



MATERIAL SAFETY DATA SHEET

PRODUCT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SAL 000007346

Material Safety Data Sheet

CONOCO

Emergency Medical Telephone (800) 441-3637

CALCINED PETROLEUM COKE

C P 0 0 5

I. MATERIAL IDENTIFICATION

Name Calcined Petroleum Coke	CAS Registry Number 64743-05-1	Transportation Emergency Phone 1-(800) 424-9300 (Chemtrec)
Synonyms X-Coke, Base Premium, Intermediate Premium, Normal Premium, Low Sulfur Recarburizer, Normal Recarburizer, High Sulfur Recarburizer, Calcined High Sulfur, Calcined Anode, Calcined Regular, Coke Fines, PCR Recarburizer	Product Code 912/913/921/922/923/ 924/927/929/931/932/ 934	

II. OSHA HAZARD DETERMINATION

The material is not hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Refer to Sections VII and XI of this MSDS for more information.

Hazardous Ingredients None	CAS Registry Number	Concentration
Hazardous Physical Properties None		

III. PHYSICAL DATA

Appearance and Odor Dark gray or black solid; No odor	% Volatiles (Volume %) 0 - 1%
Boiling Point Solid	Solubility in Water Insoluble
Melting Point Nonmelting solid	Bulk Density Approximately 52 lb/cu ft

IV. REACTIVITY DATA

Stable: X Unstable:

Reactivity: Not reactive under normal conditions.

Hazardous Decomposition Materials: Combustion may produce oxides of sulfur and carbon. Incomplete combustion can produce carbon monoxide.

Hazardous Polymerization: Will not polymerize.

COKC0010/February 1990

1

SAL 000007347

CP005

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point: No applicable test

Extinguishing Media: Use water spray, water fog.

The most effective method of extinguishing is to drench with water or water fog. Though other forms of extinguishing agent may be used, they are considered less effective for deep-seated, smoldering fires.

Special Fire Fighting Procedures: None.

Unusual Fire and Explosion Hazards: None.

National Fire Protection Association (NFPA) Classification

Health 0 Fire 1 Reactivity 0

HAZARD RATING

Least-0 Slight-1 Moderate-2

High-3 Extreme-4

VI. TRANSPORTATION AND STORAGE

Storage Conditions: Do not store with strong oxidizers. Store in accordance with National Fire Protection Association regulations.

Shipping Information:

DOT: Regulated by water mode only, when temperature exceeds 130°F.

Proper Shipping Name: Petroleum Coke, Calcined, at 130°F or Above

Hazard Class: ORM-C

DOT Label(s): None

Special Information: Must not be loaded in cargo vessels when temperatures exceed 225°F.
(46 CFR 148.04-17)

DOT Placard: None

IATA/IMO: Not Regulated by IMO

VII. HEALTH HAZARD INFORMATION

Exposure Limits for Calcined Petroleum Coke

PEL: None Established

TLV: None Established

Exposure Limits for Nuisance Dust

PEL: 15 mg/m³ Total Dust

5 mg/m³ Respirable Dust

TLV: 10 mg/m³ Total Dust

Ceiling Value: Not Established

Primary Routes of Exposure/Entry: Skin, Inhalation.

Signs and Symptoms of Exposure/Medical Conditions Aggravated by Exposure:

Excessive concentrations of nuisance dusts may reduce visibility, cause unpleasant deposits in the eyes, ears, and nasal passages, or irritate the skin and/or mucous membranes by chemical or mechanical action. The exposure limits of 5, 10, and 15 mg/m³ are for nuisance dusts that are biologically inert and not expected to cause a significant health effect when exposure is reasonably controlled.

Carcinogenicity:

This material is not known to contain any chemical listed as a carcinogen or suspected carcinogen by OSHA, IARC, or NTP at a concentration greater than 0.1%.

VIII. EMERGENCY AND FIRST AID INFORMATION

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Skin: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, consult a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician.

IX. SPILL, LEAK, AND DISPOSAL INFORMATION

In Case of Spill or Leak: Contain spill immediately in smallest possible area. Recover as much of the product as possible by shovel or mechanical means. Nonrecyclable product and contaminated soils and other materials should be placed in proper containers for storage and ultimate disposal. Avoid washing, draining, or directing material to storm or sanitary sewers.

NOTE: Review FIRE AND EXPLOSION HAZARDS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up.

Waste Disposal Method: Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

X. PRECAUTIONARY MEASURES

Respiratory Protection: Select appropriate NIOSH-approved respiratory protection where necessary to maintain exposures below the acceptable limits in Section VII. Proper respirator selection should be determined by adequately trained personnel and based on the contaminant(s), the degree of potential exposure, and published respiratory protection factors.

Ventilation: Keep area well ventilated to minimize exposure to dust.

Protective Gloves: Wear impervious gloves.

Eye Protection: Wear close fitting goggles.

Other Protective Equipment: Sufficient protective clothing to minimize skin exposure. Launder contaminated clothing before reuse.

Other Precautions: Wash thoroughly with soap and water to avoid any prolonged skin contact.

XI. REGULATORY INFORMATION**FEDERAL REGULATIONS**

CERCLA, 40 CFR 302

Not Applicable

**SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986, TITLE III
SECTIONS 302, 304, 311, 312, 313**

SECTION 302/304 - Extremely Hazardous Substances (40 CFR 355)

The material does not contain extremely hazardous substances at greater than 1.0% concentration; however, it is possible that this material may contain extremely hazardous substances at a lower concentration so that a large enough spill could warrant an Emergency Release Report under Section 304.

C P 0 0 5

SECTION 311/312 - MSDS and Chemical Inventory Reporting Requirements (40 CFR 370)

The material should be reported under the following EPA hazard categories:

- | | |
|--|---|
| ☐ Immediate (Acute) Health Hazard | ☐ Sudden Release of Pressure |
| ☐ Delayed (Chronic) Health Hazard | ☐ Reactive |
| ☐ Fire | ☒ Not Applicable |

NOTE: See Section II for the concentration of any ingredients classified as hazardous by OSHA.

SECTION 313 - List of Toxic Chemicals (40 CFR 372)

The material does not contain chemical(s) at a level of 1.0% or greater (0.1% for carcinogens) on the list of Toxic Chemicals and subject to toxic chemical release reporting requirements.

TOXIC SUBSTANCES CONTROL ACT (TSCA), 40 CFR 710

This material is in the TSCA Inventory of Chemical Substances and/or is otherwise in compliance with TSCA.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261, SUBPART C AND D

The material, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however, it could be considered hazardous if it meets criteria for being toxic, corrosive, ignitable, or reactive according to the U.S. EPA definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This material could also become a hazardous waste if it is mixed with or comes in contact with a listed hazardous waste. If such contact or mixing occurs, check 40 CFR 261 to determine whether it is a hazardous waste. If it is a hazardous waste, regulations 40 CFR 262, 263, 264 and 268 may apply.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 116, SECTION 311

The material does not contain any ingredient(s) subject to the Act.

HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS, 49 CFR 171-178

The material does not contain any ingredient(s) subject to the Regulations.

FOREIGN REGULATION

CANADIAN HAZARDOUS PRODUCTS ACT (WHMIS)

The material is not a WHMIS Controlled Product.

STATE REGULATIONS

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 ("PROPOSITION 65")

The material contains ingredient(s) known to the State of California to cause cancer, birth defects, or other reproductive harm. Read and follow label directions and use care when handling or using all petroleum products.

Ingredient(s):

Nickel (<1.0%)

SAL 000007350

PENNSYLVANIA WORKER AND COMMUNITY RIGHT TO KNOW ACT

The material contains the following hazardous substances:

Categories: H = Hazardous Substance ($\geq 1.0\%$)
S = Special Hazardous Substance ($\geq 0.01\%$)
E = Environmental Hazard ($\geq 1.0\%$)

<u>Ingredient</u>	<u>CAS Registry Number</u>	<u>Category</u>
Nickel	7440-02-0	E,S
Sulfur	7704-34-9	H

Nonhazardous ingredient(s) information is withheld as trade secret in accordance with Section 11 of Pennsylvania Worker and Community Right to Know Act.

MSDS Code: COKC0010

SECTIONS OF MSDS REVISED:

II, XI

DATE OF LATEST REVISION/REVIEW:

2/90 - Replaces MSDS dated 9/89

DEPARTMENT RESPONSIBLE FOR MSDS:

Safety, Occupational Health & Environmental Affairs

PRODUCT INFORMATION CONTACT:

Hazard Communication Analyst

Conoco Inc.

(713) 293-5550

The above data are based on tests, experience, and other information which Conoco believes reliable and are supplied for informational purposes only. However, some ingredients may have been purchased or obtained from third-party manufacturers. In these instances, Conoco, in good faith, relies on information provided by those third parties. Since conditions of use are outside our control, CONOCO DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE USE OF THE ABOVE DATA. NOTHING CONTAINED HEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY CONOCO WITH RESPECT TO THE DATA, THE MATERIAL DESCRIBED, OR ITS USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO CONOCO.

Material Safety Data Sheet



Emergency Medical Telephone (800) 441-3637

C P 0 0 6

GREEN PETROLEUM COKE

I. MATERIAL IDENTIFICATION

Name	CAS Registry Number	Transportation Emergency Phone
Green Petroleum Coke	64741-79-3	1-(800) 424-9300 (Chemtrec)
Synonyms	Product Code	
Fuel Grade Coke	907/908/926	
Green Anode Coke		
Green Fuel Coke		
Green Regular Coke		
Green Premium Coke		

II. OSHA HAZARD DETERMINATION

The material is not hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Refer to Sections VII and XI of this MSDS for federal and state regulatory information.

Hazardous Ingredients	CAS Registry Number	Concentration
None		
Hazardous Physical Properties		
None		

III. PHYSICAL DATA

Appearance and Odor	% Volatiles (Volume %)
Black solid;	Approximately 5 - 15%
May have slight hydrocarbon odor	
Boiling Point	Solubility in Water
Solid	Insoluble
Melting Point	Bulk Density
Nonmelting solid	Approximately 52 lb/cu ft

IV. REACTIVITY DATA

Stable: X Unstable:

Reactivity: Not reactive under normal conditions.

Hazardous Decomposition Materials: Combustion may produce oxides of sulfur and carbon. Incomplete combustion can produce carbon monoxide.

Conditions to Avoid: May burn if exposed to temperatures above 700°F (370°C).

Hazardous Polymerization: Will not polymerize.

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point: No applicable test.

Extinguishing Media: Use water spray, water fog.

The most effective method of extinguishing is to drench with water or water fog. Though other forms of extinguishing agent may be used, they are considered less effective for deep-seated smoldering fires.

Most reported coke fires have occurred when freshly produced coke is inadequately cooled and stored in a manner that allows the movement of air through the coke bed. Coke should be well quenched or cooled before it is stored in a pile out of doors or placed in silos or bins. Storage should be arranged to prevent movement of air through the coke.

Should a fire occur, its location and extent should be determined as quickly as possible. The best procedure is to dig out and remove the coke in the heated zone. The hot coke should be drenched with water as it is exposed. Because of the possibility of a steam explosion, great care should be used in introducing water into confined storage such as a silo. Whenever possible, bulk material in silos should be removed and the material drenched in an open area.

Special Fire Fighting Procedures: Burning green coke has similar characteristics to burning coal--may be readily extinguished using water fog after spreading the burning material.

Unusual Fire and Explosion Hazards: Will burn if heated above 700°F (370°C) and may heat spontaneously under certain conditions. High airborne dust concentrations may present a dust explosion hazard.

National Fire Protection Association (NFPA) Classification

Health 0 Fire 1 Reactivity 0

HAZARD RATING

Least-0 Slight-1 Moderate-2
High-3 Extreme-4

VI. TRANSPORTATION AND STORAGE

Storage Conditions: Do not store with strong oxidizers. Store in accordance with National Fire Protection Association regulations.

Shipping Information:

DOT: Regulated by Water Mode Only.

Proper Shipping Name: Petroleum Coke, Uncalcined

Hazard Class: ORM-C

DOT Label(s): None

Special Information: Must not be loaded in cargo vessels when temperatures exceed 225°F. See Coast Guard Special Permit 3-86 (which supercedes 46 CFR 148.04-15) and 46 CFR 148.04-17.

DOT Placard: None

IATA/IMO: Not Regulated by IMO

VII. HEALTH HAZARD INFORMATION

Exposure Limits for Green Petroleum Coke

PEL: Not Established Du Pont AEL: Not Established

TLV: Not Established Ceiling Value: Not Established

Primary Routes of Exposure/Entry: Skin, Inhalation.

Signs and Symptoms of Exposure/Medical Conditions Aggravated by Exposure:

The product does not pose a significant health hazard, but as with many petroleum products, poor hygienic practices or inadequate engineering design that allow prolonged or repeated exposure may cause minor skin irritation.

Carcinogenicity:

This material is not known to contain any chemical listed as a carcinogen or suspected carcinogen by OSHA, IARC, or NTP at a concentration greater than 0.1%.

VIII. EMERGENCY AND FIRST AID INFORMATION

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Skin: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, consult a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician.

IX. SPILL, LEAK AND DISPOSAL INFORMATION

In Case of Spill or Leak: Contain spill immediately in smallest possible area. Recover as much of the product as possible by shovel or mechanical means. Nonrecyclable product and contaminated soils and other materials should be placed in proper containers for storage and ultimate disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

NOTE: Review FIRE AND EXPLOSION HAZARDS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up.

