



Material Safety Data Sheet

The Dow Chemical Company
Midland, Michigan 48674

The Dow Chemical Company, Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 25576

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Product Name: DOWTHERM* A HEAT TRANSFER FLUID

Effective Date: 12/22/95 Date Printed: 12/18/97

MSDS: 000412

1. INGREDIENTS: (% w/w, unless otherwise noted)

Diphenyl oxide (phenyl ether)	CAS# 000101-84-8	73%
Biphenyl	CAS# 000092-52-4	27%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

2. PHYSICAL DATA:

APPEARANCE: Straw-colored liquid.
ODOR: Aromatic odor.
BOILING POINT: 495F, 257C
VAP. PRESS: 0.025 mmHg @ 25C
VAP. DENSITY: Greater than 1
SOL. IN WATER: 13.8ppm @ 60F
SP. GRAVITY: 1.050-1.075 @ 25/25C

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: 236F, 113C
METHOD USED: TCC
AUTOIGNITION TEMPERATURE: 1110F, 599C

FLAMMABLE LIMITS
LFL: 0.8% (347F, 175C)
UFL: 7.0% (347F, 175C)

EXTINGUISHING MEDIA: Water fog, carbon dioxide, dry chemical.
Water fog, applied gently, may be used as a blanket for fire extinguishment. If possible, contain fire run off water. For large scale fires, direct water stream may cause violent frothing, but fine water spray may help control situation.

FIRE & EXPLOSION HAZARDS: Keep unnecessary people away; isolate hazard area and deny unnecessary entry. Dense smoke emitted

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5. ENVIRONMENTAL AND DISPOSAL INFORMATION: (CONTINUED)

dump into any sewers, on the ground, or into any body of water. Any disposal practice must be in compliance with federal, state, provincial, and local laws and regulations. For additional information, see: Section 4 (REACTIVITY DATA) and "REGULATORY INFORMATION."

6. HEALTH HAZARD DATA:

EYE: May cause pain. May cause slight transient (temporary) eye irritation. Vapors may irritate eyes.

SKIN CONTACT: Prolonged or repeated exposure may cause skin irritation, even a burn.

SKIN ABSORPTION: A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The dermal LD50 has not been determined.

INGESTION: Single dose oral toxicity is low. The oral LD50 for rats is greater than 2000 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury. Observations in animals include liver and kidney injury.

INHALATION: Excessive exposure may cause irritation to upper respiratory tract and lungs. May cause headache and nausea due to odor.

SYSTEMIC & OTHER EFFECTS: Repeated excessive exposures may cause irritation to upper respiratory tract and lungs. Signs and symptoms of excessive exposure may be nausea and/or vomiting. Signs and symptoms of excessive exposure may be abdominal cramps and/or diarrhea. Excessive exposures may cause liver, kidney and gastrointestinal effects and possibly central and peripheral nervous disorders.

CANCER INFORMATION: Available data are inadequate to evaluate carcinogenicity.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely. Even exposures having an adverse effect on the mother should have no effect on the fetus.

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8. HANDLING PRECAUTIONS: (CONTINUED)

could occur, such as during vent header maintenance, use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron or full-body suit will depend on operation.

EYE PROTECTION: Use safety glasses. If vapor exposure causes eye discomfort, use a full-face respirator.

9. ADDITIONAL INFORMATION:

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.

Caution is required when maintaining vent piping because small amounts of benzene and/or phenol may form when this product is used at elevated temperatures; these hazardous materials are likely to concentrate in the vent pipe header.

Above flash point vapor-air mixtures will burn within flammable limits noted above. Spills of these organic liquids on hot fibrous insulations may result in fluid/vapor combustion in the insulation.

MSDS STATUS: Revised sections 3, 7 and Regulatory Information.

For information regarding state/provincial and federal regulations see The Regulatory Information Section.

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REGULATORY 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 above. 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, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSD Sheet for health and safety information.

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances 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:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
BIPHENYL	000092-52-4	27 %

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization 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 (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

The CAS number(s) for TSCA is(are):
000101-84-8 and 000092-52-4

STATE RIGHT-TO-KNOW: The following product components are cited on

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REGULATORY INFORMATION (CONTINUED)

D2B

CANADIAN TDG INFORMATION: For guidance, the Transportation of Dangerous Goods Classification for this product is:

Not regulated

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The Information Herein Is Given In Good Faith, But No Warranty,
Express Or Implied, Is Made. Consult The Dow Chemical Company
For Further Information.