



MATERIAL SAFETY DATA SHEET

MSDS NUMBER 840,311

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24 HOUR EMERGENCY ASSISTANCE		GENERAL MSDS ASSISTANCE	
SHELL: 713-473-9461 CHEMTREC: 800-424-9300		SHELL: 713-241-4819	
ACUTE HEALTH 3	FLAME 1	HAZARD RATING HAZARD RATING LEAST - 0 SLIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4	BE SAFE READ OUR PRODUCT SAFETY INFORMATION ... AND PASS IT ON (PRODUCT LIABILITY LAW REQUIRES IT)
*For acute and chronic health effects refer to the discussion in Section III			

SECTION I		NAME
PRODUCT	HCU/CR2 SEWER DRAIN SLUDGE	
CHEMICAL NAME	MIXTURE (SEE SECTION II-A)	
CHEMICAL FAMILY	NONE	
SHELL CODE	WWW	

SECTION II-A		PRODUCT/INGREDIENT	
NO.	COMPOSITION	CAS NUMBER	PERCENT
P	HCU/CR2 SEWER DRAIN SLUDGE	MIXTURE	100
1	SPENT ABRASIVE MATERIAL	MIXTURE	60-70
1A	SILICON DIOXIDE	7631-86-9	*
1B	SULFIDES	MIXTURE	*
2	SOIL, GRAVEL, SAND, GLASS, TRASH, ETC.	MIXTURE	22-32
3	VESSEL SLUDGE	MIXTURE	4
4	INSULATION	MIXTURE	1-2
4A	ASBESTOS FIBERS	1332-21-4	*
5	NICKEL COMPOUNDS	MIXTURE	1
6	ALUMINA COMPOUNDS	MIXTURE	1
7	SILICA GEL	63231-67-4	1

COMPONENT 1- IS USED ABRASIVE BLASTING MATERIAL WHICH PROBABLY CONTAINS OTHER UNIDENTIFIED ORGANIC AND INORGANIC COMPOUNDS.

SECTION II-B		ACUTE TOXICITY DATA	
NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
P	NOT AVAILABLE		

SECTION III		HEALTH INFORMATION	

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).			

EYE CONTACT
MATERIAL MAY BE IRRITATING TO THE EYES.

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SKIN CONTACT
MATERIAL MAY BE IRRITATING TO THE SKIN. BASED UPON THE PRESENCE OF COMPONENT 5, MAY CAUSE SKIN SENSITIZATION.

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INHALATION

DUST MAY CAUSE IRRITATION TO THE NOSE, THROAT AND RESPIRATORY TRACT. INHALATION OF DUST CONTAINING SILICON DIOXIDE MAY CAUSE SILICOSIS. INHALATION OF DUST CONTAINING ASBESTOS FIBER MAY CAUSE ASBESTOSIS (FIBROSIS OF THE LUNGS), LUNG CANCER OR MESOTHELIOMA (SEE OTHER HEALTH EFFECTS).

INGESTION

ALTHOUGH INGESTION IS NOT A PROBABLE ROUTE OF EXPOSURE, MATERIAL MAY BE HARMFUL IF SWALLOWED.

SIGNS AND SYMPTOMS

IRRITATION AS NOTED ABOVE. SKIN SENSITIZATION (ALLERGY) MAY BE EVIDENCED BY RASHES, ESPECIALLY HIVES. LUNG DAMAGE (SCARRING, BRONCHITIS, EMPHYSEMA) MAY BE EVIDENCED BY SHORTNESS OF BREATH, ESPECIALLY ON EXERTION, AND MAY BE ACCOMPANIED BY CHRONIC COUGH.

AGGRAVATED MEDICAL CONDITIONS

PREEXISTING EYE, SKIN, AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL. IMPAIRED RESPIRATORY FUNCTION FROM PREEXISTING DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL. PREEXISTING SKIN OR LUNG ALLERGIES MAY INCREASE THE CHANCE OF DEVELOPING INCREASED ALLERGY SYMPTOMS FROM EXPOSURE TO THIS MATERIAL.

