INITIAL CONTAINMENT
Contain spilled material

LARGE SPILLS PROCEDURE:
Contain spilled material. Clean up spilled material immediately, observing precautions in the Protective Equipment Section. Place in suitable container for recovery or disposal. Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

SMALL SPILLS PROCEDURE:
Clean up spilled material immediately, observing precautions in the Protective Equipment Section. Place in suitable container for recovery or disposal. Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

## SECTION 7. HANDLING AND STORAGE

HANDLING
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin and clothing. Avoid ingestion and inhalation.

HANDLING (PHYSICAL ASPECTS):
Avoid excessive heat. Avoid contact with acids or oxidizers.

STORAGE PRECAUTIONS:
Store in a cool dry area. Avoid extreme temperatures. Keep away from acids and oxidizers.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

EYE/FACE PROTECTION REQUIREMENTS:
Wear safety glasses with side shields (or goggles) and a face shield, if splashing of the material may occur. Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

SKIN PROTECTION REQUIREMENTS:
Wear appropriate protective gloves and clothing to prevent skin exposure.

RESPIRATORY PROTECTION REQUIREMENTS:
Follow the OSHA respirator regulations found in 29 CFR 1910.134. Always use a NIOSH approved respirator when required. Use of a NIOSH approved dust respirator is recommended when using or handling this product.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

FORM .....Solid, fine-grained powder
PARTICLE SIZE.....<40 um, 80% <20um
COLOR.....Dark grey
ODOR.....Weak organic odor from entrained xanthates
ODOR THRESHOLD.....None
BOILING POINT.....Not applicable (1050-2300°C in an inert atmosphere)
SOLUBILITY IN WATER.....Slight or very slight
SPECIFIC GRAVITY.....3.5 (Water = 1) in bulk
MELTING/FREEZING POINT.....Not applicable (will burn first unless in an inert atmosphere)
pH.....7.5 to 8.5
% VOLATILES.....8.1% @ 100°C
IGNITION TEMPERATURE.....Between 500-600°C (generates SO2 and zinc, lead vapors)

## SECTION 10. STABILITY AND REACTIVITY

STABILITY:
Stable under normal temperatures and pressures.

INCOMPATIBILITY WITH OTHER MATERIALS:
Reacts violently with iodine pentachloride. Incompatible with iodine monochloride, hydrogen peroxide, strong oxidizers, and strong acids. May release toxic and flammable hydrogen sulfide gas on contact with acids.

DECOMPOSITION:
This material can decompose by high temperatures forming sulfur oxides, zinc oxide, lead and lead oxide, and toxic and flammable hydrogen sulfide gas.

CONDITIONS TO AVOID:
Contact with incompatible materials (see above), excessive heat and contact with acids and oxidizers.

## SECTION 11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:
Contact with eyes causes irritation.

SKIN EFFECTS:
Contact with skin may cause skin irritation.

ACUTE ORAL EFFECTS:
Causes gastrointestinal irritation with nausea, vomiting and diarrhea. The toxicological properties of this substance have not been fully investigated.

ACUTE INHALATION EFFECTS:
Dust is irritating to the nose, throat, and respiratory tract. May cause effects similar to those described for ingestion. The toxicological properties of this substance have not been fully investigated.

REPRODUCTIVE AND BIRTH EFFECTS:
Unborn and nursing children can be exposed to lead through their mother. This may cause premature births, smaller babies, and decreased mental ability in the infant. High levels of exposure may cause abortion and damage the male reproductive system.

CHRONIC EFFECTS:
In adults, lead exposure may decrease reaction time, possibly affect the memory, cause weakness in fingers, wrists, and ankles, increase blood pressure in middle-aged men, and cause anemia - a blood disorder.

Unborn and nursing children can be exposed to lead through their mother. This may cause premature births, smaller babies, and decreased mental ability in the infant.

GENETIC TOXICITY:
Lead compounds may have an effect on chromosomes.

## SECTION 12. ECOLOGICAL INFORMATION

Lead concentrate is insoluble in water. Certain elements are known to bioaccumulate or bioconcentrate in select environmental media.

