

POLY-DRILL DRILLING**EMERGENCY (403) 259-5112**

1824 - 104 AVENUE, S.W.

CALGARY, ALBERTA, CANADA T2W 0A8

TEL. (403) 259-5112 FAX (403) 255-7185

I. PRODUCT IDENTIFICATION

Trade Name(s): 1330/133X

WHMIS CLASSIFICATION: Non regulated

TDG Classification: Non dangerous goods TDG label N.R.

Manufacturer: Poly-Drill Drilling

II. PHYSICAL DATA

Boiling Point: Not available

Solubility in Water: Solubility limited by solution viscosity

Density (g/ml): 1.08 at 25 C

Appearance and Odor: Blue. Odor slight.

Specific Gravity (@25 Deg. C.): 1.09

pH: 8.1 (1.0% solution)

Physical state: Liquid

III. FIRE AND EXPLOSION DATA

Flash Point (method used): (PMCC): >100 C

Conditions of flammability: Intense heat, open flame

Hazardous combustion products: Products of incomplete hydrocarbon combustion

Upper and Lower flammable limits: Not available

Extinguishing media: Use water spray, foam, dry chemical, or carbon dioxide.

IV. REACTIVITY

Chemical stability: Stable under normal conditions

Hazardous Polymerization: Will not occur

Incompatible substances: Avoid strong oxidizing and reducing agents.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, and products of incomplete hydrocarbon combustion.

V. HEALTH HAZARD DATA

TOXICITY RATING: Practically non-harmful

Routes of Exposure and Effects:

SKIN: Slight irritant. Prolonged contact may cause skin irritation or dermatitis in some individuals.

EYE: No effects of exposure expected with the exception of possible irritation.

INHALATION: If misted, no effects of exposure expected.

Exposure limits: TLV-TWA: Mineral oil, mist 5 mg/m3

Carcinogenicity: None of the components of this product are listed as carcinogenes by IARC and ACGIH

Sensitization of product: Not suspected to be a sensitizer.

Teratogenicity: Not available

Mutagenicity: Not available

VI. EMERGENCY AND FIRST AID PROCEDURES

SKIN: Wash exposed area with soap and water. If irritation or abnormalities persist, call a physician.

EYE: Immediately flush eyes with water for 15 minutes. If irritation or abnormalities persist, call a physician.

INHALATION: Remove to fresh air. If breathing is difficult, give oxygen and call a physician.

INGESTION: Do not induce vomiting. Call a physician immediately.

VII. HANDLING AND USE PRECAUTIONS

Storage requirements: Keep container closed when not in use. Store in a cool dry location away from oxidizing and reducing agents.

Waste Disposal: Product should be disposed of in accordance with applicable local, Provincial, and Federal regulations.

Steps must be taken as product is released or spilled. Clean spill areas thoroughly to avoid hazardous slippery conditions.

VII. INDUSTRIAL HYGIENE CONTROL MEASURES

Respiratory Protection: None normally required.

Ventilation: If mist and/or vapors are present, use air-purifying respirator or self-contained breathing apparatus, but rarely required.

Eye Protection: Safety glasses if personally preferred.

Gloves: Generally not necessary. Personal preference.

DEPARTMENT OF TRANSPORTATION INFORMATION

Shipping Name: Drilling Mud

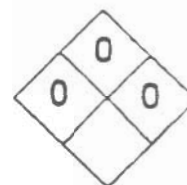
Hazard Class: Not hazardous

Hazardous Substances: None

Cautionary Labeling: None required



MATERIAL SAFETY DATA SHEET



SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: Various	EMERGENCY TELEPHONE NUMBER: CHEMTREL (800) 255-3924
ADDRESS: 610 South 38th Street Kansas City, KS 66106 (Layne Christensen Safety Dept.)	
CHEMICAL NAME: Bentonite (powder, chips, pellets)	TRADE NAME AND SYNONYMS: Drill Mud, Common Clay
CHEMICAL FAMILY: Natural Minerals	FORMULA: n/a

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT(S) (Chemical and Common Names)	%	OSHA PEL	ACGIH TLV	CAS NUMBER
Sodium Montmorillonite (Western Bentonite)	100	10 mg/m ³	5 mg/m ³	n/a
Silica (SiO ₂) as quartz, cristobalite or tridymite	< 0.01			

SECTION III - PHYSICAL AND CHEMICAL CHARACTERISTICS

APPEARANCE AND COLOR: Fine, brownish-gray powder, no odor.

BOILING POINT: n/a	VAPOR DENSITY (Air = 1): n/a	SPECIFIC GRAVITY (H ₂ O = 1): 2.5	VAPOR PRESSURE: n/a
SOLUBILITY IN WATER: Forms mud		EVAPORATION RATE (BUTYL ACETATE = 1): n/a	

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT: n/a	FLAMMABLE LIMITS	LEL: n/a	UEL: n/a
AUTO-IGNITION TEMPERATURE: n/a	EXTINGUISHING MEDIA: Appropriate for surrounding fire		

SPECIAL FIRE FIGHTING PROCEDURES: n/a

UNUSUAL FIRE AND EXPLOSION HAZARDS: n/a

SECTION V - HEALTH HAZARD DATA

EXPOSURE LIMITS	TLV: 5 mg/m ³		STEL: n/a	CEILING: 10 mg/m ³	
IS CHEMICAL A CARCINOGEN?	YES		IS CHEMICAL A MUTAGEN?	YES	
	NO	x		NO	x

EFFECTS OF EXPOSURE

INHALATION: Primary route of exposure. Avoid breathing dust. Long term exposure could result in Silicosis or other respiratory disorders.

