MATERIAL SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY 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, NH 03784, USA
Phone: (603) 298-5711

Manufacturer's name and address:
Refer to Supplier

24 Hour Emergency Telephone #: **(**CHEMTREC) (800) 424-9300 USA / Canada
(703) 527-3887 International

SECTION 2 —COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (weight)	OSHA PEL (ppm)	ACGIH TLV	LC_{50}(rat, inh) (ppm/4hr)	LD_{50}(mg/kg) rat, oral	LD_{50}(mg/kg) dermal, rabbit
Concentrate:							
Ethylene Glycol	107-21-1	60-100	*50 ppm (ceiling)	100 mg/m^3 (ceiling)	N/Av	5890	9500
25% Ethylene glycol / 75% Water Mixture:							
Ethylene Glycol	107-21-1	10-30	*50 ppm (ceiling)	100 mg/m^3 (ceiling)	N/Av	5890	9500
50% Ethylene glycol / 50% Water Mixture:							
Ethylene Glycol	107-21-1	30-60	*50 ppm (ceiling)	100 mg/m^3 (ceiling)	N/Av	5890	9500

*Note: The OSHA PEL listed above for Ethylene glycol is a final rule / vacated value.

SECTION 3 — HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Colourless liquid, practically odourless.
Warning! Harmful or fatal if swallowed. Material may be harmful if absorbed through the skin.
Can cause nausea, vomiting, central nervous system effects or death.
Contains material that may cause birth defects, based on animal data. May cause liver or kidney damage.

POTENTIAL HEALTH EFFECTS

Target organs: Eyes, skin, respiratory system, digestive system, central nervous system

Signs and symptoms of short-term (acute) exposure:

Inhalation: Inhalation of vapours or spray mists may cause irritation to the nose, throat, and respiratory tract. Additional symptoms may include coughing, a burning sensation and drowsiness.

Skin contact: Skin contact may cause mild irritation. In large amounts, this product can be absorbed through the skin. Absorption may result in symptoms similar for those listed for ingestion.

Eye contact: Contact with liquid, vapour or mists may cause mild irritation.

Ingestion: Initial symptoms include nausea, vomiting, weakness, dizziness, drowsiness and other symptoms of central nervous system depression. Large exposures may result in cardiopulmonary effects (metabolic acidosis) and kidney failure. Could also cause convulsions, coma, respiratory arrest and death.

Effects of long-term (chronic) exposure: Prolonged or repeated ingestion may cause bladder and kidney stones to develop.

Other important hazards: Possible developmental hazard. See TOXICOLOGICAL INFORMATION, Section 11.

SECTION 4 — FIRST AID MEASURES

Inhalation: If inhaled, immediately remove victim to fresh air. If not breathing, give artificial respiration. Obtain medical attention if symptoms develop and persist.

Skin contact: Immediately remove contaminated clothing and shoes. Wash skin thoroughly with mild soap and running water. Obtain medical attention if irritation persists. Launder clothing before reuse.

Eye contact: Flush eyes with running water for at least 15 minutes. Obtain medical attention if irritation persists.

Ingestion: If swallowed, obtain medical attention immediately! DO NOT induce vomiting. Give one or two glasses of water to drink. Never give anything by mouth to an unconscious or convulsing person.

SECTION 5 — FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability: Product is not combustible at normal temperatures. Material can burn at extremely high temperatures. Addition of water to the mixtures lowers flammability further. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapours are heavier than air and collect in confined and low-lying areas.

Flash point (Method): 119°C / 247°F (Setaflash) (Concentrate)

Auto-ignition temperature: Will ignite in air at 413°C / 775°F

Lower flammable limit (% by volume): 3.2

Upper flammable limit (% by volume): 15.3

Explosion data: *Sensitivity to mechanical impact / static discharge:* Not expected to be sensitive to mechanical impact or static discharge.

Oxidizing properties: N/Av

Suitable extinguishing media: Use water fog, dry chemical, carbon dioxide or foam.

Special fire-fighting procedures/equipment: Firefighters should wear proper protective equipment and a self-contained breathing apparatus. Move containers from fire area if it can be done without risk. Water spray may be useful in minimizing or dispersing vapours, and cooling equipment and containers exposed to heat and flame. Avoid spreading burning liquid with water spray used for cooling purposes.

Hazardous combustion products: Carbon oxides and other irritating fumes and smoke.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions: Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. Dike far ahead of the spill with non-combustible, inert absorbent material.

Spill response/Cleanup: Eliminate all sources of ignition. Ventilate area of release. Stop leak if you can do so without risk. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand, earth), then place absorbent material into a suitable container for later disposal (see Section 13). Contaminated absorbent material may pose the same hazards as the spilled product. Notify the appropriate authorities as required.

Prohibited materials: None known.