**Lead**: Lead compounds are highly persistent in water. Dissolved lead compounds bioaccumulate in plants and animals, both aquatic and terrestrial. In most surface water and groundwater, lead forms compounds with anions such as hydroxides, carbonates, sulfates, and phosphates and precipitates out of the water column. Lead may occur as sorbed ions or surface coatings on sediment mineral particles or may be carried in colloidal particles in surface water. Most lead is strongly retained in soil, resulting in little mobility. Lead may be immobilized by ion exchange with hydrous oxides or clays or by chelation with humic or fulvic acids in the soil.

**Zinc**: Zinc in the aquatic environment is adsorbed onto iron and manganese oxides, clay minerals, and organic material in sediments or suspended solids in surface waters. The mobility of zinc in soil is dependent on soil conditions, such as cation exchange capacity, pH, redox potential, and chemical species present in the soil. In general, zinc sorbs strongly to soil particulates and, unless it occurs in a soluble form such as zinc sulfate, is not highly mobile in soil. In aquatic systems, zinc bioaccumulates in both plants and animals. Zinc also bioaccumulates in terrestrial plants, vertebrates, and mammals, with plant uptake from soil dependent on the plant species, soil pH, and soil composition. In general, zinc does not biomagnify through food chains.

The mobility of metals is media dependent. Most metals will bind with organic ligands, reducing their mobility in soil and water. Mobility in air is determined by particle size.

## SECTION 13. DISPOSAL CONSIDERATIONS

If material cannot be returned to process or salvage, dispose of only in accordance with applicable regulations.

## SECTION 14. TRANSPORT INFORMATION

| | |
|---|---|
| PROPER SHIPPING NAME | Environmentally Hazardous Substance, Solid, n.o.s. (contains lead sulfide) |
| TRANSPORT CANADA HAZARD CLASS | 9.2 |
| U.S. DOT HAZARD CLASS | 9 |
| TRANSPORT CANADA AND U.S. DOT PRODUCT IDENTIFICATION NUMBER | UN3077 |
| MARINE POLLUTANT | No |
| IMO CLASSIFICATION | MHB (Materials Hazardous Only in Bulk) |

## SECTION 15. REGULATORY INFORMATION

U.S.
HAZARDOUS UNDER HAZARD COMMUNICATION STANDARD:

| | | |
|---|---|---|
| Lead Sulfide | Y | |

INGREDIENTS LISTED ON TSCA INVENTORY Y

CERCLA SECTION 103 HAZARDOUS SUBSTANCES

| | | |
|---|---|---|
| Lead Sulfide | Y | RQ: 10 pounds |
| Zinc Compounds | Y | RQ: None assigned |

EPCRA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE
None of the ingredients qualify
EPCRA SECTION 311/312 HAZARD CATEGORIES
Delayed (Chronic) Health Hazard - Carcinogen

EPCRA SECTION 313 TOXIC RELEASE INVENTORY

| | |
|---|---|
| Lead Compounds | Percent by Weight: 60 to 70 |
| Zinc Compounds | Percent by Weight: 14 to 21 |

CALIFORNIA PROPOSITION 65: Lead compounds are chemicals known to the State of California to cause cancer and reproductive toxicity.

**CANADIAN:**
WHMIS CLASSIFICATION: Controlled Product, Classification D2A
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

## SECTION 16. OTHER INFORMATION

The information in this Material Safety Data Sheet is based on the following references:

American Conference of Governmental Industrial Hygienists, 1991, Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition (Lead Revision 1995).
American Conference of Governmental Industrial Hygienists, 1996, Guide to Occupational Exposure Values.
American Conference of Governmental Industrial Hygienists, 1996, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices - 1995-1996.
Clayton and Clayton, 1994, Patty's Industrial Hygiene and Toxicology, Fourth Edition.
European Economic Community, Commission Directives 91/155/EEC and 67/548/EEC.
Lewis, Richard J., Sr., 1991, Hazardous Chemicals Desk Reference, Second Edition.
Industry Canada, SOR/88-66, as amended, Controlled Products Regulations.
Merck & Co., Inc., 1989, The Merck Index, An Encyclopedia of Chemicals, Drugs, and Biologicals, Eleventh Edition.
National Library of Medicine, National Toxicology Information Program, 1996, Hazardous Substance Data Bank.
Principles of Clinical Toxicology, 1994
Sax, N. Irving, 1984, Dangerous Properties of Industrial Materials, Sixth Edition.
U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, 1993, Toxicological Profile for Lead.
U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, 1995, Update Toxicological Profile for Silica.
U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, 1994, Update Toxicological Profile for Zinc.
U.S. Environmental Protection Agency, Online Office of Health and Environmental Assessment, Environmental Criteria and Assessment Office, 1996, Integrated Risk Information System.