SKIN CONTACT/ABSORPTION: Prolonged contact may irritate skin.

EYE CONTACT: Eye irritation can result.

INGESTION: n/a

EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Avoid breathing dust. Remove to fresh air.

INGESTION: n/a

SKIN CONTACT: Wash skin after use.

EYE CONTACT: Flush eyes with water for at least 15 minutes. Get medical aid if irritation persists.

SECTION VI - PHYSICAL HAZARDS (REACTIVITY DATA)

STABILITY	STABLE	X	CONDITIONS TO AVOID: n/a
	UNSTABLE		

INCOMPATIBILITY (Materials to Avoid): n/a

HAZARDOUS DECOMPOSITION PRODUCTS: n/a

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID: n/a
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK DATA

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Sweep up for disposal or reuse. Do not flush with water as material can become very slippery. Waste material may be landfilled.

SECTION VIII - PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify Type): NIOSH/MSHA approved dust mask.

PROTECTIVE GLOVES: Cloth

EYE PROTECTION: Safety glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: n/a

VENTILATION: As necessary to keep dust levels down.

WORK/HYGIENIC PRACTICES: Avoid inhalation of dusts. Avoid skin contact.

SECTION IX - TRANSPORTATION AND STORAGE DATA

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Store in dry area. Do not remove or deface labels.

HAZARD CLASS: n/a

DOT CLASSIFICATION: none

PLACARDING REQUIREMENTS: none

PREPARER: Jim Wright

TITLE: Industrial Hygienist

DATE: 1/97

MATERIAL SAFETY DATA SHEET

HEXANE

PRODUCT CODE NUMBER(S): 5600-1, 5600-2, 5600-3, 5600-4, 5601-2, 5601-7, 5602-2, 5603-7, 5604-2, 5605-1, 5604-4

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: Hexane; Normal hexane; Hexanes

Chemical Family: Aliphatic hydrocarbon

Chemical Formula: C₆H₁₄

Product Use: Laboratory solvent

Manufacturer's Name and Address:

Caledon Laboratories Ltd.

40 Armstrong Avenue

Georgetown, Ontario, L7G 4R9

Telephone No: (905) 877-0101

Fax No: (905) 877-6666

Emergency Telephone No: CANUTEC (613) 996-6666

HAZARDOUS INGREDIENTS OF MATERIALS

Ingredients	%	TLV Units	CAS No.
n-Hexane	>85	50 ppm	110-54-3
Methylpentanes, may include 2-methylpentane	<5	500 ppm	107-63-5
Methylcyclopentane	<10	Not established	96-37-7

PHYSICAL DATA

Physical State: Liquid

Odour and Appearance: Clear, colourless volatile liquid, gasoline-like odour

Odour Threshold (ppm): 64-244 ppm. Poor warning properties, odour threshold exceeds TLV.

Vapour Pressure (mm Hg): 124 mm Hg at 20°C

Vapour Density (Air = 1): 2.97

Evaporation Rate: 0.3 (Ethyl ether = 1)

Boiling Point (°C): 67-69°C

Freezing Point (°C): -95°C

pH: Not applicable

Specific Gravity: 0.66 at 20°C

Coefficient of Water/Oil distribution: Not available

SHIPPING DESCRIPTION

UN: 1208

T.D.G. Class: 3.1

Pkg. Group: II

REACTIVITY DATA

Chemical Stability: Stable

Incompatibility with other substances: Oxygen and strong oxidizing agents can increase risk of fire and explosion.

Reactivity: Avoid heat, sparks and open flame. Confined materials may explode upon heating.

Hazardous Decomposition Products: CO_x

FIRE AND EXPLOSION DATA

Flammability: Flammable. Readily ignited in most ambient conditions. Vapour is heavier than air and may "flash back" to an ignition source.

Extinguishing Media: Dry chemical, foam, or carbon dioxide. Water may be used to cool containers, but is not suitable for fighting fire involving this material.

Flash Point (Method Used): -21°C (TCC)

Autoignition Temperature: 225°C

Upper Flammable Limit (% by volume): 7.5

Lower Flammable Limit (% by volume): 1.1

Hazardous Combustion Products: CO_x

Sensitivity to Impact: Probably not sensitive

Sensitivity to Static discharge: May be ignited by static discharge.

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

Toxicological Data:

LD₅₀: (rat, oral) 28,710 mg/kg; (dermal, rabbit) >2g/kg

LC₅₀: (inh, mouse) 35,000 ppm/1h

Effects of Acute Exposure to Product:

Inhaled: 10 minute exposure at 1,500 ppm can cause irritation of respiratory tract, nausea, and headache; 10 minutes at 5,000 ppm can cause dizziness, drowsiness. Massive exposures can cause central nervous system depression, unconsciousness and death.

In contact with skin: May cause mild irritation. Can be absorbed through skin in harmful amounts.

In contact with eyes: Vapour can cause irritation; liquid can cause pain and irritation.

Ingested: May cause vomiting, headache, depression and swelling of the intestines. May be aspirated into the lungs if swallowed, which may result in pulmonary edema and chemical pneumonitis.

Effects of Chronic Exposure to Product: Causes harm to the nervous system producing numbness or tingling in the extremities, spasms in the legs, tiredness, muscle weakness and more severe nerve damage. Peripheral neuropathy developed within 7 months in mice at 250 ppm. Methyl pentanes have produced kidney damage in male rats only, but no comparable health hazard for kidney.