

50826

MATERIAL SAFETY DATA SHEET
699

TDC Form # TR

SECTION 1 - HAZARDOUS INGREDIENTS

Ingredients	CAS #	% (weight)	LC50, ppm (inhalation, rat)	LD50, mg/kg (Oral, rat)
Ethylene glycol	107-21-1	>99%*	N/Av	5.89 g/kg (oral) 9.5 g/kg (dermal)

*Thermal Arc ® Torch Coolant is sold in three (3) forms and are all covered by this MSDS for the concentrate:

1. Thermal Arc ® Torch Coolant (Concentrate) - 100% ethylene glycol
2. Thermal Arc ® Torch Coolant - 25% ethylene glycol / 75% water
3. Thermal Arc ® Torch Coolant - 50% ethylene glycol / 50% water

SECTION 2 - PREPARATION INFORMATION

Prepared by: Thermal Dynamics Corporation
Telephone #: 603-298-5711
Preparation date: November 19, 2003

SECTION 3 - PRODUCT IDENTIFICATION

Product identifier: Thermal Arc ® Torch Coolant
Product use: Cutting and welding system coolant

Supplier name and address: Thermal Dynamics Corporation
82 Benning Street
West Lebanon, New Hampshire 03784
Telephone: 603-298-5711

Manufacturer name and address: See Supplier

Emergency Telephone #: (CHEMTREC) 800 424 9300 USA / CANADA
703 527 3887 INTERNATIONAL

HMIS Rating: Health - 2*; Flammability - 1; Reactivity - 0

SECTION 4 - PHYSICAL DATA

Physical properties listed here are for the concentrate; properties for the mixtures may vary somewhat.

- **Physical state, odor and appearance:** Colorless liquid, practically odorless.
- **Odor threshold:** 0.08 ppm-25 ppm
- **Specific gravity (at 20°C):** 1.1155
- **Coefficient of water/oil distribution:** Log P(oct)=-1.93
- **Vapor pressure (mm Hg @ 25°C):** 0.12
- **Boiling point:** 197°C (398°F)
- **Freezing point:** -13°C (9°F)
- **pH:** Neutral
- **Vapor density (Air=1.0):** 2.14
- **Evaporation rate (n-BuAc=1.0):** N/Av
- **Volatiles, %:** 100%

- **Solubility in water (w/w):** Completely soluble

SECTION 5 - FIRE AND EXPLOSION DATA

- **Conditions of flammability:** Product can burn, but is not a combustible liquid at normal temperatures. Addition of water to the mixtures lowers flammability further.
- **Means of extinction:** Water fog, alcohol foam, carbon dioxide, dry chemical. Wear positive-pressure, self-contained breathing apparatus when fighting fires.
- **Sensitivity to mechanical impact/static discharge:** Not susceptible to mechanical impact or static discharge.
- **Flash point (Method):** 119°C (247°F) (Setaflash)
- **Lower flammable limits (% by volume):** 3.2
- **Upper flammable limits (% by volume):** 15.3
- **Auto-ignition temperature:** Will ignite in air at 413°C (775°F).
- **Hazardous combustion products:** Burning produces normal products of combustion, such as carbon monoxide, carbon dioxide and water.

SECTION 6 - REACTIVITY DATA

- **Stability:** Stable. Hazardous polymerization will not occur.
- **Incompatible materials:** Avoid contact with oxidizing materials.
- **Conditions of reactivity:** Product may decompose or ignite if exposed to extremely high temperatures.
- **Hazardous decomposition products:** See "Hazardous combustion products", above.

SECTION 7 - TOXICOLOGICAL PROPERTIES

Routes of exposure and acute/chronic effects

- **Exposure limits:** ACGIH-Ceiling: 100 ppm.
- **Inhalation:** At room temperature, vapors are minimal due to low vapor pressure. If heated or sprayed as an aerosol, concentrations may be attained that are sufficient to cause irritation and other effects.
- **Skin contact:** Essentially non-irritating to skin. However, repeated skin exposure to large quantities may result in absorption of harmful amounts.
- **Eye contact:** May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Vapor or mists may irritate the eyes.
- **Ingestion:** The toxicity from a single dose is moderate. Initial symptoms on exposure include nausea, vomiting, weakness, a drunken feeling, dizziness, stupor, convulsions and possible death. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. The estimated lethal dose for an average person is about 100 ml. Amounts ingested due to proper industrial handling are not likely to cause injury; however, ingestion of larger amounts could cause serious injury, even death.
- **Chronic effects:** Observations in animals include kidney and liver effects and deposition of calcium salts in various tissues after long-term dietary intake of ethylene glycol.
- **Carcinogenicity:** Not listed by IARC or ACGIH.
- **Teratogenicity, mutagenicity, other reproductive effects:** May have teratogenic or other reproductive effects. Based on animal studies, ingestion of ethylene glycol appear to be the major and possibly only route of exposure likely to produce birth defects. Exposures by inhalation (tested nose-only in animals) or skin contact, the primary routes of occupational exposure, have minimal or essentially no effect on the fetus. In studies on rats, ethylene glycol has been shown not to interfere with reproduction. In studies on mice, ingestion of ethylene glycol in large amounts caused a small decrease in the number of litters per pair, live pups per litter, and in live pup weight. Results of in-vitro (test-tube) mutagenicity tests have been negative. Results of mutagenicity tests in animals have been negative.