U.S. Occupational Safety and Health Administration, 1989, Code of Federal Regulations, Title 29, Part 1910.

**Notice to Reader**

Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. Teck Cominco Metals Ltd. extends no warranty and assumes no responsibility for the accuracy of the content and expressly disclaims all liability for reliance thereon. This material safety data sheet provides guidelines for the safe handling and processing of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

# LUBRICATING OIL; PETROLEUM OIL

* * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* M S D S *
* *
* Canadian Centre for Occupational Health and Safety *
* * * * * * * * * * * * Issue : 2001-1 (February, 2001) *

*** IDENTIFICATION ***

**MSDS RECORD NUMBER** : 2313142
**PRODUCT NAME(S)** : TRANSCAL-N
LUBRICATING OIL; PETROLEUM OIL
**PRODUCT IDENTIFICATION** : MSDS No. 0135104 US/ENGLISH
CAS NUMBER: 64742-65-0
**DATE OF MSDS** : 1999-12-09
**CURRENCY NOTE** : This MSDS was provided to CCOHS in electronic form on 2000-05-31

*** MANUFACTURER INFORMATION ***

**MANUFACTURER** : BP Marine America's
**ADDRESS** : Post Office Box 4518
Houston Texas
U.S.A. 77210-4518

Telephone: 630-434-6377 (OTHER PRODUCT SAFETY INFORMATION, USA)
**EMERGENCY TELEPHONE NO.** : 800-447-8735 (HEALTH INFORMATION)
613-996-6666 (SPILL INFORMATION, CANUTEC, Canada)

*** MATERIAL SAFETY DATA ***

**MSDS No.** 0135104 US/ENGLISH

## SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**MANUFACTURER/SUPPLIER:**
BP Marine America's
PO Box 4518
Houston, TX 77210-4518 U.S.A.

**EMERGENCY HEALTH INFORMATION:**
1 (800) 447-8735

**EMERGENCY SPILL INFORMATION:**
1 (800) 424-9300 CHEMTREC (USA)

**OTHER PRODUCT SAFETY INFORMATION:**
1 (630) 434-6377 (USA)

**SUBSTANCE:** TRANSCAL-N

**TRADE NAMES/SYNONYMS:** LUBRICATING OIL; PETROLEUM OIL

CREATION DATE: Dec 09 1999
REVISION DATE: Dec 21 1999

## SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: SOLVENT-DEWAXED HEAVY PARAFFINIC DISTILLATE
CAS NUMBER: 64742-65-0
EC NUMBER (EINECS): 265-169-7
PERCENTAGE: <100

COMPONENT: HYDROTREATED HEAVY PARAFFINIC DISTILLATE
CAS NUMBER: 64742-54-7
EC NUMBER (EINECS): 265-157-1
PERCENTAGE: <100

(See Section 8, "Exposure Controls, Personal Protection", for exposure guidelines)

## SECTION 3 HAZARDS IDENTIFICATION

**NFPA RATINGS (SCALE 0-4):** HEALTH=1 FIRE=1 REACTIVITY=0

**EMERGENCY OVERVIEW:**
COLOR: yellow
PHYSICAL FORM: liquid
ODOR: hydrocarbon odor
MAJOR HEALTH HAZARDS: Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

**POTENTIAL HEALTH EFFECTS:**
INHALATION:
No significant health hazards identified.
SKIN CONTACT:
Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. Heated material can cause thermal burns.
EYE CONTACT:
No significant health hazards identified.
INGESTION:
Ingestion causes gastrointestinal irritation and diarrhea.

## SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Get medical attention.

SKIN CONTACT: Wash exposed skin with soap and water. Remove contaminated clothing and thoroughly clean and dry before reuse. Get medical attention if irritation develops.

EYE CONTACT: Flush eyes with plenty of water.

INGESTION: If swallowed, drink plenty of water. Get immediate medical attention. Induce vomiting only at the instructions of a physician. Do not give anything by mouth to unconscious or convulsive person.

## SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Slight fire hazard.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical, regular foam, water

FIRE FIGHTING: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Water or foam may cause frothing.

FIRE FIGHTING PROTECTIVE EQUIPMENT: Firefighters should wear full bunker gear, including a positive pressure self contained breathing apparatus.