OTHER HEALTH EFFECTS

IN REFERENCE TO COMPONENT 1A, THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER HAS DETERMINED THERE IS SUFFICIENT EVIDENCE FOR THE CARCINOGENICITY OF CRYSTALLINE SILICON DIOXIDE IN EXPERIMENTAL ANIMALS AND LIMITED EVIDENCE FOR THE CARCINOGENICITY OF CRYSTALLINE SILICON DIOXIDE IN HUMANS. IN REFERENCE TO COMPONENT 4A, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, THE NATIONAL TOXICOLOGY PROGRAM AND THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER HAVE DETERMINED THERE IS SUFFICIENT EVIDENCE FOR THE CARCINOGENICITY OF ASBESTOS IN BOTH HUMANS AND EXPERIMENTAL ANIMALS. IN REFERENCE TO COMPONENT 5, THE NATIONAL TOXICOLOGY PROGRAM AND THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER HAVE DETERMINED THERE IS SUFFICIENT EVIDENCE FOR THE CARCINOGENICITY OF NICKEL AND CERTAIN NICKEL COMPOUNDS IN EXPERIMENTAL ANIMALS. SOME EPIDEMIOLOGICAL STUDIES ON WORKERS IN SOME NICKEL REFINERIES HAVE DEMONSTRATED AN EXCESS RISK OF CANCER OF THE NASAL CAVITY AND LUNG.

SECTION IV**OCCUPATIONAL EXPOSURE LIMITS**

NO.	PEL/TWA	OSHA PEL/CEILING	TLV/TWA	ACGIH TLV/STEL	OTHER
1A	0.05 MG/M3*		0.05 MG/M3		
4A	0.2 F/CC	1 F/CC 30 MIN	2 F/CC, A1		
*1			0.5 F/CC, A1		
*2			2 F/CC, A1		
*3			0.2 F/CC, A1		
*4			2 F/CC, A1		
5	1 MG/M3**		1 MG/M3**		
.	0.1 MG/M3***		0.1 MG/M3***		
7	10 MG/M3		10 MG/M3		

*CRYSTALLINE SILICA, CRISTOBALITE, RESPIRABLE. *1-AMOSITE. *2-CHRYSTOTILE. *3-CROCIDOLITE.
*4-OTHER FORMS OF ASBESTOS. **METAL AND INSOLUBLE COMPOUNDS, AS NI. ***SOLUBLE COMPOUNDS, AS NI.

SECTION V**EMERGENCY AND FIRST AID PROCEDURES****EYE CONTACT**

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION.

SKIN CONTACT

IMMEDIATELY REMOVE CONTAMINATED CLOTHING/SHOES, WIPE EXCESS FROM SKIN AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. USE SOAP IF AVAILABLE OR FOLLOW BY WASHING WITH SOAP AND WATER. DO NOT REUSE CLOTHING UNTIL THOROUGHLY CLEANED. GET MEDICAL ATTENTION.

INHALATION

REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. GET MEDICAL ATTENTION.

INGESTION

DO NOT INDUCE VOMITING. GET MEDICAL ADVICE.

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SECTION VI

SUPPLEMENTAL HEALTH INFORMATION

NONE KNOWN.

SECTION VII

PHYSICAL DATA

BOILING POINT: N/AV
(DEG F)SPECIFIC GRAVITY: N/AV
(H2O=1)VAPOR PRESSURE: N/AV
(MM HG)MELTING POINT: N/AV
(DEG F)SOLUBILITY: INSOLUBLE
(IN WATER)VAPOR DENSITY: N/AV
(AIR=1)

EVAPORATION RATE (N-BUTYL ACETATE = 1): N/AV

APPEARANCE AND ODOR:
BLACK SOLID/SLUDGE

SECTION VIII

FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD:
>200 DEG FFLAMMABLE LIMITS /% VOLUME IN AIR
LOWER: N/AV UPPER: N/AV

EXTINGUISHING MEDIA

USE WATER FOG, FOAM, DRY CHEMICAL OR CO2.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS

SULFUR OXIDES AND HYDROGEN SULFIDE, BOTH OF WHICH ARE TOXIC, MAY BE RELEASED UPON COMBUSTION.