Waste Disposal Method: Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

X. PRECAUTIONARY MEASURES

Respiratory Protection: Select appropriate NIOSH-approved respiratory protection where necessary to maintain exposures below the acceptable limits in Section VII. Proper respirator selection should be determined by adequately trained personnel and based on the contaminant(s), the degree of potential exposure, and published respiratory protection factors.

Ventilation: Keep area well ventilated and avoid inhalation of dust.

Protective Gloves: Wear impervious gloves.

Eye Protection: Wear close fitting goggles.

Other Protective Equipment: Sufficient protective clothing to minimize skin exposure. Launder contaminated clothing before reuse.

Other Precautions: Wash thoroughly with soap and water to avoid any prolonged skin contact.

XI. REGULATORY INFORMATION**FEDERAL REGULATIONS**

CERCLA, 40 CFR 302

Not Applicable

**SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986, TITLE III
SECTIONS 302, 304, 311, 312, 313**

SECTION 302/304 - Extremely Hazardous Substances (40 CFR 355)

The material does not contain extremely hazardous substances at greater than 1.0% concentration; however, it is possible that this material may contain extremely hazardous substances at a lower concentration so that a large enough spill could warrant an Emergency Release Report under Section 304.

SECTION 311/312 - MSDS and Chemical Inventory Reporting Requirements (40 CFR 370)

The material should be reported under the following EPA hazard categories:

- | | |
|--|---|
| ☐ Immediate (Acute) Health Hazard | ☐ Sudden Release of Pressure |
| ☐ Delayed (Chronic) Health Hazard | ☐ Reactive |
| ☐ Fire | ☒ Not Applicable |

NOTE: See Section II for the concentration of any ingredients classified as hazardous by OSHA.

SECTION 313 - List of Toxic Chemicals (40 CFR 372)

The material does not contain chemical(s) at a level of 1.0% or greater (0.1% for carcinogens) on the list of Toxic Chemicals and subject to toxic chemical release reporting requirements.

TOXIC SUBSTANCES CONTROL ACT (TSCA), 40 CFR 710

This material is in the TSCA Inventory of Chemical Substances and/or is otherwise in compliance with TSCA.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261, SUBPART C AND D

The material, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however, it could be considered hazardous if it meets criteria for being toxic, corrosive, ignitable, or reactive according to the U.S. EPA definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This material could also become a hazardous waste if it is mixed with or comes in contact with a listed hazardous waste. If such contact or mixing occurs, check 40 CFR 261 to determine whether it is a hazardous waste. If it is a hazardous waste, regulations 40 CFR 262, 263, 264 and 268 may apply.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 116,

SECTION 311

The material contains the following ingredient(s) which is considered hazardous if spilled in navigable waters.

Ingredient

Petroleum Hydrocarbons

Reportable Quantity

Film or sheen upon, or discoloration of, the water surface or adjoining shoreline.

HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS, 49 CFR 171-178

The material does not contain any ingredient(s) subject to the Regulation.

FOREIGN REGULATIONS

CANADIAN HAZARDOUS PRODUCTS ACT (WHMIS)

The material is not a WHMIS Controlled Product.

STATE REGULATIONS**CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986
("PROPOSITION 65")**

The material contains ingredient(s) known to the State of California to cause cancer, birth defects, or other reproductive harm. Read and follow label directions and use care when handling or using all petroleum products.

Ingredient(s):

Nickel (<1.0%)

PENNSYLVANIA WORKER AND COMMUNITY RIGHT TO KNOW ACT

The material contains the following hazardous substances:

Categories: H = Hazardous Substance ($\geq 1.0\%$)
S = Special Hazardous Substance ($\geq 0.01\%$)
E = Environmental Hazard ($\geq 1.0\%$)

<u>Ingredient</u>	<u>CAS Registry Number</u>	<u>Category</u>
Nickel	7440-02-0	E,S
Sulfur	7704-34-9	H

Nonhazardous ingredient(s) information is withheld as trade secret in accordance with Section 11 of Pennsylvania Worker and Community Right to Know Act.

MSDS Code: COKC0020

SECTIONS OF MSDS REVISED:

XI

DATE OF LATEST REVISION/REVIEW:

2/90 - Replaces MSDS dated 9/89

DEPARTMENT RESPONSIBLE FOR MSDS:

Safety, Occupational Health & Environmental Affairs

PRODUCT INFORMATION CONTACT:

Hazard Communication Analyst

Conoco Inc.

(713) 293-5550

The above data are based on tests, experience, and other information which Conoco believes reliable and are supplied for informational purposes only. However, some ingredients may have been purchased or obtained from third-party manufacturers. In these instances, Conoco, in good faith, relies on information provided by those third parties. Since conditions of use are outside our control, CONOCO DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE USE OF THE ABOVE DATA. NOTHING CONTAINED HEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY CONOCO WITH RESPECT TO THE DATA, THE MATERIAL DESCRIBED, OR ITS USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO CONOCO.



SAL 000007357

RFP-12

December 31, 1989

Louisiana Emergency Response Commission
Office Of State Police
Hazardous Substance Control Section
Right-To-Know Unit
P.O. Box 66614
Baton Rouge, LA 70896

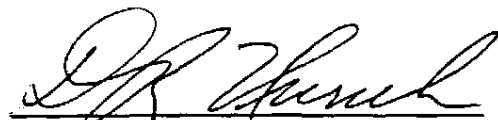
RE: SUBMITTAL OF MSDS UPDATES - FOURTH QUARTER 1989

Dear Sir:

Enclosed you will find Material Safety Data Sheet Updates for the fourth quarter of 1989, for the Conoco Refinery, Westlake, Louisiana. This information is being provided to you in accordance with the update requirements of Section 311 of Community Right-To-Know Act.

If you have any questions concerning this submittal, please contact Doug Frey at 318-491-5023.

Sincerely,



Don R. Unruh
Plant Manager
Lake Charles Refinery

att

cc w/o att: S.J. Brouillard/W.O. Lukens (Conoco)
Brandt Butler (Conoco)

FILE



SAL 000007358



INTEROFFICE COMMUNICATION

December 31, 1989

Fire Chief
Westlake Fire Department
2401 Guillory Street
Westlake, LA 70669

SUBMITTAL OF MSDS UPDATES - FOURTH QUARTER 1989

Dear Sir:

Enclosed you will find Material Safety Data Sheet Updates for the fourth quarter of 1989, for the Conoco Refinery, Westlake, Louisiana. This information is being provided to you in accordance with the update requirements of Section 311 of Community Right-To-Know Act.

If you have any questions concerning this submittal, please contact Doug Frey at 318-491-5023.