FLASH POINT: 410 F (210 C)

FLAMMABILITY CLASSIFICATION: Not Flammable.

HAZARDOUS COMBUSTION PRODUCTS:
Thermal decomposition products or combustion: hydrocarbons, oxides of carbon

## SECTION 6 ACCIDENTAL RELEASE MEASURES

Stop leak if possible without personal risk. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Cover with plastic sheet or tarp to minimize spreading and protect from contact with water. Prevent spreading by diking, ditching, or absorbing on inert materials.

## SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Do not store in unlabeled containers. Keep away from heat, sparks and flame. Store in a cool, dry place. Store in a well-ventilated area. Keep container tightly closed. Keep separated from incompatible substances.

HANDLING: Keep away from all ignition sources. Use only with adequate ventilation. Do not eat, drink or smoke in areas of use or storage. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet facilities. Remove contaminated clothing and thoroughly clean and dry before reuse. Wash thoroughly after work using soap and water.
SPECIAL PRECAUTIONS: Empty containers may contain toxic,

flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards.

## SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
SOLVENT-DEWAXED HEAVY PARAFFINIC DISTILLATE:
MINERAL OIL MIST:
5 mg/m3 OSHA TWA
5 mg/m3 ACGIH TWA (Notice of Intended Changes 1993-1994)
10 mg/m3 ACGIH STEL (Notice of Intended Changes 1993-1994)
5 mg/m3 MEXICO TWA
10 mg/m3 MEXICO STEL

HYDROTREATED HEAVY PARAFFINIC DISTILLATE:
MINERAL OIL MIST:
5 mg/m3 OSHA TWA
5 mg/m3 ACGIH TWA (Notice of Intended Changes 1993-1994)
10 mg/m3 ACGIH STEL (Notice of Intended Changes 1993-1994)
5 mg/m3 MEXICO TWA
10 mg/m3 MEXICO STEL

VENTILATION: Use with adequate ventilation. Control airborne concentrations below the exposure guidelines.

EYE PROTECTION: None required; however, use of eye protection is good industrial practice.

CLOTHING: Avoid repeated or prolonged contact. Wear protective clothing if prolonged or repeated contact is likely.

GLOVES: Wear protective gloves if prolonged or repeated contact is likely.

RESPIRATOR: Use with adequate ventilation.
Avoid breathing vapor or mist.
If ventilation is inadequate, use a NIOSH certified respirator with an organic vapor cartridge and P95 particulate filter.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid
APPEARANCE: clear
COLOR: yellow
ODOR: hydrocarbon odor
BOILING POINT: 649 F (343 C)
FREEZING POINT: Not available
POUR POINT: 10.0 F (-12.2 C)
VAPOR PRESSURE: <0.1 mmHg @ 38 C
VAPOR DENSITY (air=1): >1

SPECIFIC GRAVITY (water=1): 0.873
WATER SOLUBILITY: almost insoluble
PH: Not available
VOLATILITY: negligible
ODOR THRESHOLD: Not available
EVAPORATION RATE: very slow, water=1
VISCOSITY: 150-160 SUS @ 38 C
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

## SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

INCOMPATIBILITIES: strong oxidizing materials

HAZARDOUS DECOMPOSITION:
Thermal decomposition products or combustion: hydrocarbons, oxides of carbon

POLYMERIZATION: Will not polymerize.

## SECTION 11 TOXICOLOGICAL INFORMATION

EYE IRRITATION: Testing not conducted. See Other Toxicity Data.

SKIN IRRITATION: Testing not conducted. See Other Toxicity Data.

DERMAL LD50: Testing not conducted. See Other Toxicity Data.

ORAL LD50: Testing not conducted. See Other Toxicity Data.

INHALATION LC50: Testing not conducted. See Other Toxicity Data.

OTHER TOXICITY DATA:
Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on information from similar products, the ingredients, technical literature, and/or professional experience.

No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program, the U.S. Occupational Safety and Health Act, or the International Agency for Research on Cancer (IARC).

## SECTION 12 ECOLOGICAL INFORMATION

Ecological testing has not been conducted on this product by BP Amoco.

## SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

## SECTION 14 TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: Not regulated.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: Not regulated.

LAND TRANSPORT ADR/RID: Not regulated.

AIR TRANSPORT IATA/ICAO: Not regulated.

