	Health Effects/Target Organs
Hydrochloric acid	Irritant, Corrosive, Kidney

12. ECOLOGICAL INFORMATION

Ecological information: No data available. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

Hazardous waste number: This product, if discarded directly, would be a characteristic RCRA corrosive waste (D002).

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Hydrochloric acid
Hazard class or division: 8
Identification number: UN 1789
Packing group: II
DOT Reportable quantity: Hydrochloric acid

International Air Transportation (ICAO/IATA)

Proper shipping name: Hydrochloric acid
Hazard class or division: 8
Identification number: UN 1789
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: HYDROCHLORIC ACID
Hazard class or division: 8
Identification number: UN 1789
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification: None above reporting de minimus

CERCLA/SARA Section 302 EHS: Hydrochloric acid (CAS# 7647-01-0).
CERCLA/SARA Section 311/312: Immediate Health
CERCLA/SARA 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Hydrochloric acid (CAS# 7647-01-0).
CERCLA Reportable quantity: Hydrochloric acid (CAS# 7647-01-0) 5,000 lbs. (2,270 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class: E, D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Jennifer Mckay, Regulatory Affairs Specialist

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation does not assume responsibility for any results obtained by persons over whose methods Henkel Corporation has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Henkel Corporation's products. In light of the foregoing, Henkel Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

Material Safety Data Sheet

Revision Number: 001.2 **Issue date:** 11/30/2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **BONDERITE C-NE 5175 NEUTRAL CLEANER known as P3 NEUTRACARE 5175**
IDH number: 1265623
Product type: Cleaner
Region: United States

Company address:
Henkel Corporation
32100 Stephenson Highway
Madison Heights, MI 48071

Contact information:
Telephone: 248.583.9300
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state:	Liquid	**HEALTH:**	2
Color:	Yellow	**FLAMMABILITY:**	0
Odor:	Ammoniacal	**PHYSICAL HAZARD:**	0
		Personal Protection:	See MSDS Section 8

WARNING: CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: Inhalation of vapors or mists of the product may be irritating to the respiratory system.
Skin contact: This product may cause irritation to the skin.
Eye contact: This product is severely irritating to the eyes.
Ingestion: Ingestion of this product is unlikely. However, ingestion of product may produce gastrointestinal irritation and disturbances.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Inorganic phosphate	Proprietary	10 - 30
Amine borate	Proprietary	10 - 30
Isononanoic acid, potassium salt	84501-71-3	5 - 10

4. FIRST AID MEASURES

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact:	For skin contact flush with large amounts of water. Obtain medical attention if irritation persists.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Get immediate medical attention. Do not induce vomiting.
Notes to physician:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flash point:	> 100 °C (> 212°F)
Autoignition temperature:	Not applicable
Flammable/Explosive limits - lower:	Not applicable
Flammable/Explosive limits - upper:	Not applicable
Extinguishing media:	Use media appropriate for surrounding material.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	This product is an aqueous mixture which will not burn.
Hazardous combustion products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear suitable protective clothing, gloves and eye/face protection.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not take internally.
Storage:	Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Manufacturer recommends storing above 4.4 ºC (40 ºF). Thaw and mix thoroughly if frozen. Do not store above 100 ºF (37.7 ºC).

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Inorganic phosphate	None	None	None	None
Amine borate	2 mg/m3 TWA Inhalable fraction. 6 mg/m3 STEL Inhalable fraction.	None	None	None
Isononanoic acid, potassium salt	None	None	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear safety glasses; chemical goggles (if splashing is possible).

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Yellow
Odor: Ammoniacal
Odor threshold: Not available
pH: 10
Vapor pressure: Not determined
Boiling point/range: > 98.9 °C (> 210°F)
Melting point/ range: Not determined
Specific gravity: 1.15 - 1.17 at 15.56 °C (60.01 °F)
Vapor density: Not determined
Flash point: > 100 °C (> 212°F)
Flammable/Explosive limits - lower: Not applicable
Flammable/Explosive limits - upper: Not applicable
Autoignition temperature: Not applicable
Evaporation rate: Not available
Solubility in water: Complete
Partition coefficient (n-octanol/water): Not determined
VOC content: Not applicable

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: Will not occur.

Hazardous decomposition products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Incompatible materials: This product may react with strong oxidizing agents. This product may react with strong reducing agents.

Conditions to avoid: Keep away from heat, ignition sources and incompatible materials.

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Inorganic phosphate	No	No	No
Amine borate	No	No	No
Isononanoic acid, potassium salt	No	No	No

Hazardous components	Health Effects/Target Organs
Inorganic phosphate	No Target Organs
Amine borate	Cardiac, Central nervous system, Developmental, Gastrointestinal tract, Irritant, Kidney, Metabolic, Reproductive
Isononanoic acid, potassium salt	No Records

12. ECOLOGICAL INFORMATION

Ecological information: Not available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations. This chemical contains phosphates.