Sincerely,

Don R. Unruh
Plant Manager
Lake Charles Refinery

att

cc w/o att: S. J. Brouillard/W.O. Lukens (Conoco)
Brandt Butler (Conoco)

FILE





INTEROFFICE COMMUNICATION

December 31, 1989

Mr. Samuel H. Russell
Director of Civil Defense
P.O. Box 1391
Lake Charles, LA 70602-1391

RE: SUBMITTAL OF MSDS UPDATES - FOURTH QUARTER 1989

Dear Mr. Russell:

Enclosed you will find Material Safety Data Sheet Updates for the fourth quarter of 1989, for the Conoco Refinery, Westlake, Louisiana. This information is being provided to you in accordance with the update requirements of Section 311 of Community Right-To-Know Act.

If you have any questions concerning this submittal, please contact Doug Frey at 318-491-5023.

Sincerely,

Don R. Unruh
Plant Manager
Lake Charles Refinery

att

cc w/o att: S.J. Brouillard/W.O. Lukens (Conoco)
Brandt Butler (Conoco)

FILE



SAL 000007360

DDF/006.DOC

COMMITMENT • LEADERSHIP • TEAMWORK



Conoco Inc.
Medical Division

Material Information Chemical Add

Use this form only when chemicals are being added which do not appear on your current inventory report.

Chemical Information		Location Information			Vessel Information	
Chemical Trade Name	Chemical Role	Site	Lease	Start Date	ID	Start Date
POTASSIUM DICHROMATE		PR216	Lease			
Remarks		A/S 14	Battery			
		Process 02610	Well	9-27-89		
	Local Ref. No.	Task		Stop Date	Service	Stop Date
		Location Name				
	65585	LAB				
Chemical Trade Name	Chemical Role	Site	Lease	Start Date	ID	Start Date
NI-KOTE		PR216	Lease			
Remarks		A/S 90	Battery			
		Process 02981	Well	9-27-89		
	Local Ref. No.	Task		Stop Date	Service	Stop Date
		Location Name				
	65586	TRANSPORTATION				
Chemical Trade Name	Chemical Role	Site	Lease	Start Date	ID	Start Date
SODIUM HYDROXIDE, SOLUTION		PR216	Lease			
Remarks		A/S 12	Battery			
		Process 02800	Well	9-27-89		
	Local Ref. No.	Task		Stop Date	Service	Stop Date
		Location Name				
	65448	POWER PLANT				
Chemical Trade Name	Chemical Role	Site	Lease	Start Date	ID	Start Date
		A/S	Battery			
Remarks		Process	Well			
	Local Ref. No.	Task		Stop Date	Service	Stop Date
		Location Name				
Chemical Trade Name	Chemical Role	Site	Lease	Start Date	ID	Start Date
		A/S	Battery			
Remarks		Process	Well			
	Local Ref. No.	Task		Stop Date	Service	Stop Date
		Location Name				
Chemical Trade Name	Chemical Role	Site	Lease	Start Date	ID	Start Date
		A/S	Battery			
Remarks		Process	Well			
	Local Ref. No.	Task		Stop Date	Service	Stop Date
		Location Name				

Submitted by

Name	ETN (Phone Number)
D.D. FREY	640-5023
Mailing Address	State Zip Code
P.O. Box 37	LA 70667
City	
WESTLAKE	

Distribution—Mail Original to address below, and attach copy of the Material Safety Data Sheet (MSDS) for each chemical (except Conoco MSDS's).
—Retain yellow copy.

Mail Original and MSDS's to: **Conoco Medical Division**
P-140 South Tower
P.O. Box 1267
Ponca City OK 74603

SAL 000007361

Chemical Information		Location Information			Vessel Information	
Chemical Trade Name	Chemical Role	HISS Codes	Production Codes	Location Dates	Identification	Vessel Dates
①	③	Site	Lease	Start Date	ID	Start Date
Remarks	Local Ref. No.	A. S. ⑤	Battery ⑥	⑧	⑩	⑫
		Process	Well			
		Task	Location Name ⑦	Stop Date	Service	Stop Date
	④			⑨	⑪	⑬

Required items are:

- ① Chemical Trade Name
- ③ Chemical Role (at least one)
- ⑤ HISS Code (at least to Site level)
- ⑧ Location Start Date

Instructions

Chemical Information

1. **Chemical Trade Name:** Chemical Name as it appears on MSDS.
2. **Remarks (Optional):** Any remarks the site wishes to record about the chemical or use of the chemical in their situation.
3. **Chemical Role:** A code which describes what the chemical's role or use is at the site. Up to five of the following codes can be entered:
 - A = Chemical Synthesized at Site—Materials produced via chemical reaction (include isolated intermediates)
 - B = Imported Materials—Chemicals directly imported by Conoco (we pay duty)
 - C = Process Chemical—Includes raw materials, products which result from physical blending of materials (no chemical reaction involved), and catalyst
 - D = Support Materials—Materials essential to plant operation but do not end up in final product (example: water treatment chemicals and maintenance materials)
 - E = Nonisolated Intermediates
 - F = Laboratory Chemicals—Includes research and pilot plant materials (noncommercial products)
 - G = Nonwaste Impurities/By-Products
 - H = Waste By-Products—Material which is disposed
 - I = Receipt/Storage Movement **only**
 - O = Other

4. **Local Reference Number (Optional):** A number assigned by the local site and used to refer to the chemical or its MSDS.

Location Information

5. **HISS Code:** A code used in the Health Information Surveillance System to define a work location. Site Code is required. Area/Section, Process, and Task are optional. See the User Guide for the code applicable to your site or contact Medical Division.
6. **Production Codes (Optional):** Used by North American Production sites only.
7. **Location Name (Optional):** Common name used to identify a particular area within your site (example: loading dock, Crude Unit No. 4, etc.). This name will appear on your standard inventory reports if it is filled in.
8. **Start Date:** The date your site began using the chemical.
9. **Stop Date (Optional):** Should be used only when the stop date for a new chemical is already known at the time you submit this form (example: a certain chemical is brought in for use on a temporary or experimental basis for one week). **Chemicals that appear on your current inventory should be stopped using the Chemical Change report.**

Vessel Information (Optional)

The Hazard Communication Regulations allow for vessels to be identified by a numbering system which can be cross-referenced with a listing of the contents to point to an MSDS for those contents. This can be done in lieu of placarding each vessel with hazard information.

