

MATERIAL SAFETY DATA SHEET



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EMERGENCY PHONE NO. (604) 535-6699

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WHMIS HAZARD INDEX:

DEGREE OF HAZARD:

HEALTH 0
FIRE 0
REACTIVITY 0
OTHER: B (GLASSES & GLOVES)

HAZARD RATING:

0 LEAST
1 SLIGHT
2 MODERATE
3 HIGH
4 EXTREME

SECTION 1

PRODUCT IDENTIFICATION

PRODUCT NAME:	EXTREME KWIK-SET
CHEMICAL IDENTIFICATION:	Calcium Sulphate
MATERIAL USE:	Oilwell Cement
WHMIS CLASSIFICATION:	Not Hazardous Material
WORK PLACE HAZARD:	Not Applicable

TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION:	Not Dangerous Goods
PACKAGE GROUP:	Not Applicable
CAS NUMBER:	Not Applicable
MSDS CODE:	Not Applicable

SECTION 2

HAZARDOUS INGREDIENTS

INGREDIENT:	No Hazardous Ingredients
PERCENTAGE:	
CAS NUMBER:	
LD (50):	
LC (50):	

EXTREME PRODUCTS & DRILLING SUPPLIES INC.

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EXTREME KWIK-SET

MATERIAL SAFETY DATA SHEET

SECTION 3PHYSICAL DATA

APPEARANCE AND ODOUR	Greyish White to Buff Powder. Little odour.
DENSITY (SPECIFIC GRAVITY)	2.7
BOILING POINT:	N/A
MELTING POINT:	N/A
SOLUBILITY:	2% @ 40°C
EVAPORATION RATE: (EE=1):	N/A
VAPOUR PRESSURE: (MM HG):	N/A
VAPOUR DENSITY: (AIR = 1):	N/A
pH:	7-8 (Slurry)

SECTION 4FIRE AND EXPLOSION

FLASHPOINT:	Not Combustible
FLAMMABLE LIMIT:	Not Combustible
AUTO IGNITION TEMP:	Not Combustible
EXTINGUISHING MEDIA:	Not Combustible
SPECIAL FIRE FIGHTING PROCEDURES:	No Special Requirements
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None

SECTION 5REACTIVITY DATA

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	None Known
HAZARDOUS POLYMERIZATION:	Will Not Occur
HAZARDOUS DECOMPOSITION PRODUCTS:	None

EXTREME PRODUCTS & DRILLING SUPPLIES INC.**PAGE 3 OF 4****MATERIAL SAFETY DATA SHEET****EXTREME KWIK-SE****SECTION 6 HEALTH HAZARDS****ROUTE OF ENTRY:****(X) SKIN****(X) EYE CONTACT****(X) INHALATION****() INGESTION****SKIN CONTACT:**

May dry skin; may develop heat sufficient to cause burns if large mass is in contact with skin during hardening (hydration).

EYE CONTACT:

Particles may cause irritation.

INHALATION:

Nuisance dust may cause sneezing and nasal irritation. May contain trace amounts of crystalline silica, which is known to cause silicosis when exposed to greater amounts.

INGESTION:

Avoid ingestion; product may harden on contact with water. May cause obstruction.

SECTION 7 PREVENTATIVE MEASURES**SKIN PROTECTION:**

Standard work clothes and gloves.

EYE PROTECTION:

Nuisance dust, suggest goggles.

VENTILATION:

No special requirements. 10 changes per hour suggested.

RESPIRATORY PROTECTION:

Nuisance dust, suggest NIOSH/MESA approved dust mask.

LEAK & SPILL PROCEDURE:

Vacuum or sweep-up.

WASTE DISPOSAL:

Dispose of in compliance with government regulations and local requirements.

STORAGE REQUIREMENTS:

Store in a cool, dry area.

EXTREME PRODUCTS & DRILLING SUPPLIES INC.

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EXTREME KWIK-SET

MATERIAL SAFETY DATA SHEET

SECTION 8FIRST AID MEASURES

SKIN.

Wash promptly with water. If irritation develops consult a physician.

EYE.

Rinse eyes with plenty of running water for 10-15 minutes including under eyelids. If irritation persists, contact a physician.

INHALATION:

Remove to fresh air.

INGESTION:

Product may harden on contact with water. May result in obstruction if ingested. See physician.

SECTION 9PREPARATION DATE

DATE ISSUED:

May 1, 1997

BY

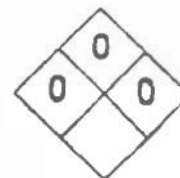
PRODUCT SAFETY COMMITTEE

THE DATA REPRESENTED HEREIN IS BELIEVED ACCURATE AND REFLECTS OUR BEST PROFESSIONAL JUDGMENT. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY USE, OR ANY OTHER WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF SUCH DATA. THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, OR THAT ANY SUCH USE DOES NOT INFRINGE ANY PATENT. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS OF USE BEYOND OUR CONTROL AND WITH WHICH WE MAY BE UNFAMILIAR, WE DO NOT ASSUME ANY RESPONSIBILITY FOR THE RESULTS OF SUCH APPLICATION. THIS INFORMATION IS FURNISHED UPON THE CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS OWN DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR HIS PARTICULAR PURPOSE.

DATE REVISED:



MATERIAL SAFETY DATA SHEET



SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: Venous

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 Mineral

FORMULA: n/a

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT(S) (Chemical and Common Name(s))	%	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 ODOR: Fine, brownish-gray powder, no odor.

BUILDING 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		NO

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	107-83-5
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.

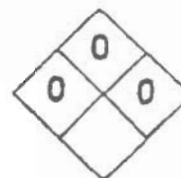
In contact with eyes: Vapour can cause irritation; liquid can cause pain and irritation.

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.



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 Mineral

FORMULA: n/a

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT(S) (Chemical and Common Name(s))	%	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		NO

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

WILL NOT OCCUR

X

CONDITIONS TO AVOID: n/a

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 identified.

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 Wecht

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: C_6H_{14}

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

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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.

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