

MATERIAL SAFETY DATA SHEET

Abbreviations used on this Material Safety Data Sheet:

N/av. = Not available, N/req. = Not required, N/ap. = Not applicable, ppm = parts per million, TLV = Threshold Limit Value.

NFPA Hazard Rating: 4 - Extreme, 3 - High, 2 - Moderate, 1 - Slight, 0 - None, X - Blank

WHMIS HAZARD: D-2A

NFPA HAZARD RATING:

HEALTH - 1, FLAMMABILITY - 1, REACTIVITY - 0

SECTION 1 - PRODUCT IDENTIFICATION AND USE

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| PRODUCT IDENTIFIER: Bi-Tron Penetrating Lubricant | |
| PRODUCT USE: Penetrant Metal Friction Wear Reducer | |
| ®/ETAL: Bi-Tron Global | SUPPLIER'S NAME: |
| STREET ADDRESS: #100 12031 Horseshoe Way | STREET ADDRESS: |
| CITY: Richmond | PROVINCE: B.C. |
| POSTAL CODE: V7A 4V4 | EMERGENCY TELEPHONE NUMBER: (USE ONLY FOR CHEMICAL EMERGENCIES) (613) 996-6666 |

SECTION 2 - HAZARDOUS INGREDIENTS

| HAZARDOUS INGREDIENTS | % | CAS NUMBER | LETHAL DOSE (50%) OF INGREDIENT (SPECIFY SPECIES AND ROUTE) | LETHAL CONCENTRATION (50%) OF INGREDIENT (SPECIFY SPECIES AND ROUTE) | PERMISSIBLE EXPOSURE LIMIT TLV-TWA |
|-------------------------------------|-------|------------|---|--|---------------------------------------|
| Heavy aromatic petroleum distillate | <5 | 64742-94-5 | >4000 mg/kg (oral/rat) | N/av. | 10 mg/m ³ for oil mists |
| Propane, as propellant | N/av. | 74-98-6 | N/av. | N/av. | N/av. |
| Isobutane, as propellant | N/av. | 75-28-5 | N/av. | 52000ppm/2h (mouse, inhalation) | N/av. |

SECTION 3 - PHYSICAL DATA

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| PHYSICAL STATE: Liquid | ODOUR AND APPEARANCE: Pale yellow liquid with an oily appearance, slight paraffinic odour | | ODOUR THRESHOLD (ppm): N/av. |
| VAPOUR PRESSURE: (mm Hg) >1.0 | VAPOUR DENSITY: (Air = 1) >1.0@20 °C | EVAPORATION RATE: Slower than ether @20 °C | BOILING POINT: 153 °C approx |
| FREEZING POINT: -28 °C | PERCENT VOLATILES: 30-35% | COEFFICIENT OF WATER/OIL DISTRIBUTION: Insoluble in water | |
| PH: N/ap. | SPECIFIC GRAVITY: (Water = 1) 1.09@21 °C | | |

SECTION 4 - FIRE AND EXPLOSION DATA

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| FLAMMABILITY IF YES, UNDER WHICH CONDITIONS? YES X NO | Flammable when heated to ignition in contact with external ignition source. Will decompose if heated in excess of 126 °C. | | |
| MEANS OF EXTINCTION: Smother with dry chemical powder, foam, carbon dioxide, or water fog. | | | |
| SPECIAL PROCEDURES: Fire fighters must wear self-contained breathing apparatus and protective clothing. Decontaminate clothing with water before removal. | | | |
| FLASHPOINT AND METHOD: 43 °C (liquid), -105 °C (propellant) | UPPER FLAMMABILITY LIMIT: (% BY VOLUME) 8.5% | LOWER FLAMMABILITY LIMIT: (% BY VOLUME) 1.0% | |
| AUTOIGNITION TEMPERATURE: > 400 °C | HAZARDOUS COMBUSTION PRODUCTS: Hydrogen, carbon and elemental carbon. Held at 175C for 4 hours this product may give off a maximum of 0.1% weight of hydrogen chloride. | | |
| EXPLOSION DATA: SENSITIVITY TO IMPACT: None | SENSITIVITY TO STATIC DISCHARGE: None | | |

SECTION 5 - REACTIVITY DATA

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| CHEMICAL STABILITY IF NO, UNDER WHICH CONDITIONS? YES X NO | Stable under normal conditions of use. |
| INCOMPATIBILITY WITH OTHER SUBSTANCES IF YES, WHICH ONES? YES X NO | Direct sources of heat and ignition. May react with alkali and alkaline earth metals. Strong oxidizing agents. |
| REACTIVITY, AND UNDER WHAT CONDITIONS? None, stable | |
| HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide and carbon and traces of oxides of chlorine when heated in excess of 200 °C for prolonged periods. | |
| PRODUCT IDENTIFIER: Bi-Tron Penetrating Lubricant | |