- **Sensitization to material:** Two reported cases of skin sensitization due to industrial exposure.
- **Synergistic materials:** None known.

SECTION 8 - FIRST AID

- **Inhalation:** Remove victim to fresh air. If breathing difficulty does not improve rapidly, get patient to a doctor.
- **Skin:** Wash skin with mild soap and water. Rinse thoroughly. See a doctor if irritation persists.
- **Eyes:** Flush with plenty of water for at least 15 minutes. Get medical attention immediately.
- **Ingestion:** If swallowed, DO NOT INDUCE VOMITING. Give victim one or two glasses of water, and get medical attention or transport victim to hospital as soon as possible.

SECTION 9 - PREVENTIVE MEASURES

- **Spill, leak or release:** If spilled, remove sources of ignition. Soak up spill with inert absorbent such as vermiculite, then place contaminated material into a disposal container and seal. Rinse area of spill with detergent and water.
- **Waste disposal:** Dispose of in accordance with federal, provincial and local regulations.

PROTECTIVE EQUIPMENT

- **Respiratory protection:** Atmospheric levels should be kept below the ceiling value (see Exposure Limits, above). When respiratory protection is required for certain operations, wear a NIOSH-approved organic vapor cartridge-type respirator.
- **Engineering controls:** Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary where product is sprayed or heated.
- **Protective gloves:** Wear impervious gloves such as natural rubber, nitrile or polyethylene, where prolonged or frequent contact could occur.
- **Eye protection:** Wear safety glasses with side shields or splash goggles. If vapors cause eye irritation, wear a full face respirator.
- **Other protective equipment:** A safety shower and eye-wash station should be present in the workplace.

STORAGE AND HANDLING

- **Handling procedures and equipment:** Avoid swallowing; do not eat, drink or smoke in areas where this product is being handled or stored. Practice reasonable caution and personal cleanliness. Avoid skin and eye contact.
- **Storage requirements:** Store in a cool, dry area. Trace quantities of ethylene oxide may be present in this product. While these trace quantities could accumulate in head space areas of storage and transport vessels, they are not expected to create a condition which will result in ethylene oxide concentrations of greater than the TWA (8-hour) of 0.05 ppm in the breathing zone of the workplace for appropriate applications.
- **Special shipping information:** None (See Section 10).

SECTION 10 - REGULATION INFORMATION

(Not meant to be all-inclusive - selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown on this page. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, provincial or state, and local laws.

The following specific information is made for the purpose of complying with numerous federal, provincial or state, and local laws and requirements. See MSDS for health and safety information.

Canadian Regulations:

WHMIS INFORMATION: Class D2A, Poisonous and Infectious Materials, Other Toxic Effects, Very Toxic Materials

TDG INFORMATION: Not regulated as dangerous goods.

U.S. Regulations:

SARA 313 INFORMATION: This product contains Ethylene glycol, which is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment Reauthorization Act of 1986 and 40 CFR Part 372. This product has been reviewed according to the EPA "Hazard Categories" promulgated under Section 311 and 312 of the Superfund Amendment Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

1. An immediate hazard
2. A delayed health hazard

Department of Transportation (DOT): Not hazardous according to DOT criteria.

Additional notes or references:

Abbreviations:

- ACGIH: American Conference of Governmental Industrial Hygienists
- IARC: International Agency for Research on Cancer
- N/Ap: Not applicable
- N/Av: Not available
- NIOSH: National Institute for Occupational Safety and Health
- TCC: Tagliabue Closed Cup
- TWA: Time Weighted Average
- WHMIS: Workplace Hazardous Materials Information System

References:

1. Van Nostrand Reinhold, Dangerous Properties of Industrial Materials, Seventh Edition, N. Irving Sax.
2. Canadian Centre for Occupational Health and Safety. RTECS (Registry of Toxic Effects) and CHEMINFO databases.
3. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2000.
4. International Agency for Research on Cancer Monographs.