SECTION 7 — HANDLING AND STORAGE

Safe handling procedures: Wear appropriate protective equipment during handling. Use in a well-ventilated area. Do not ingest. Avoid inhalation of vapours. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Keep away from extreme heat and flame. Keep away from incompatibles. Use caution when opening cap. Keep container tightly closed when not in use. Assume empty containers contain residues, which are hazardous.

Storage requirements: Store in a cool, dry, well-ventilated area away from all sources of ignition and incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials: Strong oxidizers (e.g. Chlorine, Peroxides, etc.), acids (e.g. sulfuric acid), caustics (e.g. Sodium hydroxide).

Special packaging materials: Always keep in containers made of the same materials as the supply container.

SECTION 8 — EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation and engineering controls: General ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary where product is sprayed or heated.

Respiratory protection: Respiratory protection is required if airborne concentrations are above recommended TLV's or are not known. Use NIOSH/MSHA-approved respirators. In emergency situations or when concentrations are not known, a self-contained breathing apparatus may be required. Advice should be sought from respiratory protection specialists.

Protective gloves: It is recommended that protective gloves impervious to the material be worn at all times during use. Confirmation of what type of material is most suitable for the intended application, should be obtained from glove suppliers.

Eye protection: Chemical splash goggles to prevent direct contact, irritation, or injury.

Other protective equipment: An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

Permissible exposure levels: See Section 2.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Properties listed below are for the concentrate only; properties for the mixtures may vary.

Physical form, colour and odour: Colourless liquid, practically odourless.

Odour threshold: 0.08 – 25 ppm
Boiling point: 197°C / 398°F
Specific gravity (water=1): 1.1155
Coefficient of oil/water distribution: Log P(oct) = -1.93
Solubility in water (%): Complete
Volatile organic compounds (VOC's): N/Av

pH: Neutral
Evaporation rate (nBuAC=1): N/Av
Melting/freezing point: -13°C / 9°F
Vapour pressure (mm Hg @ 25°C): 0.12
Vapour density (Air=1): 2.14
Percent Volatile by Weight: 100

SECTION 10 — STABILITY AND REACTIVITY

Stability and reactivity: Stable under the recommended storage and handling conditions prescribed.

Hazardous polymerization: Will not occur.

Conditions to avoid: Extreme heat and open flame.

Materials to avoid: Incompatible materials (see Section 7).

Hazardous decomposition products: None known. Refer to 'Hazardous combustion products', Section 5.

SECTION 11 — TOXICOLOGICAL INFORMATION

Routes of exposure: Skin contact, skin absorption, eye contact, inhalation and ingestion.

Toxicological data: There is no available data for the product itself, only for the ingredients.

LD_{50}: See Section 2

LC_{50}: See Section 2

Carcinogenicity: None of the ingredients listed are classified as carcinogenic by IARC or ACGIH.

Teratogenicity, mutagenicity, other reproductive effects: This product contains Ethylene glycol. Ethylene glycol may cause embryotoxic and teratogenic effects at doses which are not maternally toxic.

Sensitization to material: There have been two reported cases of skin sensitization due to industrial exposure to Ethylene glycol. There is insufficient information to classify this product as a skin sensitizer.

Synergistic materials: N/Av.

Conditions aggravated by exposure: None known.

SECTION 12 — ECOLOGICAL INFORMATION

Ecotoxicological information: The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment.

Chemical fate information: There is no data available on the product itself.

Aquatic toxicity: There is no data available on the product.

SECTION 13 — DISPOSAL CONSIDERATIONS

Handling for disposal: Handle waste according to recommendations in Section 7.

Methods of disposal: Containers should be disposed of in accordance with all applicable federal, provincial, state, and local regulations.

SECTION 14 — TRANSPORT INFORMATION

Canadian Transportation of Dangerous Goods Regulations (TDGR) Shipping Information:
This product is not regulated for transportation by ground within Canada.

US DOT 49 CFR information:
This product is not regulated for transportation by ground within the continental United States.

SECTION 15 — REGULATORY INFORMATION

WHMIS information: Class D2A (Materials Causing Other Toxic Effects – Very Toxic Material)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

CEPA information: All ingredients are listed on the DSL.
TSCA information: All ingredients are listed on the TSCA inventory.

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

SECTION 16 — OTHER INFORMATION

Legend: ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CEPA: Canadian Environmental Protection Act
DSL: Domestic Substances List
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
MSHA: Mine Safety and Health Administration
N/Ap: not applicable
N/Av: not available
NIOSH: National Institute of Occupational Safety and Health
OSHA: Occupational Safety & Health Administration
PEL: Permissible Exposure Limit
RTECS: Registry of Toxic Effects of Chemical Substances
TSCA: Toxic Substances Control Act
TLV: Threshold Limit Values
WHMIS: Workplace Hazardous Materials Information System

References:
1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2006.
2. International Agency for Research on Cancer Monographs, searched 2007.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2007 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheet from manufacturer.

Prepared by: Thermal Dynamics Corporation
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Preparation date: February 26, 2007

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