SECTION IX

REACTIVITY

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:

THIS MATERIAL MAY FORM HIGHLY TOXIC HYDROGEN SULFIDE ON CONTACT WITH ACIDS; PREVENT CONTACT WITH ACIDS.

HAZARDOUS DECOMPOSITION PRODUCTS

CARBON MONOXIDE, SULFUR OXIDES, HYDROGEN SULFIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.

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SECTION X**EMPLOYEE PROTECTION**
-----**RESPIRATORY PROTECTION**

IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER A FULL-FACE, ATMOSPHERE-SUPPLYING RESPIRATOR OR AIR-PURIFYING RESPIRATOR FOR PARTICULATES.

PROTECTIVE CLOTHING

AVOID CONTACT OF DUST, VAPORS AND FUMES WITH EYES. WEAR CHEMICAL GOGGLES IF THERE IS LIKELIHOOD OF CONTACT WITH EYES. AVOID CONTACT OF DUST, VAPORS AND FUMES WITH SKIN AND CLOTHING. WEAR CHEMICAL-RESISTANT GLOVES AND PROTECTIVE CLOTHING.

ADDITIONAL PROTECTIVE MEASURES

USE EXPLOSION-PROOF VENTILATION AS REQUIRED TO CONTROL PARTICULATE CONCENTRATIONS.

SECTION XI**ENVIRONMENTAL PROTECTION**
-----**SPILL OR LEAK PROCEDURES**

MAY BURN, ALTHOUGH NOT READILY IGNITABLE. USE CAUTIOUS JUDGEMENT WHEN CLEANING UP LARGE SPILLS. WEAR RESPIRATOR AND PROTECTIVE CLOTHING, AS APPROPRIATE. *** SHOVEL AND SWEEP UP OR USE INDUSTRIAL VACUUM CLEANER. AVOID GENERATING DUST CLOUDS. *** PUT INTO CONTAINERS FOR RECLAIMING OR DISPOSAL.

SECTION XII**SPECIAL PRECAUTIONS**

KEEP AWAY FROM ACIDS. THIS MATERIAL MAY REACT WITH ACIDS AND PRODUCE TOXIC HYDROGEN SULFIDE. STORE IN A COOL, DRY PLACE WITH ADEQUATE VENTILATION. KEEP AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, APPLYING COSMETICS, OR USING TOILET FACILITIES. LAUNDRY CONTAMINATED CLOTHING BEFORE REUSE.

SECTION XIII**TRANSPORTATION REQUIREMENTS**
-----**DEPARTMENT OF TRANSPORTATION CLASSIFICATION:**

TRANSPORTATION REQUIREMENTS DETERMINED ON A CASE BY CASE BASIS BY SHIPPING LOCATION.

SECTION XIV**OTHER REGULATORY CONTROLS**

WITHIN THE LIMITATIONS SPECIFIED IN 40 CFR 710.4(D)(2), THIS BYPRODUCT IS EXCLUDED FROM LISTING ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE EDS SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV**STATE REGULATORY INFORMATION**

THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

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STATE LISTED COMPONENT	PERCENT	STATE CODE
SILICON DIOXIDE (CAS NO: 7631-86-9)	*	FL, MA, NJ, PA
ASBESTOS (CAS NO: 1332-21-4)	*	CA, FL, IL, MA, ME, MN, NJ, PA, RI, CA65
NICKEL COMPOUNDS (CAS NO: MIXTURE)	1	CA, FL, IL, MA, ME, MN, NJ, PA, RI, CA65
SILICA GEL (CAS NO: 63231-67-4)	1	CA