Hazardous waste number: Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification: None above reporting de minimus

CERCLA/SARA Section 302 EHS: None above reporting de minimus
CERCLA/SARA Section 311/312: Immediate Health
CERCLA/SARA 313: None above reporting de minimus

California Proposition 65: No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class: D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: Corrected information in Section(s): 15

Prepared by: Jennifer Mckay, Regulatory Affairs Specialist

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SAFETY DATA SHEET

Issue Date: 01/11/2021

Section 1. Chemical product and company identification

Product name: **ZSR235242 RAL 9006 WHITE ALUMINIUM BONDED RPSD**

Product chemistry: Polyester

Material uses: Electrostatic coating for use in industrial plants.

Manufacturer: Vitracoat Pinturas en Polvo s.a. de c.v.
Av. Circuito de la Industria Sur No. 284, Parque Industrial Lerma.
Lerma Edo. De Mex. C.P. 52000

In case of Emergency (Health or Spills): (52) 722 26 27000 U-5994S: 888-778

After hours: (52) 722 26 27000 U-5994S: 888-778

Section 2. Hazardous ingredients

CHARACTERISTIC CHEMISTRY: Chemical Mixture

SUBSTANCE	CAS N°	%p/p	ACGIH TLV TWA	GLOBALLY HARMONIZED SYSTEM
Triglycidyl Isocyanurate	2451-62-9	4-6	TWA: 0.05 mg/m³ 8 hours.	**Hazard statement:** May cause the following hazards if not properly used (Section 7) and if not the recommended safety equipment (Section 5) is used. • H303 May be harmful if swallowed • H317 May cause an allergic skin reaction • H320 Causes eye irritation • H333 May be harmful if inhaled • H335 May cause respiratory irritation • H340 May cause genetic defects (routes of exposure oral,inhalation) • H373 May cause damage to organs (respiratory) (if inhaled) LABEL 2
Aluminium powder (stabilised)	7429-90-5 231-072-3	0-1	10 mg/m³	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 3. Hazards identification

Emergency overview

Physical state: Solid. [Powder.]

Odor: Odorless.

Signal word: WARNING!

Hazard statements: HARMFUL IF INHALED OR SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. MAY CAUSE GENETIC DEFECTS.

Precautionary measures : Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Use personal protective equipment as required. Wash thoroughly after handling.

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation: Toxic by inhalation. Slightly irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion: Toxic if swallowed.

Skin: Slightly irritating to the skin. May cause sensitization by skin contact.

Eyes: Severely irritating to eyes. Risk of serious damage to eyes.

Potential chronic health effects

Chronic effects: Contains material that can cause target organ damage. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Target organs: Contains material which causes damage to the following organs: lymphatic system.
Contains material which may cause damage to the following organs: lungs, the nervous system, upper respiratory tract, skin, eyes.

Over-exposure signs/symptoms

Inhalation: Adverse symptoms may include the following:
respiratory tract irritation coughing

Ingestion: No specific data.

Skin	Adverse symptoms may include the following: Irritation, redness
Eyes	Adverse symptoms may include the following: pain or irritation watering redness
Medical conditions aggravated by overexposure	Pre-existing skin disorders and disorders involving any other target organs mentioned in this SDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Section 4. First aid measures

After contact with eyes:	Check for and remove any contact lenses. Immediately flush eyes with plenty of clean water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
After skin contact:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
After inhalation of material:	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
After ingestion:	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Notes to physician:	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Section 5.-Fire fighting measures

Flammability of the product: Fine dust clouds may form explosive mixtures with air.

Extinguishing media

Suitable	Use dry chemical, CO_2, water spray (fog) or foam.
Not suitable	Do not use water jet.
Special exposure hazards	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, metal oxide/oxides
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

NFPA:
Rate Peligrosidad

Section 6.-Measures accidental release

Personal precautions:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Precautions for environmental protection:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods for cleaning / collecting:	Pick up with vacuum equipment.

Section 7.-Handling and storage

Handling: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.
Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly

closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Store in a segregated and approved area.
Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers.
Use appropriate containment to avoid environmental contamination.

Section 8.-Exposure limits and personal protective equipment

INGREDIENT	EXPOSURE LIMITS
Triglycidyl Isocyanurate	ACGIH TLV (United States, 3/2012). TWA: 0.05 mg/m³ 8 hours.
Aluminium powder (stabilised)	AGW (Inhalable fraction) 10 mg/m³ AGW (Alveolate fraction) 1.35 mg/ m³

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards.
Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Appropriate techniques should be used to remove potentially contaminated clothing.
Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Protection of hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Skin protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9 -. Physical and chemical properties

Physical state:	Solid. (powder)	Flash point: Vapor Pressure (20 ° C):	N/A Closed cup: Not applicable.
Auto-ignition temperature:	450 to 600°C (842 to 1112°F)	Flammable limits:	20 - 70 g/m3
Odor: Solubility:	Odorless Insoluble in the following materials: cold water and hot water.	Relative density: Minimum ignition energy (mJ):	1.2 to 1.9 [ISO 8130-2/-3]N/A 5 to 20

Section 10. Stability and reactivity

Chemical Stability: The product is stable.