MARITIME TRANSPORT IMDG: Not regulated.

## SECTION 15 REGULATORY INFORMATION

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR Part 302.4): This product is not reportable under 40 CFR Part 302.4.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR Part 355): This product is not regulated
under Section 302 of SARA and 40 CFR Part 355.

SARA TITLE III SECTION 311/312 HAZARDOUS CATEGORIZATION (40 CFR Part 370):
- ACUTE: N
- CHRONIC: N
- FIRE: N
- REACTIVE: N
- SUDDEN RELEASE: N

SARA TITLE III SECTION 313 (40 CFR Part 372): This product is not regulated under Section 313 of SARA and 40 CFR Part 372.

STATE REGULATIONS:
- California Proposition 65: N

TSCA INVENTORY STATUS: Listed on inventory.

OSHA HAZARD COMMUNICATION STANDARD: Contains a component listed by ACGIH.
Contains a component listed by OSHA.

EC INVENTORY (EINECS/ELINCS): In compliance.

JAPAN INVENTORY (MITI): Not determined.

AUSTRALIA INVENTORY (AICS): Not determined.

KOREA INVENTORY (ECL): Not determined.

CANADA INVENTORY (DSL): Listed on inventory.

PHILIPPINE INVENTORY (PICCS): Not determined.

CHINA INVENTORY (IECS): Not determined.

## SECTION 16 OTHER INFORMATION

Prepared by: Product Stewardship and Toxicology



This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1.
NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practice

# MIBC (METHYL ISOBUTYL CARBINOL)

* * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* M S D S *
* *
* Canadian Centre for Occupational Health and Safety *
* * * * * * * * * * * * Issue : 2001-1 (February, 2001) *

*** IDENTIFICATION ***

**MSDS RECORD NUMBER** : 2427908
**PRODUCT NAME(S)** : METHYL ISOBUTYL CARBINOL
**DATE OF MSDS** : 2000-02-02
**CURRENCY NOTE** : This MSDS was provided to CCOHS in electronic form on 2000-09-27

*** SUPPLIER/DISTRIBUTOR INFORMATION ***

**SUPPLIER/DISTRIBUTOR** : CANADA COLORS AND CHEMICALS LIMITED
**ADDRESS** : 80 Scarsdale Road
Don Mills Ontario
Canada M3B 2R7
Telephone: 416-449-7750
**EMERGENCY TELEPHONE NO.** : 416-444-2112
**SUPPLIER/DISTRIBUTOR NOTE** :
For further information about this product please contact the Canada Colors Customer Service Department at 416-449-7750.

*** MATERIAL SAFETY DATA ***

MATERIAL SAFETY DATA SHEET : 00000545

CANADA COLORS AND CHEMICALS LI
80 SCARSDALE ROAD
DON MILLS, ONTARIO M3B 2R7
(416) 449-7750

**Product**: METHYL ISOBUTYL CARBINOL

## SECTION 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER..... CANADA COLORS & CHEMICALS LTD.
80 SCARSDALE ROAD,
DON MILLS, ON

M3B 2R7

PRODUCT NAME.....
PRODUCT CODE.....
CHEMICAL FORMULA..... C6H14O.
MOLECULAR WEIGHT..... N.AV.
CHEMICAL FAMILY..... ORGANIC.
MATERIAL USE..... SOLVENT.
EMERGENCY PHONE NO..... (416)-444-2112.

## SECTION 02: COMPOSITION/INFORMATION ON INGREDIENTS

| % | CAS / TLV | LD/50, ROUTE, SPECIES | LC/50, ROUTE, SPECIES |
|---|---|---|---|
| METHYL ISOBUTYL CARBINOL<br>100 | 108-11-2<br>25 PPM SKIN | >2590 MG/KG | >2000 PPM/8H |

## SECTION 03: HAZARDS IDENTIFICATION

ROUTE OF ENTRY:.....

