



## MATERIAL SAFETY DATA SHEET

### I. PRODUCT AND COMPANY IDENTIFICATION

Manufacturer: Radco Industries, Inc. PO Box 305 LaFox, IL 60147 USA Emergency Phone: (630) 232-7966 Website: www.Xceltherm.com	<b>Emergency Phone Numbers:</b> For chemical emergency, spill, leak, fire exposure, accident or medical emergency, call CHEMTREC: North America 1-800-424-9300 International +1 703-527-3887
Product Name: <b>XCEL THERM® MK-1</b> Heat Transfer Fluid	For shipping emergency or off-hours rush orders call: 1-630-232-7966 or 1-630-336-6728
Effective Date: 8/10/1993 Updated 9/15/2010	

### II. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS#	CONCENTRATION
Diphenyl Oxide (phenyl ether)	101-84-8	73%
Diphenyl	92-52-4	27%

This product contains, as components, the substances listed above which are identified as hazardous chemicals under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### III. HAZARD IDENTIFICATION

#### POTENTIAL HEALTH EFFECTS

##### Eye

May cause pain. May cause slight transient eye irritation.

##### Skin Contact

Short single exposure not likely to cause significant skin irritation. Prolonged or repeated exposure may cause skin irritation. Caution required when maintaining vent piping due to potential presence of phenol.

##### Skin Absorption

A single prolonged skin exposure is not likely to result in absorption of harmful amounts. The dermal LD<sub>50</sub> has not been determined.

##### Ingestion

Single dose oral toxicity is low. The LD<sub>50</sub> for rats is 2000mg/kg. Ingestion of large amounts may cause headache, vomiting, and diarrhea. (Also see systemic section).

##### Inhalation

Excessive exposure may cause liver and kidney effects, and central and peripheral nervous disorders. Available data is inadequate to evaluate carcinogenicity. No data on components other than biphenyl, which did not produce birth defects in laboratory animals, however, at excessive doses, did cause other toxic effects on the mother and fetus. Results of in-vitro ("test tube") mutagenicity tests have been negative. Results of mutagenicity tests on biphenyl in animals have been negative.

### IV. FIRST AID MEASURES

#### Eyes

Flush immediately with water for at least 15 minutes. Call physician.

#### Skin

Wash off in flowing water or shower. Wash contaminated clothing before reuse.

#### Ingestion

Induce vomiting if large amounts are ingested. Call physician.

#### Inhalation

Remove to fresh air if effects occur. Call physician.

**Note to physician:** No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.



## V. FIRE-FIGHTING MEASURES

**Flash point:** > 124°C

**Flammable Limits**

**UFL:** 6.2%

**LFL:** 0.6%

**Extinguishing Media:** Water fog, Foam, CO<sub>2</sub>, Dry Chemical.

**Fire Fighting Procedures**

On burning, this product can release hazardous decomposition products as fumes and vapors. Fire fighters or others exposed to vapors or products of combustion should wear self-contained breathing apparatus and full protective clothing. Thoroughly decontaminate equipment after use.

**Fire Fighting Equipment**

Positive pressure self-contained breathing apparatus may be needed in enclosed spaces.

## VI. HANDLING AND STORAGE

**Exposure guideline**

- Diphenyl oxide (phenyl ether): ACGIH TLV is 1 ppm; STEL is 2 ppm. OSHA PEL is 1 ppm.
- 1,1-biphenyl (diphenyl): ACGIH TLV and OSHA PEL are 0.2 ppm.

**Ventilation**

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**Respiratory Protection**

Avoid breathing vapor or mist. Use NIOSH/MSHA approved equipment when airborne exposure limits are exceeded. Full face shield equipment is recommended and, if used, replaces need for full face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for given application. The respirator use limitations specified by NIOSH/MSHA or the manufacturer must be observed. High airborne concentrations may require use of self-contained breathing apparatus. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

**Skin Protection**

For brief contact, no precautions other than clean body-covering clothing should be needed. Use impervious gloves when prolonged or frequently repeated contact could occur, such as during vent header maintenance. Consult glove manufacturer to determine appropriate type glove for given application.

**Eye Protection**

Wear chemical goggles and have eye baths available where there is significant potential for eye contact.

**Special precautions to be taken in handling and storage**

Practice reasonable care and caution. Avoid breathing vapors if generated. Avoid direct contamination of water because of fish toxicity.