In addition to the minimum required information (Chemical Trade Name, Chemical Role, HISS Site Code, and Location Start Date), the following information is needed to produce a vessel inventory report:

10. **ID:** The number or code that identifies the vessel or fixed container at your location.
11. **Service:** The name or the service of the vessel (example: extractor, holding tank, etc.).
12. **Start Date:** The date the location began using the chemical in the vessel specified.
13. **Stop Date (Optional):** Should be used only when the stop date for a new chemical in this vessel is already known at the time you submit this form (example: when a chemical is being used on a temporary or experimental basis for one week). **Chemicals that appear on your current vessel inventory should be stopped using the Chemical Change report.**

SAL 000007362

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (201) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

P5719 D05
EFFECTIVE: 05/01/89

POTASSIUM DICHROMATE

PAGE: 1
ISSUED: 05/17/89

J.T.BAKER INC., 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865 **CS 585**

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: POTASSIUM DICHROMATE
COMMON SYNONYMS: DICHROMIC ACID, DIPOTASSIUM SALT; BICHROMATE OF POTASH
CHEMICAL FAMILY: CHROMIUM COMPOUNDS
FORMULA: K₂Cr₂O₇
FORMULA WT.: 294.19
CAS NO.: 7778-50-9
NIOSH/RTCS NO.: HX7680000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: 3090,3093,3092,3094

PRECAUTIONARY LABELING

B ER SAF-T-DATA* SYSTEM

HEALTH	-	4	EXTREME (CANCER CAUSING)
FLAMMABILITY	-	0	NONE
REACTIVITY	-	3	SEVERE (OXIDIZER)
CONTACT	-	3	SEVERE (LIFE)

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

U.S. PRECAUTIONARY LABELING

POISON DANGER

MAY CAUSE BURNS OR EXTERNAL ULCERS. CAUTION: CONTAINS CHROMIUM (VI), CANCER HAZARD. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. MAY BE FATAL IF SWALLOWED OR ABSORBED THROUGH SKIN. HARMFUL IF INHALED. KEEP FROM CONTACT WITH CLOTHING AND OTHER COMBUSTIBLE MATERIALS. DO NOT STORE NEAR COMBUSTIBLE MATERIALS. DO NOT GET IN EYES, ON SKIN, ON CLOTHING. DO NOT BREATHE DUST. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. IN CASE OF FIRE, SOAK WITH WATER. IN CASE OF SPILL, SWEEP UP AND REMOVE. FLUSH SPILL AREA WITH WATER.

CONTINUED ON PAGE: 2

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE — (201) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

GS 585

P5719 D05
EFFECTIVE: 05/01/89

POTASSIUM DICHROMATE

PAGE: 3
ISSUED: 05/17/89

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP): N/A

NFPA 704M RATING: 1-0-1 OXY

AUTOIGNITION TEMPERATURE: N/A

FLAMMABLE LIMITS: UPPER - N/A LOWER - N/A

FIRE EXTINGUISHING MEDIA
USE WATER SPRAY.

SPECIAL FIRE-FIGHTING PROCEDURES

FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE. MOVE CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL.

L SJAL FIRE & EXPLOSION HAZARDS

STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. NOTE:
DECOMPOSES AT BOILING POINT.

TOXIC GASES PRODUCED
NONE IDENTIFIED

EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT
NONE IDENTIFIED.

EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE
NONE IDENTIFIED.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV/TWA): 0.05 MG/M3

TLV IS FOR CHROMIUM (VI) COMPOUNDS, WATER SOLUBLE, AS CR.

SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED

PERMISSIBLE EXPOSURE LIMIT (PEL): 0.1 MG/M3

F (CEILING) IS FOR CHROMIC ACID AND CHROMATES, AS CR03.

CONTINUED ON PAGE: 4

SAL 000007365

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (201) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

P5719 D05

EFFECTIVE: 05/01/89

POTASSIUM DICHROMATE

GS 585

PAGE: 4

ISSUED: 05/17/89

=====

SECTION V - HEALTH HAZARD DATA (CONTINUED)

=====

TOXICITY OF COMPONENTS

INTRAPERITONEAL MOUSE LD50 FOR POTASSIUM DICHROMATE 37 MG/KG
CARCINOGENICITY: NTP: YES IARC: YES Z LIST: NO OSHA REG: NO

CARCINOGENICITY

THIS SUBSTANCE IS LISTED AS A NTP HUMAN CARCINOGEN AND AN IARC HUMAN
CARCINOGEN (GROUP 1).

REPRODUCTIVE EFFECTS

NONE IDENTIFIED.

EFFECTS OF OVEREXPOSURE

INHALATION: SEVERE IRRITATION OF RESPIRATORY SYSTEM, PROLONGED
CONTACT MAY CAUSE PERFORATED SEPTUM

SKIN CONTACT: IRRITATION, PROLONGED CONTACT MAY CAUSE DERMATITIS, AND
ULCERATION

EYE CONTACT: SEVERE IRRITATION OR BURNS

SKIN ABSORPTION: IS HARMFUL AND MAY BE FATAL

INGESTION: SEVERE BURNS, ULCERATION - MOUTH, THROAT, STOMACH, AND
MAY BE FATAL

CHRONIC EFFECTS: DAMAGE TO LIVER, KIDNEYS, BLOOD, LUNGS

TARGET ORGANS

BLOOD, RESPIRATORY SYSTEM, LUNGS, LIVER, KIDNEYS, EYES, SKIN, GI TRACT

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

DAMAGED SKIN

PRIMARY ROUTES OF ENTRY

INHALATION, INGESTION, SKIN CONTACT, EYE CONTACT, ABSORPTION

CONTINUED ON PAGE: 5

SAL 000007366

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (201) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

P5/19 D05
EFFECTIVE: 05/01/89

POTASSIUM DICHROMATE

68 585

PAGE: 5
ISSUED: 05/17/89

SECTION V - HEALTH HAZARD DATA (CONTINUED)

EMERGENCY AND FIRST AID PROCEDURES

INGESTION: CALL A PHYSICIAN. IF SWALLOWED, IF CONSCIOUS, GIVE LARGE AMOUNTS OF WATER. INDUCE VOMITING.

INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

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 RE-USE.

EYE CONTACT: IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

ACUTE: YES CHRONIC: YES FLAMMABILITY: YES PRESSURE: NO REACTIVITY: NO

EXTREMELY HAZARDOUS SUBSTANCE: NO

CERCLA HAZARDOUS SUBSTANCE: YES CONTAINS CHROMIUM (RQ = 1 LB)

TOXIC CHEMICALS: YES CONTAINS CHROMIUM

GENERIC CLASS: C15

TSCA INVENTORY: YES

STATE LISTS: FOR PRODUCTS SOLD IN THE STATE OF CALIFORNIA, THE STATE REQUIRES THAT WE PROVIDE TO USERS AND THEIR EMPLOYEES THE FOLLOWING MESSAGE: WARNING: THIS PRODUCT IS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

SECTION VI - REACTIVITY DATA

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: HEAT

INCOMPATIBLES: COMBUSTIBLE MATERIALS, ORGANIC MATERIALS, STRONG REDUCING AGENTS, STRONG ACIDS

DECOMPOSITION PRODUCTS: CHROMIUM OXIDE FUMES

CONTINUED ON PAGE: 6

SAL 000007367

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (201) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

P5719 D05
EFFECTIVE: 05/01/89

POTASSIUM DICHROMATE **68 585**

PAGE: 6
ISSUED: 05/17/89

SECTION VII - SPILL & DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE
WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. KEEP
COMBUSTIBLES (WOOD, PAPER, OIL, ETC.) AWAY FROM SPILLED MATERIAL. WITH
CLEAN SHOVEL, CAREFULLY PLACE MATERIAL INTO CLEAN, DRY CONTAINER AND
COVER; REMOVE FROM AREA. FLUSH SPILL AREA WITH WATER.

