

Pacific Functional Fluids LLC  
2244 Port of Tacoma Road  
Tacoma, WA 98421

---

## MATERIAL SAFETY DATA SHEET

### 24-HOUR EMERGENCY ASSISTANCE

CHEMTREC: 800-424-9300

Pacific Fluids: 888-586-7295

### GENERAL MSDS ASSISTANCE

Pacific Fluids: 253-284-4302

---

For hazard identification, acute and chronic health effects refer to the discussion in Section 3

---

SECTION 1	NAME
PRODUCT NAME	<b>Triatherm 660LP</b>
CHEMICAL NAME	Synthetic Aromatic Heat Transfer Fluid
CHEMICAL FAMILY	HYDROCARBON
COMPANY INFORMATION	<b>Pacific Functional Fluids LLC</b> <b>2244 Port of Tacoma Road</b> <b>Tacoma, WA 98421</b>

---

---

SECTION 2	PRODUCT/INGREDIENT
<u>Components</u>	<u>CAS registry number</u>
Ethyl diphenyl ethane	64800-83-5
diphenyl ethane	38888-98-1
diethyl diphenyl ethane	68398-19-6
ethylbenzene polymer	27536-89-6

---

---

## SECTION 3 HAZARD IDENTIFICATION

---

### THIS PRODUCT IS CONSIDERED HAZARDOUS

Appearance: Clear, light yellow liquid  
Odor: Characteristic aromatic fluid Odor

<b>Suggested HMIS RATING</b>	<b>HEALTH = 1</b>	<b>FIRE = 1</b>	<b>REACTIVITY = 0</b>	<b>PPE = B</b>
<b>Suggested NFPA RATING</b>	<b>HEALTH = 1</b>	<b>FIRE = 1</b>	<b>REACTIVITY = 0</b>	

### EMERGENCY OVERVIEW

**WARNING!** Direct contact with liquid or vapors may cause skin or eye irritation. This product is harmful if ingested. Avoid inhalation of vapor.

### ROUTES OF ENTRY:

Inhalation of vapor, skin and eye contact.

### POTENTIAL HEALTH EFFECTS

#### EYE CONTACT:

Slightly irritating to eyes. Processing vapors may be irritating.

#### SKIN CONTACT:

Highly irritating to skin. Slightly toxic if adsorbed into skin. Repeated contact with skin may cause contact dermatitis. A single prolonged exposure may result in the material being absorbed through skin in harmful amounts.

#### INGESTION/INHALATION:

No more than slightly toxic if swallowed. Significant adverse health effects are not expected to develop if only small amounts are swallowed. (Several tablespoons) Larger amounts can cause more serious reactions.

**SYMPTOMS OF OVEREXPOSURE:** Headache, dizziness, nausea, vomiting, unconsciousness, vertigo, anxiousness, labored breathing, drowsiness, and confusion are common symptoms of overexposure.

---

**SECTION 4 FIRST AID MEASURES**

---

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes while holding the eyelids open. If irritation persists, see a physician.

**SKIN:** Remove contaminated clothing. Wash skin thoroughly with soap and water. Launder contaminated clothing. See a doctor if irritation persists.

**INGESTION:** If swallowed, call a physician immediately. ONLY induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. If medical advice cannot be obtained, take the person, product container and MSDS to the nearest medical emergency center.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration and seek medical attention immediately. Remove material from eyes, skin and clothing.

---

**SECTION 5 FIRE-FIGHTING MEASURES**

---

**FIRE HAZARD DATA**

Autoignition Temp: >340°C (752°F)  
EXTINGUISHING MEDIA: Carbon dioxide or Dry Chemical

**SPECIAL FIRE FIGHTING PROCEDURE:**

Firefighter should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus. Water or foam may cause frothing if it gets below the surface of the liquid and turns to steam. Water can be used to cool fire-exposed containers, to protect personnel and to disperse vapors and spills.

---

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

---

Procedures in Case of Accidental Release, Breakage or Leakage:

Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb with suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

---

**SECTION 7 STORAGE AND HANDLING**

---

Precautions to be taken:

Avoid contact with eyes, skin, and clothing.

Avoid breathing vapors or mist.

Handling: Minimum feasible handling temperatures should be maintained.

Storage: Periods of exposure to high temperatures should be minimized.

Water contamination should be avoided.

Dispose of used containers; do not reuse.

---

**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

---

Protective Equipment (Type)

Eye/Face Protection:

Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.