## VII. PHYSICAL AND CHEMICAL PROPERTIES

<b>Boiling Point:</b>	257°C (495°F)
<b>Vapor Pressure:</b>	0.022 mmHg @ 25°C
<b>Density @ 25°C:</b>	1.062 g/L
<b>Solubility in Water:</b>	13.8 ppm @ 15.6°C (60°F)
<b>Appearance:</b>	Straw-colored Liquid
<b>Odor:</b>	Aromatic Odor



## VIII. STABILITY AND REACTIVITY

### Stability

Excellent thermal stability characteristics at typical use temperatures.

### Materials to avoid

Exposure to materials which are highly oxidizing should be avoided. Product is non-corrosive to metals.

### Hazardous decomposition products

The potential exists for trace amounts of benzene to form when used at elevated temperatures. Similarly, with this product, small amounts of phenol may form. Both components are likely to concentrate in the vent pipe header. Incomplete combustion would give various cracked hydrocarbons.

### Hazardous Polymerization

Does not occur.

## IX. ENVIRONMENTAL AND DISPOSAL INFORMATION

### Action to take for spills/leaks

Dike to contain spill. Recover if possible. Small spills can be covered with absorbent material.

### Disposal Method

Waste products should be incinerated or disposed of in accordance with applicable federal, state and local regulations. This material should not be dumped, spilled, rinsed or washed into sewers or public waterways.

## X. ECOLOGICAL INFORMATION

The following data have been classified using the criteria adopted by the European Economic Community (EEC) for aquatic organism toxicity. A legend summarizing the classification scheme appears below.

Invertebrate: 48-hour EC50 *Daphnia magna*: 2.4 mg/L; Toxic  
Warm water fish: 96-hr LC50 Fathead minnow: 24 mg/L; Harmful  
Coldwater fish: 96-hr LC50 Rainbow trout: 7.6 mg/L; Toxic  
Algae: 96-hr EC50 Algae (chlorophyll): 1.3 mg/L; Toxic

Legend for Aquatic Organism Toxicity (Journal of the European Communities, Annex VII A, Section 5.2.1)

Values	Classifications
LC50 or EC50 < or = 1.0 mg/L	Very Toxic
LC50 or EC50 > 1.0 mg/L and < or = 10 mg/L	Toxic
LC50 or EC50 > 10 mg/L and < or = 100 mg/L	Harmful
LC50 or EC50 > 100 mg/L	Practically Nontoxic

## XI. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

### US DOT Classification

Environmentally Hazardous Substances, Liquid, N.O.S. (Contains diphenyl, diphenyl oxide), 9, UN3082, III, RQ (biphenyl)

**US DOT Label:** Class 9

**DOT Reportable Quantity:** Packages of 377 lbs or more contain a 100 lb RQ of biphenyl

**DOT Special Provisions:** This material meets the definition of a marine pollutant

**IMDG Code:** See US DOT

**IATA/ICAO:** See US DOT



## XII. REGULATORY INFORMATION

### SARA 313 Information

This product contains the following substance subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Biphenyl                      CAS# 92-52-4                      27%

### SARA Hazard Category

Xceltherm<sup>®</sup> MK-1 has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Re-authorization Act of 1986 (SARA Title III) and is considered under applicable definitions, to meet the following categories:

- An immediate health hazard
- A delayed health hazard

### Toxic Substances Control Act

All ingredients are listed on the TSCA inventory.

The CAS #'s for TSCA are: 101-84-8 and 92-52-4

### CERCLA Reportable Quantity

100 lb RQ of biphenyl; release of more than 377 pounds of this product to the environment in a 24 hour period requires notification to the National Response Center (800-424-8802 or 202-426-2675)

### California (Proposition 65)

Not applicable

### WORKPLACE HAZARD IDENTIFICATION SYSTEM

Health: 2	Fire: 1	Reactivity: 0
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### WHMIS Information

The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is: D2B

### Canadian TDG information

For guidance, the Transportation of Dangerous Goods Classification for this product is: Not regulated

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WARNING: "Empty" containers retain residue (liquid and/or vapor) and can 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. Do not attempt to clean since residue is difficult to remove and even a trace of remaining material constitutes as explosive hazard. "Empty" drums should be completely drained, properly bunged, and promptly returned to a drum recycler. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

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