DISPOSAL PROCEDURE
DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL
ENVIRONMENTAL REGULATIONS.

EPA HAZARDOUS WASTE NUMBER: D001, D002 (IGNITABLE, CORROSIVE WASTE)

SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT

VENTILATION: USE GENERAL OR LOCAL EXHAUST VENTILATION TO MEET TLV
REQUIREMENTS.

RESPIRATORY PROTECTION: A RESPIRATOR WITH DUST/MIST FILTER IS RECOMMENDED. IF
AIRBORNE CONCENTRATION EXCEEDS TLV, A SELF-CONTAINED
BREATHING APPARATUS IS ADVISED.

EYE/SKIN PROTECTION: SAFETY GOGGLES, UNIFORM, APRON, RUBBER GLOVES ARE
RECOMMENDED.

SECTION IX - STORAGE AND HANDLING PRECAUTIONS

SAF-T-DATA* STORAGE COLOR CODE: YELLOW (REACTIVE)

STORAGE REQUIREMENTS
KEEP CONTAINER TIGHTLY CLOSED. STORE SEPARATELY AND AWAY FROM FLAMMABLE
AND COMBUSTIBLE MATERIALS.

SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

CONTINUED ON PAGE: 7

SAL 000007368

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (201) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

P5719 D05
EFFECTIVE: 05/01/89

POTASSIUM DICHROMATE

66 585

PAGE: 7
ISSUED: 05/17/89

SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION (CONTINUED)

DOMESTIC (D.O.T.)

PROPER SHIPPING NAME: POTASSIUM DICHROMATE (AIR ONLY)
HAZARD CLASS: ORM-A
UN/NA: NA1479 REPORTABLE QUANTITY: 1000 LBS.
LABELS: NONE
REGULATORY REFERENCES: 49CFR 172.101; 173.500; 173.510

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: OXIDIZING SUBSTANCES, N.O.S. (POTASSIUM DICHROMATE)
HAZARD CLASS: 5.1 I.M.O. PAGE: 5055
UN: UN1479 MARINE POLLUTANTS: NO PACKAGING GROUP: II
LABELS: OXIDIZING AGENT
REGULATORY REFERENCES: 49CFR 172.102; PART 176; IMO

A... (I.C.A.O.)

PROPER SHIPPING NAME: OXIDIZING SUBSTANCES, N.O.S. (POTASSIUM DICHROMATE)
HAZARD CLASS: 5.1
UN: UN1479 PACKAGING GROUP: II
LABELS: OXIDIZING AGENT
REGULATORY REFERENCES: 49CFR 172.101; 173.6; PART 175; ICAO/IATA

U.S. CUSTOMS HARMONIZATION NUMBER: 2841400001

N/A = NOT APPLICABLE OR NOT AVAILABLE
N/E = NOT ESTABLISHED

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET MEETS THE REQUIREMENTS OF THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ACT AND REGULATIONS PROMULGATED THEREUNDER (29 CFR 1910.1200 ET. SEQ.) AND THE CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PERSON TRAINED IN, OR SUPERVISED BY A PERSON TRAINED IN, CHEMICAL HANDLING. THE USER IS RESPONSIBLE FOR DETERMINING THE PRECAUTIONS AND DANGERS OF THIS CHEMICAL FOR HIS OR HER PARTICULAR APPLICATION. DEPENDING ON USAGE, PROTECTIVE CLOTHING INCLUDING EYE AND FACE GUARDS AND RESPIRATORS MUST BE USED TO AVOID CONTACT WITH MATERIAL OR BREATHING CHEMICAL VAPORS/FUMES.

EXPOSURE TO THIS PRODUCT MAY HAVE SERIOUS ADVERSE HEALTH EFFECTS. THIS
CONTINUED ON PAGE: 8

SAL 000007369

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (201) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

P5719 D05
EFFECTIVE: 05/01/89

POTASSIUM DICHROMATE **GS 585**

PAGE: 8
ISSUED: 05/17/89

CHEMICAL MAY INTERACT WITH OTHER SUBSTANCES. SINCE THE POTENTIAL USES ARE SO VARIED, BAKER CANNOT WARN OF ALL OF THE POTENTIAL DANGERS OF USE OR INTERACTION WITH OTHER CHEMICALS OR MATERIALS. BAKER WARRANTS THAT THE CHEMICAL MEETS THE SPECIFICATIONS SET FORTH ON THE LABEL. BAKER DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR PURPOSE. THE USER SHOULD RECOGNIZE THAT THIS PRODUCT CAN CAUSE SEVERE INJURY AND EVEN DEATH, ESPECIALLY IF IMPROPERLY HANDLED OR THE KNOWN DANGERS OF USE ARE NOT HEEDDED. READ ALL PRECAUTIONARY INFORMATION. AS NEW DOCUMENTED GENERAL SAFETY INFORMATION BECOMES AVAILABLE, BAKER WILL PERIODICALLY REVISE THIS MATERIAL SAFETY DATA SHEET. IF YOU HAVE ANY QUESTIONS, PLEASE CALL CUSTOMER SERVICE (1-800-JTBAKER) FOR ASSISTANCE.

COPYRIGHT 1989 J.T.BAKER INC.
* TRADEMARKS OF J.T.BAKER INC.

APPROVED BY QUALITY ASSURANCE DEPARTMENT.

-- LAST PAGE --

SAL 000007370

Material Safety Data Sheet

PIONEER CHLOR ALKALI COMPANY, INC.
4200 NCNB CENTER
700 LOUISIANA STREET
HOUSTON, TEXAS 77002

68 448

SODIUM HYDROXIDE, SOLUTION

(Liquid Caustic Soda)

This Material Safety Data Sheet is principally directed to managerial, safety, hygiene and medical personnel. The description of physical, chemical and toxicological properties and handling advice is based on experimental results and past experience. It is intended as a starting point for the development of health and safety procedures.

This Material Safety Data Sheet meets the material safety data sheet (MSDS) requirements of the federal OSHA Hazard Communication standard (29 CFR 1910.1200).

