Safety Data Sheet

Issue Date: 13-Nov-2014 **Revision Date:** 30-SEP-2015 **Version** 2

1. IDENTIFICATION

Product Identifier
Product Name Thermaflo® A

Other means of identification
SDS # CG-004

Synonyms NA
UN/ID No UN3082

Recommended use of the chemical and restrictions on use
Recommended Use Heat transfer fluid.

Details of the supplier of the safety data sheet
Supplier Address
ORG Chem Group, LLC
2406 Lynch Road
Evansville, IN 47711
www.chem-group.com

Emergency Telephone Number
Company Phone Number Non ER questions 800-489-2306 / 812-464-4446
Emergency Telephone (24 hr) Chemtrec 1-800-424-9300 (North America) 1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Appearance Clear to light yellow liquid **Physical State** Liquid **Odor** Aromatic

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3

Hazards Not Otherwise Classified (HNOC)
May be harmful if swallowed

Signal Word
Warning

Hazard Statements
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Avoid sparks, welding and cutting on or near drums, even if empty
An improperly designed or maintained heat transfer system may permit the release of fluid, or air/moisture leakage into the system. This leakage could lower the fluid's flashpoint and/or produce light ends. System leaks that result in saturated insulation may, when heated over time, create a combustible mixture when suddenly exposed to air. Leakage of fluid from the system at operating temperature and pressure may cause fluid to disperse as an aerosol, which may result in flammable concentrations of vapor in the air. Thermal degradation or other decomposition of the fluid can occur in an improperly maintained heat transfer system, and also for other reasons, including operating the system above the fluid's recommended operating temperature and failure to maintain proper fluid velocity. Degradation or decomposition of the fluid may also create "low boiler" hydrocarbon compounds or light ends. The occurrence of any of the foregoing conditions may lead to an increased risk of explosion and/or fire

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a poison center or doctor/physician
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash it before reuse
If skin irritation occurs: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a poison center or doctor/physician if you feel unwell

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other Hazards
Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Reclaimed DT-A

Chemical Name	CAS No	Weight-%
Diphenyl Oxide	101-84-8	70-80
Biphenyl	92-52-4	20-30

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

General Advice Provide this SDS to medical personnel for treatment.

Eye Contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

Skin Contact IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/ attention.

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Ingestion Call a physician immediately. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Most important symptoms and effects

Symptoms Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water spray, dry powder, foam, or carbon dioxide (CO2).

Large Fire See Sections 2 and 10 of this Safety Data Sheet.

Unsuitable Extinguishing Media Do not scatter spilled material with high pressure water streams.

Specific Hazards Arising from the Chemical
Dangerous gases or fumes may occur in case of fire.

Hazardous Combustion Products Benzene. Phenols.

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
Wear self contained breathing apparatus for fire fighting if necessary. Use standard firefighting procedures and consider the hazards of other involved materials Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water may be used to cool closed containers to prevent pressure buildups and possible ignition or explosion when exposed to extreme heat. Do not allow run-off from fire-fighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Ensure adequate ventilation, especially in confined areas.

Environmental Precautions Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Collect spillage.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Dike far ahead of liquid spill for later disposal. Absorb with inert material or sweep up, and then place in suitable container for chemical waste.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Wash face, hands, and any exposed skin thoroughly after handling. Use personal protection recommended in Section 8. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. During use at elevated temperatures thermal decomposition leads to the formation of low-boiling and high-boiling secondary products with potentially flammable properties. When flammable liquids are concentrated and collected appropriate risk management measures must be applied. Risk management measures for flammable liquids are at least: Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting equipment. Keep container away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Wear protective gloves/protective clothing/eye protection/face protection.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up.

Incompatible Materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Diphenyl Oxide 101-84-8	STEL: 2 ppm vapor TWA: 1 ppm vapor	TWA: 1 ppm vapor TWA: 7 mg/m^3 vapor (vacated) TWA: 1 ppm vapor (vacated) TWA: 7 mg/m^3 vapor	IDLH: 100 ppm vapor TWA: 1 ppm vapor TWA: 7 mg/m^3 vapor
Biphenyl 92-52-4	TWA: 0.2 ppm	TWA: 0.2 ppm TWA: 1 mg/m^3 (vacated) TWA: 0.2 ppm (vacated) TWA: 1 mg/m^3	IDLH: 100 mg/m^3 TWA: 0.2 ppm TWA: 1 mg/m^3

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety goggles.