CA = CALIFORNIA HAZ. SUBST. LIST; CA65 = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS TOX. SUBST. LIST; MA = MASSACHUSETTS SUBST. LIST; ME = MAINE HAZ SUBST. LIST; MN = MINNESOTA HAZ. SUBST. LIST; NJ = NEW JERSEY HAZ. SUBST. LIST; PA = PENNSYLVANIA HAZ. SUBST. LIST; RI = RHODE ISLAND HAZ. SUBST. LIST.

THIS MATERIAL CONTAINS A CHEMICAL OR CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND/OR REPRODUCTIVE TOXICITY.

SECTION XVISPECIAL NOTES

NEW MSDS. SEE ENVIRONMENTAL DATA SHEET FOR WASTE DISPOSAL AND OTHER ENVIRONMENTAL INFORMATION.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED: SEPTEMBER 23, 1991

G. A. VAN GELDER

BE SAFE
READ OUR PRODUCT
SAFETY INFORMATION ...AND PASS IT ON
(PRODUCT LIABILITY LAW
REQUIRES IT)

SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
P. O. BOX 4320
HOUSTON, TX 77210

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ABS-044437



ENVIRONMENTAL DATA SHEET

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97449 (5-87)

PRODUCT ▶ HCU/CR2 SEWER DRAIN SLUDGE

PRODUCT
CODE ▶ WWWW

SECTION I

PRODUCT/COMPOSITION

NO.	COMPONENT	CAS NUMBER	PERCENT
P	HCU/CR2 SEWER DRAIN SLUDGE	MIXTURE	100
1	SPENT ABRASIVE MATERIAL	MIXTURE	60-70
1A	SILICON DIOXIDE	7631-86-9	*
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2	SOIL, GRAVEL, SAND, GLASS, TRASH, ETC.	MIXTURE	22-32
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COMPONENT 1 IS USED ABRASIVE BLASTING MATERIAL WHICH PROBABLY CONTAINS OTHER UNIDENTIFIED ORGANIC AND INORGANIC COMPOUNDS.

SECTION II

SARA TITLE III INFORMATION

NO.	EHS RQ (LBS) (*1)	EHS TPQ (LBS) (*2)	SEC 313 (*3)	313 CATEGORY (*4)	311/312 CATEGORIES (*5)
P					H-1, H-2
5			YES	NICKEL COMPOUNDS	

-FOOTNOTES-

- *1 = REPORTABLE QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE, SEC.302
*2 = THRESHOLD PLANNING QUANTITY, EXTREMELY HAZARDOUS SUBSTANCE, SEC 302
*3 = TOXIC CHEMICAL, SEC 313
*4 = CATEGORY AS REQUIRED BY SEC 313 (40 CFR 372.65 C), MUST BE USED ON TOXIC RELEASE INVENTORY FORM
*5 = HAZARD CATEGORY FOR SARA SEC. 311/312 REPORTING
HEALTH H-1 = IMMEDIATE (ACUTE) HEALTH HAZARD H-2 = DELAYED (CHRONIC) HEALTH HAZARD
PHYSICAL P-3 = FIRE HAZARD P-4 = SUDDEN RELEASE OF PRESSURE HAZARD
P-5 = REACTIVE HAZARD

SECTION III

ENVIRONMENTAL RELEASE INFORMATION

EPA - COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT. UNDER EPA-CERCLA ("SUPERFUND") RELEASES TO AIR, LAND OR WATER WHICH EXCEED THE REPORTABLE QUANTITY MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER, 800-424-8802.

THE REPORTABLE QUANTITY FOR A RELEASE OF THIS MATERIAL IS 100 LBS., WHICH IS BASED ON THE RCRA CODE D003.

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