| | |
|---|---|
| SKIN CONTACT..... | BRIEF CONTACT MAY CAUSE SLIGHT IRRITATION WITH ITCHING AND LOCAL REDNESS. PROLONGED OR REPEATED CONTACT MAY CAUSE DEFATTING AND DRYING OF THE SKIN. |
| SKIN ABSORPTION..... | PROLONGED OR WIDESPREAD CONTACT MAY RESULT IN THE ABSORPTION OF POTENTIALLY HARMFUL AMOUNTS OF MATERIAL. |
| EYE CONTACT..... | EXCESS REDNESS AND SWELLING OF THE CONJUNCTIVA MAY OCCUR.CAUSES IRRITATION, EXPERIENCED AS STINGING AND DISCOMFORT OR PAIN.CORNEAL INJURY MAY OCCUR. |
| INHALATION..... | HIGH CONCENTRATIONS OF VAPOUR MAY CAUSE IRRITATION OF THE RESPIRATORY TRACT, EXPERIENCED AS NASAL DISCOMFORT AND DISCHARGE, WITH CHEST PAIN AND COUGHING. HIGH VAPOUR CONCENTRATIONS MAY CAUSE DROWSINESS AND HEADACHE. |
| INGESTION..... | MODERATELY TOXIC.HEADACHE, DIZZINESS, DROWSINESS, NAUSEA, VOMITING MAY OCCUR. |
| EFFECTS OF ACUTE EXPOSURE..... | SEE ABOVE. |
| EFFECTS OF CHRONIC EXPOSURE..... | NO ADVERSE EFFECTS ANTICIPATED FROM AVAILABLE INFORMATION. |
| MEDICAL CONDITIONS AGGRAVATED..... BY OVEREXPOSURE | SKIN CONTACT MAY AGGRAVATE AN EXISTING DERMATITIS. |

## SECTION 04: FIRST AID MEASURES

| | |
|---|---|
| INSTRUCTIONS:..... | EYE CONTACT:. FLUSH EYES WITH LARGE AMOUNTS OF RUNNING WATER FOR AT LEAST 15 MINUTES. HOLD EYELIDS APART TO ENSURE RINSING OF THE ENTIRE SURFACE OF THE EYE AND LIDS WITH WATER.REMOVE ANY CONTACT LENSES.GET IMMEDIATE MEDICAL ATTENTION.IN CASE OF SKIN CONTACT.START RINSING AND REMOVE CONTAMINATED CLOTHING WHILE RINSING.WASH SKIN WITH SOAP AND WATER.WASH CLOTHING BEFORE REUSE.IF IRRITATION PERSISTS, GET MEDICAL ATTENTION.IN CASE OF |

| | |
|---|---|
| | INGESTION, GIVE LARGE QUANTITIES OF WATER IF CONSCIOUS.INDUCE VOMITING.THIS SHOULD BE DONE ONLY BY MEDICAL OR EXPERIENCED FIRST-AID PERSONEL.GET IMMEDIATE MEDICAL ATTENTION.IF INHALED, REMOVE FROM AREA TO FRESH AIR.APPLY ARTIFICIAL RESPIRATION OR ADMINISTER OXYGEN, IF NECESSARY.OXYGEN MAY BE GIVEN BY QUALIFIED PERSONNEL. SEEK MEDICAL ATTENTION. |
| NOTES TO PHYSICIAN..... | THERE IS NO SPECIFIC ANTIDOTE. TREATMENT SHOULD BE DIRECTED AT THE CONTROL OF SYMPTOMS AND THE CLINICAL CONDITION OF THE PATIENT. |

## SECTION 05: FIRE FIGHTING MEASURES

| | |
|---|---|
| T.D.G. FLAM. CLASS..... | 3. |
| FLAMMABILITY..... | YES. |
| IF YES, UNDER WHICH..... CONDITIONS? | |
| EXTINGUISHING MEDIA..... | USE WATER SPRAY (FOG), ALCOHOL-TYPE OR ALL-PURPOSE-TYPE FOAM BY MANUFACTURERS' RECOMMENDED TECHNIQUES FOR LARGE FIRES.USE CARBON DIOXIDE OR DRY CHEMICAL FOR SMALL FIRES. |
| SPECIAL PROCEDURES..... | FLAMMABLE.WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING. |
| FLASH POINT (C), METHOD..... | 39 (C). (T.C.C.). ASTM D 56. 41. (T.O.C.). ASTM D 1310. |
| AUTO IGNITION TEMPERATURE..... | N.AV. |
| UPPER FLAMMABLE LIMIT (% BY VOL.)..... | 5.5. |
| LOWER FLAMMABLE LIMIT (% BY VOL.)..... | 1.0. |
| EXPLOSION DATA..... | |
| EXPLOSIVE POWER..... | N.AV. |
| RATE OF BURNING..... | N.AV. |
| UNUSUAL FIRE AND EXPLOSION HAZARDS..... | THIS MATERIAL MAY PRODUCE A FLOATING FIRE HAZARD IN EXTREME FIRE CONDITIONS. |
| HAZARDOUS COMBUSTION PRODUCTS..... | BURNING CAN PRODUCE,. CARBON DIOXIDE,CARBON MONOXIDE. CARBON MONOXIDE IS HIGHLY TOXIC IF INHALED; CARBON DIOXIDE IN SUFFICIENT CONCENTRATIONS CAN ACT AS AN ASPHYXIANT. |

