



## MATERIAL SAFETY DATA SHEET

### I PRODUCT INFORMATION

**PRODUCT NAME:** DRILLSOL® PLUS  
**PRODUCT USE:** Hydrocarbon Drilling Fluid  
**CHEMICAL IDENTIFICATION:** Straight Run Middle Distillate  
**MANUFACTURER INFORMATION:** ENERCHEM INTERNATIONAL INC.  
Suite 450, 440 – 2<sup>nd</sup> Avenue SW  
Calgary, AB T2P 5E9  
(403) 269-1500

**SUPPLIER'S INFORMATION:** ENERCHEM INTERNATIONAL INC.  
Suite 450, 440 – 2<sup>nd</sup> Avenue SW  
Calgary, AB T2P 5E9  
(403) 269-1500

**EMERGENCY NUMBER – CANUTEC:** (613) 996-6666

### II HAZARDOUS INGREDIENTS

<u>INGREDIENT</u>	<u>CAS#</u>	<u>% (vol/vol)</u>	<u>LD50</u>	<u>LC50</u>
Straight Run Middle Distillate	64741-44-2	60-100	Rat (oral): 5,000 mg/kg Rabbit (skin): 2,000 mg/kg	Rat (inh): 1,700 mg/m <sup>3</sup> / 4 hr.

### III PHYSICAL DATA

PHYSICAL STATE	Liquid
ODOUR and APPEARANCE	Petroleum base odour, pale yellow liquid
ODOUR THRESHOLD	ND
REID VAPOR PRESSURE (kPa)	<1.0
VAPOR DENSITY (AIR=1.0)	>1.0
EVAPORATION RATE (BUTYL ACETATE = 1.0)	<1.0
BOILING POINT (°C)	125 to 450
FREEZE / POUR POINT (°C)	-15
pH	ND
SPECIFIC GRAVITY	0.835 to 0.850
COEFFICIENT of WATER / OIL DISTRIBUTION	ND
ABSOLUTE DENSITY (kg/m <sup>3</sup> @ 15°C)	835 to 850
KINEMATIC VISCOSITY (cSt @ 40°C)	ND
ANILINE POINT (°C)	75 to 80

## IV FIRE or EXPLOSION HAZARD

<b>MEANS OF EXTINCTION:</b>	Dry chemical, carbon dioxide, water fog, foam.
<b>FLASHPOINT (°C, Cleveland Open Cup):</b>	>100
<b>UPPER EXPLOSION LIMIT (% VOL):</b>	ND
<b>LOWER EXPLOSION LIMIT (% VOL):</b>	ND
<b>AUTO-IGNITION TEMPERATURE (°C):</b>	ND
<b>HAZARDOUS COMBUSTION PRODUCTS:</b>	Oxides of carbon and products of incomplete combustion.
<b>EXPLOSION DATA:</b>	Flammable vapours may explode in a confined area when mixed with air.
<b>SENSITIVITY TO STATIC DISCHARGE:</b>	May be sensitive to static discharge when vapours are present at the lower or upper explosive limits. Ground equipment before transfer.
<b>SPECIAL PROCEDURES:</b>	DO NOT enter any confined area without proper protective equipment.

## V REACTIVITY DATA

<b>STABILITY:</b>	Stable
<b>REACTIVITY:</b>	Hazardous polymerization will not occur.
<b>INCOMPATIBLE MATERIALS:</b>	Strong oxidizing agents.
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	On combustion, oxides of carbon.

## VI TOXICOLOGICAL PROPERTIES

### SKIN CONTACT

May cause delayed skin irritation and blistering. Repeated or prolonged contact may cause defatting and dermatitis.

### SKIN ABSORPTION

Extensive, prolonged or repeated contact may result in significant absorption.

### EYE CONTACT

Liquid and vapours may be irritating to the eyes. This product may cause irritation, redness and pain. Not known to cause permanent injury to eye tissue. Discomfort and blurring of vision may occur.

### INHALATION

May be irritating to the nose, throat and respiratory tract. High vapour concentrations can displace oxygen and cause central nervous system depression, visual disturbances, nausea, vomiting, systematic poisoning and death. Saturated vapours can be encountered in confined spaces and/or under conditions of poor ventilation.

### INGESTION

May be harmful if liquid is aspirated into the lungs or swallowed. May cause irritation, a burning sensation of the mouth and throat, abdominal pain, central nervous system depression, visual disturbances, nausea and vomiting.

### CHRONIC OVER EXPOSURE EFFECTS

May cause depression, dizziness, numbness, tremors, impaired memory, headaches and nausea.

### EXPOSURE LIMITS

ACGIH TLV = 400 ppm (TWA 8 hr.). Check with your local regulatory agency for the limit in effect in your area.

### IRRITANCY

Liquid and vapour may cause irritation of the skin, eyes, nose, throat and respiratory system.

### SENSITIZATION TO MATERIAL

No information is available.

### CARCINOGENICITY, TERATOGENICITY, EMBRYOTOXICITY, REPRODUCTIVE TOXICITY and MUTAGENICITY

Not listed as carcinogenic by IARC or OSHA. Not listed in the NTP annual report. No known toxicological hazards.

### TOXICOLOGICALLY SYNERGISTIC PRODUCTS

No information is available.

## VII PREVENTIVE MEASURES

### PERSONAL PROTECTIVE EQUIPMENT

Chemical cartridge respirator with organic vapour cartridge for up to 200 ppm. For emergency or planned entry into unknown concentrations, use a self-contained breathing apparatus.

EYE/FACE PROTECTION: Chemical goggles or a facemask.

SKIN PROTECTION: Gloves, coveralls, boots, etc. as needed to prevent skin exposure.

### SPECIFIC ENGINEERING CONTROLS

General ventilation is normally adequate for small-scale use at room temperature or below. Local exhaust ventilation is normally needed with large-scale use or at elevated temperatures.

### LEAK AND SPILL PROCEDURES

Provide adequate ventilation, protective clothing and respirators. Remove sources of heat and flame. Absorb liquid on dry clay, sand, sawdust or other absorbent material.

### WASTE DISPOSAL

Combustible wastes may be burned in an approved incineration facility. Consult local environmental authorities before disposal.

### HANDLING PROCEDURES AND EQUIPMENT

Use minimal quantities in designated areas with adequate ventilation and away from sources of heat or sparks. Containers should be covered when not in use.

### STORAGE REQUIREMENTS

Store in a tightly closed container in a cool area away from immediate work areas and incompatible materials. No sources of heat, flame or sparks should be present in the storage area.

### EMPTY CONTAINERS

The container for this product can present an explosion or fire hazard even when empty. **DO NOT** cut, puncture or weld on or near the container. Since emptied containers retain product residue, follow label warnings even after the container has been emptied.

## VIII FIRST AID MEASURES

### SKIN CONTACT

Flush contaminated area with warm water for at least 15 minutes. Under running water, remove contaminated clothing, shoes and leather goods. If irritation persists, obtain medical attention.

### EYE CONTACT

Immediately flush the contaminated eye(s) with warm water for at least 15 minutes. If irritation persists, obtain medical attention.

### INHALATION

Remove source of contamination or remove victim to fresh air. If breathing has stopped begin artificial respiration IMMEDIATELY. Obtain medical attention IMMEDIATELY.

### INGESTION

Never give anything by mouth if victim is unconscious or convulsing. Rinse mouth thoroughly with water. **DO NOT INDUCE VOMITING.** Vomiting should only be induced under the direction of a physician or a poison control centre. Have victim drink 300 mL of water to dilute material. Obtain medical attention IMMEDIATELY.

### GENERAL

Provide general supportive measures (comfort, warmth, rest). Consult a doctor for all exposures except minor instances of inhalation or contact.

## IX PREPARATION INFORMATION

### PREPARED BY

ENERCHEM INTERNATIONAL INC. TECHNICAL SERVICES GROUP – (780) 980-1682

### DATE PREPARED

November 21, 2003

### LATEST DATE REVISED

March 16, 2010

## X CLASSIFICATIONS

### TDG

NOT REGULATED

### WHMIS

CLASS D, DIVISION 2B (skin and eye irritant)

## XI ADDITIONAL INFORMATION

### MSDS PREPARATORY STATEMENT

The information presented herein is, to the best of our knowledge and belief, accurate and reliable as of the date completed, relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any processes. ENERCHEM INTERNATIONAL INC. makes no guarantee, warranty, or representation as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. ENERCHEM INTERNATIONAL INC. does not accept liability for any loss or damage that may occur from the use of this information nor do we offer any warranty against patent infringement. DRILLSOL® PLUS is a trademark.

### ABBREVIATIONS and DEFINITIONS

<	less than	NAV	not available
>	greater than	ND	not determined
cSt	centistokes	ppm	parts per million
°C	degrees Celcius	TLV	threshold limit values – ACG IH term used to express the airborne after day concentration of a material to which nearly all persons can be exposed day without adverse effects
kg	kilograms		
kPa	kilopascals		
mL	millilitres	TWA	time-weighted average exposure – the airborne concentration of a material to which a person is exposed when calculated as a weighted average over a period of time
m <sup>3</sup>	cubic metres		
NAP	not applicable		

### REFERENCES USED

ACGIH	American Conference of Governmental Industrial Hygienists (US)
CANUTEC	Canadian Transport Emergency Centre
CAS	Chemical Abstracts Service
CPR	Controlled Products Regulations
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program (US)
OSHA	Occupational Safety and Health Administration (US)
TDG	Transportation of Dangerous Goods
WHMIS	Workplace Hazardous Materials Information System ∞