Skin Protection:

Protective clothing such as coveralls or lab coats should be worn. Launder or dry-clean when soiled. Gloves and boots resistant to chemicals and petroleum distillates required. Exposed workers should wash exposed skin several times daily with soap and water.

Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.

**Respiratory Protection:**

Airborne concentrations should be kept to lowest levels possible. If vapor, dust or mist is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air-supplied respirator after determining the airborne concentration of the contaminant.

Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown.

**Ventilation:**

Local exhaust ventilation recommended if generating vapor, dust, or mist. If exhaust ventilation is not available or inadequate, use MSHA or NIOSH approved respirator as appropriate.

Exposure Limit for the Total Product: None established for product

---

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

---

Appearance:	Clear yellow liquid.
Flash Point (COC)	180°C (356°F)
Autoignition Temp:	>340°C (644°F)
Boiling point (deg C):	> 300°C (>572°F) at atmospheric pressure
Specific Gravity (water=1):	0.86-0.88
Viscosity:	11 - 13 cSt at 40 °C
Vapor Pressure:	0.003 hPa at 25C
Solubility in Water (%):	Negligible

---

**SECTION 10 STABILITY AND REACTIVITY**

---

Stability:	Stable (thermal, light).
Incompatibility:	May react with strong oxidizing materials.
Hazardous Decomposition:	Normal combustion forms carbon dioxide and water vapor. Incomplete combustion can form carbon monoxide.
Hazardous Polymerization:	Will not occur.

---

**SECTION 11 TOXICOLOGICAL INFORMATION**

---

Human experience: Prolonged or repeated skin contact may result in irritant dermatitis. Processing temperatures may release vapors capable of irritating eyes and upper respiratory tract.

Acute animal toxicity data (literature data):

Oral:	LD50, rat, >5,000 mg/kg, Practically nontoxic.
Dermal:	LD50, rabbit, >5,000 mg/kg, Practically nontoxic.
Eye Irritation:	Rabbit, slightly irritating @ 24 hrs.
Skin Irritation:	Rabbit, moderately irritating @ 4 hrs.

Mutagenicity: No genetic effects were observed in standard tests

---

**SECTION 12 DISPOSAL CONSIDERATIONS**

---

U.S. EPA RCRA Status: This material may be a hazardous waste as that term is defined by the Resource Conservation and Recovery Act (RCRA), 40CFR 261.24., due to its toxicity characteristic. This material should be analyzed in accordance with Method 1311 of the following compound:  
U.S. EPA RCRA (D018) Compound/Characteristic: Benzene

Disposal Considerations: Consult 40 CFR 268.40 or appropriate local regulations for concentration based standards.

---

**SECTION 13 TRANSPORT INFORMATION**

---

**DOT:** Not regulated according to DOT.  
**IMDG:** Not regulated according to IMDG.  
**ICAO/IATA:** Not regulated according to ICAO/IATA.  
**TDG:** Not regulated according to TDG.

---

**SECTION 14 REGULATORY INFORMATION**

---

**All components are in compliance with the following inventories: TSCA, EINECS, DSL, ECL**

**CERCLA SUPERFUND**

This material contains no Reportable Quantity (RQ) Substance that are currently listed under 40 C.F.R. § 302.4

**SARA HAZARD NOTIFICATION**

Hazard Categories under Title III Rules (40 CFR 370): Immediate.

**SARA 313 INFORMATION**

This material contains no substances that are currently subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 C.F.R. Part 372:

**CANADIAN WHMIS classification:** D2(B) – Materials causing other Toxic Effects.

---

**SECTION 15 ENVIRONMENTAL INFORMATION**

---

**ENVIRONMENTAL TOXICITY (Literature Data):**

Invertebrates	48 hr. EC50 Water Flea (Daphnia Magna) 0.77 mg/l
Fish	96 hr. LC50 Rainbow Trout (Oncorhynchus mykiss) >0.97 mg/l
	96 hr. LC50 Fathead Minnow (Pimephales promelas) >16 mg/l
Algae	96 hr. LC50 Algae (Selenastrum capricornutum) >0.67 mg/l

**ENVIRONMENTAL FATE:**

Biodegradation	Resistant to biodegradation.
----------------	------------------------------

---

**SECTION 16 ADDITIONAL INFORMATION**

---

Date of Revision: August 12, 2010  
Supersedes: December 19, 2007

The information contained herein is based on the data available to us and is believed to be correct. However, Pacific Functional Fluids makes no warranty, expressed or implied regarding the accuracy of the data or the results to be obtained from the use thereof. Pacific Functional Fluids assumes no responsibility for injury from the use of the product described herein.