



MATERIAL SAFETY DATA SHEET

I PRODUCT INFORMATION

PRODUCT NAME	EAC-5000
PRODUCT USE	Asphaltene Solvent / Dispersant
CHEMICAL IDENTIFICATION	Blend of Surfactants in an Aromatic Solvent
MANUFACTURER INFORMATION	ENERCHEM INTERNATIONAL INC. 1406 - 8 Street, Nisku, Alberta T9E 7M1 (780) 955-3388
SUPPLIER INFORMATION	ENERCHEM INTERNATIONAL INC. 1406 - 8 Street, Nisku, Alberta T9E 7M1 (780) 955-3388
EMERGENCY NUMBER – CANUTEC	(613) 996-6666

II HAZARDOUS INGREDIENTS

INGREDIENT	CAS#	% (vol/vol)	LD₅₀	LC₅₀
Toluene	108-88-3	60 - 100	Rat (oral): 5,300 mg/kg Rabbit (skin): 12,124 mg/kg	Rat (inh): 7,525 ppm / 4 hr.

III PHYSICAL DATA

PHYSICAL STATE	Liquid
ODOUR and APPEARANCE	Aromatic / Light Yellow Liquid
ODOUR THRESHOLD	ND
REID VAPOR PRESSURE (kPa)	ND
VAPOR DENSITY (AIR=1.0)	> 1.0
EVAPORATION RATE (NBuAc = 1.0)	< 1.0
BOILING POINT (°C)	> 35
FREEZE / POUR POINT (°C)	> -40
pH	ND
SPECIFIC GRAVITY	0.864
COEFFICIENT of WATER / OIL DISTRIBUTION	ND

IV FIRE OR EXPLOSION HAZARD

MEANS of EXTINCTION	Dry chemical, carbon dioxide, water fog, foam.
FLASHPOINT (°C, Seta Flash Closed Cup)	6
UPPER EXPLOSION LIMIT (% vol)	ND
LOWER EXPLOSION LIMIT (% vol)	ND
AUTO-IGNITION TEMPERATURE (°C)	ND
HAZARDOUS COMBUSTION PRODUCTS	Oxides of carbon and products of incomplete combustion.
EXPLOSION DATA: SENSITIVITY to IMPACT	When mixed with air, flammable vapours can explode in a confined area.
EXPLOSION DATA: SENSITIVITY to STATIC DISCHARGE	Expected to be sensitive to static discharge when vapours are present at the lower and upper explosive limits. Ground equipment before transfer.

V REACTIVITY DATA

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

VI TOXICOLOGICAL PROPERTIES

SKIN CONTACT

May cause skin irritation and blistering, even for short contact. Repeated or prolonged contact may cause defatting and dermatitis.

SKIN ABSORPTION

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

EYE CONTACT

Vapours are irritating to the eyes. This product causes irritation, redness and pain.

INHALATION

Irritating to the nose, throat and respiratory tract. High vapour concentrations can cause headaches, dizziness, drowsiness and nausea.

INGESTION

Harmful or fatal if liquid is aspirated into lungs. Causes irritation, a burning sensation of the mouth and throat, and abdominal pain.

CHRONIC OVER EXPOSURE EFFECTS

May cause depression, dizziness, numbness, tremors, impaired memory, headaches and nausea. Kidney and liver damage may result.

EXPOSURE LIMITS

TOLUENE – ACGIH TLV = 100 ppm (TWA), 150 ppm (STEL)

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

The ingredients of this product are not classified as carcinogenic by ACGIH or IARC. No adverse reproductive effects are anticipated.

TOXICOLOGICALLY SYNERGISTIC PRODUCTS

No information is available.

VII PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT

Chemical cartridge respirator with organic vapour cartridge for up to 1,000 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) 955-3388

DATE PREPARED

November 21, 2003

DATE REVISED

February 1, 2004

DATE REVISED

September 30, 2004

X CLASSIFICATIONS

WHMIS:

Class B, Division 2: Flammable Liquid

Class D, Division 2B: Toxic (Skin and Eye Irritant)

TDG:

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. (TOLUENE)

UN#: 1993

Class: 3

Packing Group: II

XI ADDITIONAL INFORMATION

MSDS PREPARATORY STATEMENT

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ABBREVIATIONS and DEFINITIONS

<	less than
>	greater than
°C	degrees Celsius
CEILING	ceiling concentration – the concentration of an airborne substance that must not be exceeded at <u>any</u> time
kg	kilograms
kPa	kilopascals
ml	millilitres
m ³	cubic metres
NAP	not applicable
NAV	not available
NBuAc	normal butyl acetate – used as standard for determining evaporation rate
ND	not determined
ppm	parts per million
STEL	short-term exposure limit – the maximum concentration to which workers can be periodically exposed for a period up to 15 minutes without suffering from irritation, chronic or irreversible tissue change or narcosis of sufficient degree to increase risk of accidental injury or impair ability for self-rescue
TLV	threshold limit values – the airborne concentration of a material to which nearly all persons can be exposed day after day without adverse effects
TWA	time-weighted average – the average concentration for a normal 8-hour work day or 40-hour work week to which nearly all workers can be repeatedly exposed without adverse effect

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
SUPPLIERS	Material Safety Data Sheets