





SAFETY DATA SHEET (SDS)

1. Identification of the substance/mixture and of the company/undertaking

Product Name: Manto Mantherm K2
Suggested applications and limited use: Heat transfer medium.
Manufacture: Jiangsu Manto Chemistry Room B, Floor 11, Building No.1, Beitanghe Road No.8, Hengsheng Science & Technology Park, Tianning District, Chanzhou City, Jiangsu Province,China Tel: +0086-0519-85760560

2. Hazards identification

Classification	
Physical Hazards	Flammable liquids , Category 4
Health Hazards	Toxicant substance,eating,Category 5 ; Toxicant substance, skin, Category 3; Skin irritation/ corrosion, Category 2 ; Hazardous substance, breathing, Category 2
Environment Hazards	-
Symbol(s):  	
Signal Word: Danger	
Hazard Statements: Highly flammable liquid and vapor. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness.	
Precautionary Statements: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/ eye protection/ face protection. Do NOT induce vomiting if swallowed. Do NOT disposal to the environment.	



Other Hazards	-
---------------	---

3. Composition/information on ingredients

The Chinese and English name of hazardous substance	CAS -NO.	Concentration/Concentration range (%)
Diphenyl oxide	101-84-8	73.5
Biphenyl	92-52-4	26.5

4. First aid measures

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Skin Contact In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Eye Contact Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
Significant symptom and hazard: Respiratory tract burn, skin burn, eye burn, mucous burn
Protection for first-aid personnel: Give first aid with grad C protective device. Avoid steam inhalation.
Tips for physician: If inhaled, give oxygen. Avoid gastric lavage or vomiting.

5. Fire-fighting measures

Suitable extinguishing media: Use DRY chemical powder, carbon dioxide gas, chemical fog or foam.
Specific hazards during fire fighting: carbon oxides (CO, CO ₂) during high temperature burning. If the temperature of air and steam mixture is higher than flash point, it may cause fire.
Special fire-fighting procedures: <ol style="list-style-type: none">1. Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.2. Stop the leak and flow of oil and use extinguishant, isolate the fire; If not dangerous, remove the storage vessel from the fire area.3. Use water spray to cool the storage vessel near the fire area, until the fire is extinguished.4. Pay attention that the oil is easy to react with oxidizing agent.5. The fire fighters should avoid to inhale the noxious gas from the high temperature burning.6. Do NOT use water cannon to spray the leaked oil.7. Try to use automatic or fixed fire fighting equipment. Avoid personnel from the fire area.
Protection of fire-fighters: Be sure to use an approved/certified respirator or equivalent.



6. Accidental release measures

Personal precautions: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations.

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up: according to local / national regulations

7. Handling and storage

Handling:

1. Wear PPE during moving and using the oil.
2. Keep away from open flames, hot surfaces, sources of ignition and strongly acid and strongly alkali.
3. Do NOT heat, polish, weld or drill the vessel. It can explode in high temperature, even if it is abandoned empty vessel.
4. Do NOT inflate the vessel, in order to avoid it from crack under high pressure.

Storage:

No smoking. Keep container tightly closed. Keep container in a cool, well-ventilated area.

8. Exposure controls/personal protection

Airborne exposure (ml/m³=ppm)

Limits:

Mantherm K2 No specific occupational exposure limit has been established.

Diphenyl oxide ACGIH TLV: 2 ml/m³; 14 mg/m³; 15-min short term exposure limits
OSHA PEL: 1 ml/m³; 7 mg/m³; 8-hr TWA
Mexican OEL: 1 ml/m³; 7 mg/m³; 8-hr TWA

Biphenyl ACGIH TLV: 0.2 ml/m³; 1.3 mg/m³; mist; 8-hr TWA
OSHA PEL: 0.2 ml/m³; 1.0 mg/m³; 8-hr TWA
Mexican OEL: 0.2 ml/m³; 1.5 mg/m³; 8-hr TWA
Mexican OEL: 0.6 ml/m³; 4 mg/m³; 15-min short term exposure limits

Eye protection: Wear safety goggles.

Have eye flushing equipment available.

Hand protection: Wear chemical resistant gloves.

Consult the glove/clothing manufacturer to determine the appropriate type of glove/clothing for a given application.

Body protection: Wear suitable protective clothing.

Consult the glove/clothing manufacturer to determine the appropriate type of glove/clothing for a given application.

Wear full protective clothing under potential exposure to splashes.

Wash contaminated skin promptly.

Laundry contaminated clothing and clean protective equipment before reuse.

Wash thoroughly after handling.

Install safety shower near places where skin exposure is possible.



Respiratory:	Avoid breathing vapor or mist
Protection:	Use approved respiratory protection equipment (full face piece recommended) when airborne exposure limits are exceeded. If used, full face piece replaces the need for face shield and/or chemical goggles. Consult the respirator manufacturer to determine the appropriate type of respirator for a given application. Observe respirator use limitations specified by the manufacturer.
Ventilation:	Provide natural or mechanical ventilation to control the exposure levels below airborne exposure limits. If practical, use local mechanical exhaust ventilation at sources of air contamination, such as process equipment workshop. Please refer to exposure limits legislated locally where the substance will be used.

9. Physical and chemical properties

Viscosity @ 100°C: 0.99mm ² /s
Kinematic@ 40°C : 2.48 mm ² /s
Density @25°C: 1066kg/m ³
Normal boiling point: 257 °C
Crystallization point: 12 °C
Water solubility: Approximately 25 mg/l
Average molecular weight: 166

Note: The above physical data is based on the typical properties of sample test in our lab. The typical properties can not be considered as COA or technical requirements.

10. Stability and reactivity

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Conditions to avoid : Heat, sparks, fire, and oxidizing agents.
Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous decomposition products : Hydrocarbons , Carbon oxides.

11. Toxicological information

Exposure pathways: inhalation, dermal, eye, swallow.
Symptoms of overexposure: headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.
Acute toxicity Inhalation toxicity: the overdose of heated oil mist can cause uncomfortable feel, which can irritate the airway. Dermal toxicity: the dermal exposure can cause skin irritation and allergy. Eye toxicity: If spray into eye, it cause eye mucosa irritation, lacrimation and inflammation. Oral toxicity: vomiting and nausea.



LD50: > 5000 mg/kg (rat, swallow) LD50: —
mg/kg (rat, dermal)
LC50: — mg/m³ /hr (rat, inhalation)

Chronic toxicity

Inhalation toxicity: fibroma, pneumonolipoidosis, lipid granuloma.

Dermal toxicity: blocked pore will cause skin degreasing and dermatitis.

Eye toxicity: conjunctivitis

Oral toxicity: may be hazardous

NO reproduction toxicity.

According to OSHA standard report (29 CFR 1910.1200), this product is NOT listed as national toxic tort.

IARC classified as Group 3: the product can NOT be confirmed as human blastomogen.

EU 67/548/EEC: It is NOT listed as cancerogen.

12. Ecological information

Environmental Toxicity:

Invertebrates: 48 h, EC50 Water flea (*Daphnia magna*) 2.4 mg/l.

Fish: 96 h, LC50 Rainbow trout (*Oncorhynchus mykiss*) 7.6 mg/l.

96 h, LC50 Fathead minnow (*Pimephales promelas*) 24 mg/l.

Algae: 96 h, EC50 Algae (*Selenastrum capricornutum*) 1.3 mg/l.

Bio-degradation: Modified SCAS (OECD 302A) test: Primary degradation 99 %.

13. Disposal considerations

US EPA RCRA Status : This material when discarded may be regulated as a hazardous waste due to its toxicity under the Resource Conservation and Recovery Act (RCRA), 40 CFR (Code of Federal Regulations) 261.24. This material should be analyzed in accordance with Method 1311.

US EPA RCRA D018

Compound/Characteristic:
number: BENZENE hazardous waste

Disposal considerations : Incineration

Miscellaneous advice : Recycle or burn in accordance with the applicable standards.

This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

14. Transport information

The data provided in this section is for reference only. Please properly classify the materials to be transported in accordance with applicable regulations.

US DOT

Proper Shipping Name: Environmentally hazardous substance, liquid, N.O.S., biphenyl

Hazard Class: Class 9

Hazard Identification Number: UN3082

Packing Group : PG III

Shipping label: Class 9

Special provisions:	This product meets the definition of a marine pollutant.
Other :	Applies only to containers with an reportable quantity or for shipments in bulk via water transportation.
Canadian TDG	
Other:	Not regulated.
Reportable Quantity/Limit:	
US DOT: Reportable quantity:	100 lbs biphenyl.
Package size containing reportable amount:	377 lbs

15. Regulatory Information

All components are listed in the following inventories: U.S. TSCA, EU EINECS, Canadian DSL, Australian AICS, Korean, Japanese ENCS, Phillipine PICCS, Chinese IECSC.	
Canadian WHMIS classification	D2 (A)-Materials Causing Other Toxic Effects D2 (B)-Materials Causing Other Toxic Effects
SARA Hazard Notification:	
Hazard Categories Under Title III Rules	Immediate
(40 CFR 370) :	Delayed
Section 302 Extremely Hazardous	Not applicable
Substances:	
Section 313 Toxic Chemical(s) :	Biphenyl
CERCLA Reportable Quantity :	100 lbs biphenyl
If the leakage into the environment of the chemical(s) within 24 hours exceeds the Reportable Quantity, the National Emergency Response center shall be notified.	

16. Other Information

Reference	<ol style="list-style-type: none"> 1. Globaly Harmonized System of Classification and Labling of Chemicals [ghs] 2. Recommendations on the tansport of dangerous goods-model regulations 3. GB/T 16483—2008 <p>Safty Data Sheet for Chemical Products—Content and Order of Sections</p>
------------------	--

Disclaimer:

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information and responsibility given only apply for this product. This SDS provides basic safety knowledge for the product user. Although certain hazards are described herein, we cannot guarantee they are certainly correct and do not assume any legal liability. Final determination of suitability of any material is the sole responsibility of the user.

If you have any questions, please e-mail info@manto.com.cn