Conditions to avoid: Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust

accumulation.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Triglycidyl Isocyanurate	LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	Rat Rabbit Rat	650 mg/m³ >2000 mg/kg 188 mg/kg	4 hours -- --
Aluminium powder (stabilised)	LC50: Inhalation	Rat	>5 mg/l 4h	

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Triglycidyl Isocyanurate	Sub-chronic NOAEL Oral Chronic NOAEL OralLD50 Sub-acute NOEL Inhalation Dusts and mists	Rat - Male, Female Rat – Male Mouse - Male, Female	7.32 mg/kg 1.3 mg/kg <100 mg/m³	94 days; 7 days per Week 63 weeks 5 days; 6 hours per day

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
Triglycidyl Isocyanurate	Eyes - Severe irritant	Rabbit		4 hours 100 milligrams

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
Triglycidyl Isocyanurate	Skin	Guinea pig	Sensitizing

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Triglycidyl Isocyanurate	Negative - Oral - TD	Rat – Male	4.36 mg/kg	99 weeks; 24 hours per day

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Triglycidyl Isocyanurate	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: Metabolic activation +/-	Positive
	OECD 483 Mammalian Spermatogonial, Chromosome, Aberration Test	Experiment: In vivo Subject: Mammalian-Animal Cell: Germ	Positive
		Experiment: In vitro Subject: Mammalian-Human Cell: Somatic Metabolic activation: Metabolic activation+/-	Negative
	OECD 478 Genetic Toxicology: Rodent Dominant Lethal Test	Experiment: In vivo Subject: Mammalian-Animal	Negative

Teratogenicity

Conclusion/Summary: Not available.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Triglycidyl Isocyanurate	-----	Negative	Negative	Rat – Male	Oral	94 days; 7 days per week

Section 12. Ecological information

Ecotoxicity: No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Triglycidyl Isocyanurate	Acute EC50 29 mg/l Fresh water Acute IC50 >100 mg/l Fresh water Acute LC50 >100 mg/l Fresh water	Algae Micro-organism Daphnia	72 hours 3 hours 24 hours
Aluminium powder (stabilised)	No data available		

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Triglycidyl Isocyanurate	OECD 301B Ready Biodegradability - CO_2 Evolution Test	1 % - Not readily - 44 days	----	Activated sludge

Section 13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.
Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated	Not regulated	Not regulated	----		----
TDG Classification	Not regulated	Not regulated	Not regulated	----		----
Mexico Classification	Not regulated	Not regulated	Not regulated	----		----
ADR/RID Class	Not regulated	Not regulated	Not regulated	----		----
IMDG Class	Not regulated	Not regulated	Not regulated	----		----
IATA-DGR Class	Not regulated	Not regulated	Not regulated	----		----

PG*: Packing group

Section 15. Regulatory information

HCS Classification: Toxic material, Irritating material, Sensitizing material, Target organ effects.

U.S. Federal regulations: **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b): Not listed

Hazardous Air Pollutants (HAPs)
Clean Air Act Section 602: Class I Substances — Not listed
Clean Air Act Section 602: Class II Substances — Not listed
DEA List I Chemicals: (Precursor Chemicals) — Not listed
DEA List II Chemicals: (Essential Chemicals) — Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ: **Not applicable.**

SARA 311/312

Classification: Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of Pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Triglycidyl Isocyanurate	4-6	No	No	No	Yes	Yes

SARA 313

	Product Name	CAS Number	%
Form R - Reporting requirements	No SARA (Superfund Amendments & Reauthorization AC) 313 chemicals are present		

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts None of the components are listed.
New York None of the components are listed.
New Jersey The following components are listed: TRIGLYCIDYL ISOCYANURATE
Pennsylvania The following components are listed: TRIGLYCIDYL ISOCYANURATE
Canada inventory Not determined

International regulations

International lists
Australia inventory (AICS): Not determined.
China inventory (IECSC): Not determined.
Japan inventory: Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons: Convention List Schedule I Chemicals Not listed
Chemical Weapons: Convention List Schedule II Chemicals Not listed
Chemical Weapons: Convention List Schedule III Chemicals Not listed

Section 16. Other information

Label requirements	HARMFUL IF INHALED OR SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. MAY CAUSE GENETIC DEFECTS.

Version : 2

Indicates information that has changed from previously issued version. Notice to reader

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