## SECTION 06: ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| LEAK/SPILL..... | SMALL SPILLS CAN BE FLUSHED WITH LARGE QUANTITIES OF WATER.LARGE SPILLS SHOULD BE COLLECTED FOR DISPOSAL.AVOID CONTACT WITH LIQUID AND VAPOURS.WEAR PROTECTIVE EQUIPMENT.THIS PRODUCT MAY BE TOXIC TO FISH. AVOID DISCHARGE TO NATURAL WATERS. |

## SECTION 07: HANDLING AND STORAGE

| | |
|---|---|
| HANDLING PROCEDURES AND EQUIPMENT..... | AVOID CONTACT WITH EYES.AVOID INGESTION.AVOID INHALING.WEAR PROTECTIVE EQUIPMENT DURING HANDLING.KEEP AWAY FROM HEAT AND FLAMES.VAPOURS MAY ACCUMULATE AND TRAVEL TO DISTANT IGNITION SOURCES AND FLASHBACK.KEEP CONTAINER CLOSED.EMPTY CONTAINERS ARE HAZARDOUS, MAY CONTAIN FLAMMABLE/EXPLOSIVE DUSTS, LIQUID RESIDUE OR VAPOURS.FOLLOW LABELED WARNINGS EVEN AFTER CONTAINER IS EMPTIED.USE ADEQUATE VENTILATION.WASH THOROUGHLY AFTER HANDLING.MAINTAIN A GOOD PERSONAL HYGIENE. |
| STORAGE NEEDS..... | STORE IN A COOL, DRY, WELL VENTILATED AREA, AWAY FROM HEAT AND IGNITION SOURCES. |

## SECTION 08: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| EXPOSURE GUIDELINES:..... | COMPONENT:. METHYL ISOBUTYL CARBINOL:. 104 MG/M3 TWA8 ACGIH. 25 PPM TWA8 ACGIH. 167 MG/M3 STEL ACGIH. 40 PPM STEL ACGIH. |
| GLOVES/ TYPE..... | IMPERVIOUS GLOVES (NEOPRENE). |
| RESPIRATORY/TYPE..... | USE SELF CONTAINED BREATHING APPARATUS IN HIGH VAPOUR CONCENTRATIONS. |
| EYE/TYPE..... | MONOGOGGLES. OR. FACE SHIELD. |
| FOOTWEAR/TYPE..... | NO SPECIAL REQUIREMENTS. |
| CLOTHING/TYPE..... | WEAR IMPERVIOUS PROTECTIVE CLOTHING. CHEMICAL APRON. |
| OTHER/TYPE..... | EYE BATH AND SAFETY SHOWER. |
| ENGINEERING CONTROLS..... | GENERAL (MECHANICAL) ROOM VENTILATION IS EXPECTED TO BE SATISFACTORY WHERE THIS PRODUCT IS STORED AND HANDLED IN CLOSED EQUIPMENT.SPECIAL, LOCAL VENTILATION IS NEEDED AT POINTS WHERE VAPOURS CAN BE EXPECTED TO ESCAPE TO THE WORKPLACE AIR.PROCESS HAZARD:. SUDDEN RELEASE OF HOT ORGANIC CHEMICAL VAPORS OR MISTS FROM PROCESS EQUIPMENT OPERATING AT ELEVATED |

TEMPERATURE AND PRESSURE, OR SUDDEN INGRESS OF AIR INTO HOT EQUIPMENT UNDER A VACUUM, MAY RESULT IN IGNITIONS WITHOUT THE PRESENCE OF OBVIOUS IGNITION SOURCES.PUBLISHED "AUTOIGNITION" OR "IGNITION" TEMPERATURE VALUES CANNOT BE TREATED AS SAFE OPERATING TEMPERATURES IN CHEMICAL PROCESSES WITHOUT ANALYSIS OF THE ACTUAL PROCESS CONDITIONS.ANY USE OF THIS PRODUCT IN ELEVATED-TEM PERATURE PROCESS SHOULD BE THOROUGHLY EVALUATED TO ESTABLISH AND MAINTAIN SAFE OPERATING CONDITIONS.

## SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| PHYSICAL STATE | LIQUID. TRANSPARENT COLOURLESS. |
| ODOUR | MILD NONRESIDUAL. |
| ODOUR THRESHOLD | N.AV. |
| VAPOUR PRESSURE (MMHG) | 0.49 KPA. 3.7 MMHG. |
| VAPOUR DENSITY (AIR=1) | 3.5. |
| EVAPORATION RATE | 0.43. |
| BOILING POINT | 131.7 (C). |
| FREEZING POINT | -90. |
| PH | N.AV. |
| SPECIFIC GRAVITY (WATER=1) | 0.8075. |
| SOLUBILITY IN WATER (% W/W) | 1.7. AT 20 (C). |
| MOLECULAR WEIGHT | 102.18 G/MOL. |
| VOLATILE | 100%. |
| COEFFICIENT OF WATER/OIL DIST | N.AV. |

## SECTION 10: STABILITY AND REACTIVITY

| | |
|---|---|
| CHEMICAL STABILITY: | |
| YES | YES. |
| NO, WHICH CONDITIONS? | |
| COMPATABILITY WITH OTHER SUBSTANCES: | |
| YES | |
| NO, WHICH ONES? | STRONG ACIDS. STRONG ALKALIES. |
| REACTIVITY CONDITIONS? | AVOID EXCESSIVE HEAT, OPEN FLAMES AND ALL IGNITION SOURCES. |
| HAZARDOUS PRODUCTS OF DECOMPOSITION | CARBON MONOXIDE AND CARBON DIOXIDE ARE PRODUCED ON COMBUSTION. |
| HAZARDOUS POLYMERIZATION | WILL NOT OCCUR. |

## SECTION 11: TOXICOLOGICAL INFORMATION

| | |
|---|---|
| EXPOSURE LIMIT OF MATERIAL..... | SEE SECTION 02. |
| LC 50 OF MATERIAL, SPECIES &..... ROUTE | SEE SECTION 02. |
| LD 50 OF MATERIAL, SPECIES &..... ROUTE | COMPONENT:. METHYLISOBUTYLCARBINOL. 2590 MG/KG. (RAT). 3560 ML/KG. (RABBIT). |
| CARCINOGENICITY OF MATERIAL..... | NONE. |
| REPRODUCTIVE EFFECTS..... | NONE. |
| IRRITANCY OF MATERIAL..... | SEE SECTION 03. |
| SENSITIZING CAPABILITY OF..... MATERIAL | NONE. |
| SYNERGISTIC MATERIALS..... | NONE. |

## SECTION 12: ECOLOGICAL CONSIDERATIONS

| | |
|---|---|
| ENVIRONMENTAL TOXICITY..... INFORMATION | AT VERY LOW CONCENTRATION IN WATER, THIS PRODUCT IS BIODEGRADABLE IN A BIOLOGICAL WASTEWATER TREATMENT PLANT. THIS PRODUCT MAY BE TOXIC TO FISH. AVOID DISCHARGE TO NATURAL WATERS. |

## SECTION 13: DISPOSAL CONSIDERATIONS

| | |
|---|---|
| WASTE DISPOSAL..... | INCINERATE IN A FURNACE IN RESPECT TO PROVINCIAL, FEDERAL AND MUNICIPAL REGULATIONS. |

## SECTION 14: TRANSPORT INFORMATION

| | |
|---|---|
| UN NUMBER..... | 2053. |
| TDG CLASSIFICATION..... | 3. |
| PACKING GROUP..... | III. |
| SPECIAL SHIPPING INSTRUCTIONS..... | NOT REGULATED IF <454 L. |

## SECTION 15: REGULATORY INFORMATION

| | |
|---|---|
| WHMIS CLASSIFICATION..... | B3. D2B. |
| CPR COMPLIANCE..... | THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR. |

## SECTION 16: OTHER INFORMATION

N.AV.=NOT AVAILABLE.....
N.AP.=NOT APPLICABLE.....
PREPARED BY..... Regulatory Affairs
DATED..... 02022000