Synonyms: Caustic soda; Lye
CAS Registry Number: 1310-73-2
CAS Index Name: Sodium hydroxide (9CI)

I. PHYSICAL AND CHEMICAL PROPERTIES

Formula: NaOH — Aqueous
Formula Weight: 40.00 (solute)
Physical State/Description: Water — white to slightly hazy liquid at 68° F (20°C)
Flash Point: None
Boiling Point: 288-298°F (142-148°C) (50% Solution)
Odor: None
pH: Approx. 14 (as is)
Solubility: Miscible in all proportions in water. Soluble in alcohol and aldehydes
Specific Gravity (Water = 1): 1.5 (50% solution)
Vapor Pressure: 13 mm Hg at 140°F (60°C), water vapor

IN CASE OF SUSPECTED POISONING,
REFER TO THE INFORMATION IN SECTION VI:
HUMAN HEALTH AND THE PROCEDURE AND
EMERGENCY CONTACTS IN SECTION VIII; FIRST AID.
IN CASE OF SPILLAGE, REFER TO THE PROCEDURE
AND EMERGENCY CONTACTS IN SECTION X: SPILL
HANDLING OR CALL CHEMTREC (800) 424-9300.

II. CHEMICAL REACTIVITY

Contact with water or acids may result in generation of considerable heat, boiling and spattering. Heat generated may be sufficient to ignite nearby combustible materials. Reacts violently (or explosively) with many organic chemicals especially with nitrocarbons and chloro carbons. Reacts vigorously with aluminum, tin, zinc, and alloys which contain these metals to form flammable and explosive hydrogen gas.

Contact with certain food products (or their residues) containing reducing sugars may produce deadly carbon monoxide gas. Proper tank entry and occupancy procedures should be observed. Monitor tank atmosphere for presence of carbon monoxide gas.

III. STABILITY

Stable at ambient temperatures and atmospheric pressure, but slowly absorbs carbon dioxide from the air to form sodium carbonate. Does not undergo polymerization.

IV. FIRE HAZARD

Not considered flammable or combustible. Does not support combustion. However, contact with water or acids may generate sufficient heat to ignite nearby combustible materials. Contact with certain metals such as aluminum, tin or zinc will evolve flammable and explosive hydrogen gas.

V. FIREFIGHTING TECHNIQUE

Products of combustion are irritating to the respiratory tract and may cause breathing difficulty and pulmonary edema. Symptoms may be delayed several hours or longer depending upon the extent of exposure.

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate nonessential personnel from the fire area. Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing.

Use standard firefighting techniques to extinguish fires involving this material — use water spray, dry chemicals or carbon dioxide.

Keep fire-exposed containers cool with water spray to prevent rupture due to excessive heat. High pressure water hose may spread product from broken containers increasing contamination or fire hazard.

Contaminated buildings, areas and equipment must not be used until they are properly decontaminated.

VI. TOXICOLOGY

Citations to original sources of toxicity data are available in RTECS: accession numbers: WB4905000 and WB4900000 (NIOSH, 1983).

VII. HUMAN HEALTH

The principal routes of exposure are skin or eye contact and inhalation of mist. Sodium hydroxide is a strong alkali and is corrosive to any tissue with which it comes in contact. Effects from inhalation may vary from mild irritation to destructive burns depending on the severity of exposure. Severe pneumonitis may occur. Sodium hydroxide may cause irritation of the eyes and, with greater exposure, severe burns with possible blindness. Contact of the skin with sodium hydroxide may cause skin irritation and, with greater exposure, severe burns with scarring. Swallowing of sodium hydroxide may cause severe burns of the mouth, throat, and stomach. Death may result. Severe scarring of the throat may occur on recovery after swallowing sodium hydroxide. An increased number of esophageal cancer cases have been reported to occur in individuals who have scarring of the esophagus from swallowing

SODIUM HYDROXIDE SOLUTION

sodium hydroxide (NIOSH, 1978). There are no data available which address medical conditions that are generally recognized as being aggravated by exposure to sodium hydroxide.

VIII. FIRST AID

CALL A POISON CENTER OR A PHYSICIAN IMMEDIATELY

If a known exposure occurs or if poisoning is suspected, do not wait for symptoms to develop. Immediately start the recommended procedures below and simultaneously contact a Poison Center, a physician, or the nearest hospital. Inform the person contacted of the type and extent of exposure, describe the victim's symptoms, and follow the advice given.

FOR ADDITIONAL MEDICAL OR TOXICOLOGICAL INFORMATION, CALL COLLECT, DAY OR NIGHT, CHEMTREC (800) 424-9300

Ingestion

This material is corrosive. If swallowed, immediately give several glasses of water but do not induce vomiting. If vomiting does occur, give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious or convulsing person.

Skin Contact

Under a safety shower, immediately flush all affected areas with large amounts of running water for at least 15 minutes. Remove contaminated clothing and shoes. Do not attempt to neutralize with chemical agents. Get medical attention immediately. Wash clothing before reuse.

Eye Contact

Immediately flush the eyes with large quantities of running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. Do not attempt to neutralize with chemical agents. Obtain medical attention as soon as possible. Oils or ointments should not be used at this time. Continue the flushing for an additional 15 minutes if a physician is not immediately available.

Inhalation

If inhaled, remove to fresh air. If not breathing, clear victim's airway and start mouth-to-mouth artificial respiration, which may be supplemented by the use of a bag-mask respirator or manually triggered oxygen supply capable of delivering one liter per second or more. If victim is breathing, oxygen may be given from a demand-type or continuous-flow inhaler, preferably with a physician's advice. Get medical attention immediately.

IX. INDUSTRIAL HYGIENE

The recommendations described in this section are provided as general guidance for minimizing exposure when handling this product. Because use conditions will vary depending upon customer applications, specific safe handling procedures should be developed by a person knowledgeable of the intended use conditions and equipment. During the development of safe handling procedures, consideration should be given to the need for cleaning of equipment and piping systems to render them nonhazardous before maintenance and repair activities are performed. Waste resulting from these procedures should be handled in accordance with SECTION XIII — DISPOSAL OF MATERIAL.

Engineering Controls

In those cases where engineering controls are indicated by the use conditions, the following traditional exposure control techniques may be used to effectively minimize employee exposure; local exhaust ventilation, enclosed system design or process isolation and remote control in combination with appropriate use of personal protective equipment.

Ingestion

All food should be kept in a separate area away from the storage/use location. Eating, drinking and smoking should be prohibited in areas where there is a potential for significant exposure to this material. Before eating, hands and face should be thoroughly washed.

Skin Contact

Skin contact with liquid or its aerosol must be prevented through the use of impervious clothing, gloves and footwear selected with regard for use condition exposure potential.

Safety Showers — with quick opening valves which stay open, should be readily available in all areas where the material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

Eye Contact

Eye contact with liquid or aerosol must be prevented through the use of chemical safety glasses, goggles and a face shield selected with regard for use condition exposure potential.