Skin and Body Protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory Protection Respiratory protection is not required except in emergencies or when conditions cause excessive airborne levels, mist, or vapors. Select the appropriate approved organic vapor air-purifying respirator, self-contained breathing apparatus, or air supplied respirators in situations where there may be potential for overexposure.

General Hygiene Considerations Avoid contact with skin, eyes and clothing. After handling this product, wash hands before eating, drinking, or smoking. If contact occurs, remove contaminated clothing. If needed, take first aid action shown on section 4 of this SDS. Launder contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid		
Appearance	Clear to light yellow liquid	**Odor**	Aromatic
Color	Clear to light yellow	**Odor Threshold**	Not determined

Property	**Values**	**Remarks • Method**
pH	Not determined	
Melting Point/Freezing Point	12 °C / 54 °F	
Boiling Point/Boiling Range	257 °C / 494.6 °F	
Flash Point	113 °C / 235 °F	
Evaporation Rate	< 0.1	(butyl acetate = 1)
Flammability (Solid, Gas)	Liquid-not applicable	
Upper Flammability Limits	7.0%	
Lower Flammability Limit	0.8%	
Vapor Pressure	0.25 mmHg	@ 25°C (77°F)
Vapor Density	> 1.0	(Air=1)
Specific Gravity	1.05-1.07	@ 25 °C (77 °F)
Water Solubility	0.00138% at 15.6(60.8°F)	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	599 °C / 1110.2 °F	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	2.5 cSt	@ 40°C (104°F)
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
Keep out of reach of children.

Incompatible Materials
Strong oxidizing agents.

Hazardous Decomposition Products
Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes serious eye irritation.

Skin Contact Causes skin irritation.

Inhalation Avoid breathing vapors or mists.

Ingestion May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Diphenyl Oxide 101-84-8	= 2450 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	-
Biphenyl 92-52-4	= 2140 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

STOT - single exposure May cause respiratory irritation.

Numerical measures of toxicity
Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity
Harmful to aquatic life with long lasting effects.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Diphenyl Oxide 101-84-8		4: 96 h Pimephales promelas mg/L LC50 flow-through 4 - 7.9: 96 h Pimephales promelas mg/L LC50 static		0.11 - 1.1: 48 h Daphnia magna mg/L LC50
Biphenyl 92-52-4	1.28: 3 h Chlamydomonas angulosa mg/L EC50	1.65 - 2.29: 96 h Pimephales promelas mg/L LC50 flow-through 1.17 - 1.81: 96 h Pimephales promelas mg/L LC50 static 4.3 - 5.1: 96 h Lepomis macrochirus mg/L LC50 static 1.4 - 1.6: 96 h Oncorhynchus mykiss mg/L LC50 static	EC50 = 1.89 mg/L 30 min EC50 = 3.20 mg/L 5 min EC50 = 3.30 mg/L 15 min	0.63 - 0.85: 48 h Daphnia magna mg/L EC50 Static

Persistence/Degradability
This product is biodegradable.

Bioaccumulation
Not determined.

Mobility

Chemical Name	Partition Coefficient
Diphenyl Oxide 101-84-8	4.24
Biphenyl 92-52-4	4.09

Other Adverse Effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT
UN/ID No UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (Biphenyl)
Hazard Class 9
Packing Group III
Reportable Quantity (RQ) 100 lbs for Biphenyl

IATA
UN/ID No UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (Biphenyl)
Hazard Class 9
Packing Group III

IMDG
UN/ID No UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (Biphenyl)
Hazard Class 9
Packing Group III
Marine Pollutant This material may meet the definition of a marine pollutant

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Diphenyl Oxide	Present	X		Present		Present	X	Present	X	X
Biphenyl	Present	X		Present		Present	X	Present	X	X

Legend:

TSCA *- United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL *- Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS *- Japan Existing and New Chemical Substances*

IECSC *- China Inventory of Existing Chemical Substances*

KECL *- Korean Existing and Evaluated Chemical Substances*

PICCS *- Philippines Inventory of Chemicals and Chemical Substances*

AICS *- Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Biphenyl 92-52-4	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Biphenyl - 92-52-4	92-52-4	20-30	1.0

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Diphenyl Oxide 101-84-8	X	X	X
Biphenyl 92-52-4	X	X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	Not determined	Not determined	Not determined	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	Not determined	Not determined	Not determined	Not determined

Issue Date: 13-Nov-2014
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Revision Note: updated product name

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet