1. Product and Company Identification

Product Identifier: MultiTherm 660®
Product Description: Heat Transfer Fluid
Manufacturer: MultiTherm LLC
11 General Warren Blvd., Malvern, PA 19355 USA
Emergency Contact: Mark Smith
Emergency Phone: (484) 433-1787
Customer Service: (610) 408-8361

2. Hazards Identification

GHS CLASSIFICATIONS:
   Health: Aspiration Hazard, Category 1
   GHS Label: Health Hazard

Signal Word: Danger
Hazard Statements: May be fatal if swallowed and enters airways.
Precautionary Statements
   Response: IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
   Storage: Store locked up.
   Disposal: Dispose of contents and container accordance with all local, regional, national and international regulations.

3. Composition / Information on Ingredients

Substance/Mixture: Substance

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>%</th>
<th>CAS Number</th>
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<tbody>
<tr>
<td>Alkyl Biphenyl Mixture</td>
<td>*</td>
<td>Proprietary</td>
</tr>
<tr>
<td>Triisopropylbiphenyls</td>
<td>*</td>
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Comments: Ingredients and composition are withheld as trade secret in accordance with 29CFR1910.1200(i).

4. First Aid Measures

Eyes: Flush eye with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists.

Skin: Immediately wash skin with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion: Wash out mouth with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important Symptoms / Effects, acute and delayed

Eyes: May cause eye irritation, tearing, or blurred vision.

Skin: May cause skin irritation, reddening, itching, and inflammation.

Skin Absorption: Repeated or prolonged skin contact can cause drying, itching, cracking, and redness. Repeated or prolonged skin contact with large amount of this material can absorb through the skin causing toxic effects.

Ingestion: Can cause irritation of the mouth, throat and esophagus. May cause gastrointestinal irritation, nausea, and diarrhea. Aspiration into the lung can cause chemical pneumonia and lung damage.

Inhalation: May cause irritation of nose, mucous membranes and throat.

5. Fire Fighting Measures

Flammable Class: Non-flammable.

General Hazard: Do not use high pressure water jet.

Extinguishing Media: Water or water spray.


Other Considerations: Keep adjacent containers cool with water spray.

Fire Fighting Procedures: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

6. Accidental release measures

Small Spill: Contain and soak up spill with non-combustible absorbent material. Dampen and scoop spilled material into suitable containers, seal and label. Avoid mixing spilled material with other chemicals or debris. Avoid runoff into storm sewers and ditches which lead to waterways.

Large Spill: Avoid contact with skin and eyes. Evacuate the area of all non-essential personnel. Shut off leaks, if possible without personal risk. Absorb or contain liquid with non-combustable absorbent material. Place in a labeled, sealable container for subsequent safe disposal.

ENVIRONMENTAL PRECAUTIONS

Water Spill: Prevent material from entering drains or watercourses using sand, earth or other appropriate barriers.

General Procedures: Avoid contact with skin or eyes. Avoid contact with spilled materials. Use appropriate personal protective equipment. Ensure adequate ventilation.

Special Protective Equipment: Use protective equipment recommended in Section 8. Wear appropriate NIOSH approved respirator when ventilation is inadequate.
7. Handling and Storage

General Procedures: Handle in accordance with good industrial hygiene and safety practices.

Precaution for safe handling: Use only in a well ventilated area. Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Avoid breathing (dust, vapor, mist, gas). Avoid contact with eyes, skin and clothing. Ground and bond containers when transferring material. Do not cut, grind, drill, weld, or reuse containers. Spills will produce very slippery surfaces. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled in a cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

Storage temperature: Ambient.

Storage pressure: Atmospheric.

Electrostatic Accumulation Hazard: Bond and ground during loading, unloading and transferring material to prevent electrostatic accumulation.

“Empty” containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. “Empty” drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

8. Exposure Controls / Personal Protection

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering Controls: Provide adequate ventilation. Eye washes and showers for emergency use.

PERSONAL PROTECTIVE EQUIPMENT

Eyes and Face: Wear safety glasses with side shields (or goggles) or a face shield.

Skin: Use protective clothing, sleeves, boots, face protection and chemical resistant gloves.

Respiratory: Wear suitable respiratory equipment if risk of insufficient ventilation.

Protective Clothing: Wear full protective clothing and chemical resistant gloves to prevent prolonged skin contact.

Work Hygienic Practices: Wash hands, forearms and face before eating, drinking, smoking and using the restroom. Launder contaminated clothing before re-use.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

9. Physical and Chemical Properties

Physical state: Liquid
Color: Colorless
Odor: Virtually Odorless
pH: Not available
Flash point: Cleveland Closed cup: 186°C (367°F)
10. Stability and Reactivity

Hazardous Polymerization: Will not occur.
Chemical stability: Stable under normal conditions.
Conditions to avoid: Excessive heat, sparks or open flame.
Incompatible materials: Strong oxidizers.


11. Toxicological Information

Acute

Oral \( \text{LD}_{50} \): Not Available
Inhalation \( \text{LC}_{50} \): Not acutely toxic by inhalation. Study in rats shows this product is non-toxic by inhalation when tested at the maximum achievable vapor concentrations.

Eye Effects: Minimal irritation.
Skin Effects: Minimal irritation.

CARCINOGENICITY
Notes: Not Available
Repeated Dose Effects: Repeated or prolonged contact may cause skin disorders.
Irritation: Not a primary irritant.
Sensitization: Not sensitising to the skin.
Genetic Effects: None Expected.
Teratogenic Effects: None Expected.
Mutagenicity: Did not show mutagenic effects in animal testing.

12. Ecological Information

Environmental Data: Not classified as an environmental hazard.
Bioaccumulation/Accumulation: Not Available
Aquatic Toxicity (Acute)

96-HOUR \( \text{LC}_{50} \): > 8.24 µg/L
48-HOUR \( \text{EC}_{50} \): > 4.52 µg/L

Chemical Fate Information: Not Available
13. Disposal Considerations

**Disposal Method:** Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

**Empty Container:** Clean container thoroughly and dispose to licensed disposal contractor. Do not weld, cut, or braze empty containers, or allow product residue to come in contact with other sources of ignition as they may contain residue which could ignite.

**RCRA/EPA Waste Information:** This product does not meet the criteria of a hazardous waste as defined in 40 CFR 261 as it does not exhibit the characteristics of hazardous waste.

14. Transport Information

**DOT (Department of Transportation)**

**Proper Shipping Name:** Not regulated for Transport

15. Regulatory Information

**United States**

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)**

**CERCLA REGULATORY:** Contains no CERCLA regulated ingredients at detectable levels.

**TSCA (Toxic Substance Control Act)**

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16. Other Information

**Reason for Issue:** Updated to GHS Format with GHS classification

**History**

**Date of issue/Date of revision:** 2017 April 14th

**Revision:** Final

**Key to abbreviations:**
ATE = Acute Toxicity Estimate; ACGIH = American Conference of Governmental Industrial Hygienists; BCF = Bioconcentration Factor; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; IBC = Intermediate Bulk Container; IMDG = International Maritime Dangerous Goods; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; LogPow = logarithm of the octanol/water partition coefficient; MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = Marine pollution); NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act;
STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; UN = United Nations; WHMIS = Worker Hazardous Materials Information System (Canada)

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