Eye wash fountains — or other means of washing the eyes with a gentle flow of tap water should be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

Inhalation

If use conditions generate airborne mist, handle this material only in an open (e.g., outdoor) or well ventilated area. Where adequate ventilation is not available, use NIOSH-approved dust, mist and fume respirators to reduce exposure. Where exposure potential under the use conditions necessitates a higher level of protection, use a positive-pressure, air-supplied respirator.

Either half-face respirators in combination with chemical goggles or full-face respirators may be required in certain use conditions to prevent eye contact or irritation.

Exposure Limits

The Federal OSHA Permissible Exposure Limit (PEL) is 2 mg/m³ as an 8-hour time-weighted average (29 CFR 1910.1000).

The American Conference of Governmental Industrial Hygienists (ACGIH) has recommended a Threshold Limit Value (TLV) of 2 mg/m³ as a ceiling limit (ACGIH, 1984).

PEL's and TLV's refer to airborne concentrations measured in the breathing zone by appropriate sampling techniques.

X. SPILL HANDLING

Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices (refer to SECTION IX: INDUSTRIAL HYGIENE).

Any person entering an unknown concentration of a mist should use a positive-pressure, self-contained breathing apparatus or a positive-pressure, supplied-air respirator with escape pack.

Small spills can be handled routinely. Use adequate ventilation and/or wear a NIOSH-approved dust, mist and fume respirator to prevent inhalation exposure. Wear protective clothing to prevent skin and eye contact. Use the following procedures:

CS 448

SODIUM HYDROXIDE SOLUTION

Flush spill area with copious amounts of water. Use dilute acid (preferably acetic acid) to neutralize any residual traces of caustic immediately after flushing. Sodium bicarbonate may also be used to partially neutralize spill.

Do not contaminate waters by disposal of flushings. Large spills should be handled according to a predetermined plan. For assistance in developing a plan, contact Pioneer Chlor Alkali Company, Inc. St. Gabriel, LA (504) 642-1800 (East or Cent.) or Henderson, NV (702) 565-8781 (West).

IN CASE OF SPILL EMERGENCY, DAY OR NIGHT
CALL (800) 424-9300 CHEMTREC.

XI. CORROSIVITY TO MATERIALS OF CONSTRUCTION

Non-corrosive to rubber at atmospheric temperatures. Sodium hydroxide is slowly corrosive to iron, copper, and glass. Aluminum, tin and zinc (including alloys containing any of these metals) will be attacked and are unsuitable as materials of construction. At elevated temperatures, the product may cause caustic embrittlement of steel.

XII. STORAGE REQUIREMENTS

Containers should be stored in a cool, dry, well ventilated area away from strong acids, flammable materials and sources of heat or flame. Store away from foodstuffs or animal feed. Exercise due caution to prevent damage to or leakage from the container.

XIII. DISPOSAL OF MATERIAL

Material that cannot be used or chemically reprocessed should be disposed of at an approved facility in accordance with any applicable regulations under the Resource Conservation and Recovery Act. **NOTE:** State

GS 448

and local regulations may be more stringent than federal.

For bulk storage recommendations, contact Pioneer Chlor Alkali Company, Inc. St. Gabriel, LA (504) 642-1800 (East or Cent.) or Henderson, NV (702) 565-8781 (West).

XIV. DISPOSAL OF CONTAINER

Dispose of empty containers according to any applicable regulations under the Resource Conservation and Recovery Act. **NOTE:** State and local regulations may be more stringent than federal.

REFERENCES CITED

American Conference of Governmental Industrial Hygienists (ACGIH). (1984). *Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment and Biological Exposure Indices with Intended Changes for 1984-85*. ACGIH; Cincinnati, OH

National Institute for Occupational Safety and Health (NIOSH). (1983). *The Registry of Toxic Effects of Chemical Substances (RTECS)*. NIOSH; Cincinnati, OH

National Institute for Occupational Safety and Health (NIOSH). (1978). "Occupational Health Guidance for Sodium Hydroxide," NIOSH; Cincinnati, OH

FOR INFORMATION CONTACT

(East or Central)
Pioneer Chlor Alkali Company, Inc.
P.O. Box 23
St. Gabriel, Louisiana 70776
Tel. (504) 642-1800

(West)
Pioneer Chlor Alkali Company, Inc.
P.O. Box 86
Henderson, Nevada 89015
Tel. (702) 565-8781

SAL 000007373

SARA NOTIFICATION

Product Name: 50% Caustic Soda

This product contains a toxic chemical as listed below subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1988 and 40 CFR Part 372.

Material or Component:	Sodium Hydroxide (NaOH)
CAS Number:	001310-73-2
Common Name:	Caustic Soda
% by Volume:	31.9%
% by Weight:	50%

Exposure Limits:	2 mg/m ³
PEL:	2 mg/m ³ , Ceiling
TLV:	

SARA/TITLE III HAZARD CATEGORIES

Immediate (acute) Health:	Yes
Delayed (chronic) Health:	No
Reactive Hazard:	Yes
Fire Hazard:	No
Sudden Release of Pressure:	No

NOTICE: This notification must not be detached from this MSDS. Any copying and redistribution of this MSDS must include this notification.

SAL 000007374

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (201) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

PSY-1 D05
EFFECTIVE: 05/01/89

POTASSIUM DICHROMATE

PAGE: 1
ISSUED: 05/17/89

J.T.BAKER INC., 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865 **68 585**

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: POTASSIUM DICHROMATE
COMMON SYNONYMS: DICHROMIC ACID, DIPOTASSIUM SALT; BICHROMATE OF POTASH
CHEMICAL FAMILY: CHROMIUM COMPOUNDS
FORMULA: $K_2Cr_2O_7$
FORMULA WT.: 294.19
CAS NO.: 7778-50-9
HOSH/RTECS NO.: HX7680000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: 3090,3093,3092,3094

PRECAUTIONARY LABELING

HAZARD SAF-T-DATA* SYSTEM

HEALTH	-	4	EXTREME (CANCER CAUSING)
FLAMMABILITY	-	0	NONE
REACTIVITY	-	3	SEVERE (OXIDIZER)
CONTACT	-	3	SEVERE (LIFE)

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

U.S. PRECAUTIONARY LABELING

POISON DANGER

MAY CAUSE BURNS OR EXTERNAL ULCERS. CAUTION: CONTAINS CHROMIUM (VI), CANCER HAZARD. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. MAY BE FATAL IF SWALLOWED OR ABSORBED THROUGH SKIN. HARMFUL IF INHALED. KEEP FROM CONTACT WITH CLOTHING AND OTHER COMBUSTIBLE MATERIALS. DO NOT STORE NEAR COMBUSTIBLE MATERIALS. DO NOT GET IN EYES, ON SKIN, ON CLOTHING. DO NOT BREATHE DUST. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. IN CASE OF FIRE, SOAK WITH WATER. IN CASE OF SPILL, SWEEP UP AND REMOVE. FLUSH SPILL AREA WITH WATER.

CONTINUED ON PAGE: 2