1. Identification of the Substance/Mixture and of the Company/Undertaking

Product name
SCHULTZ® 385

Recommended use
Heat transfer fluids

Company
Jiangsu Zhongneng Chemical Technology Co., Ltd.

Address
Chemical Industry Park, Duigougang, Jiangsu, China

Telephone
+86-518-83866555

E-mail address
sales@dynovacn.com

Emergency telephone
+86-518-83866558

2. Hazards Identification

GHS classification in accordance with 29 CFR 1910.1200
Not a hazardous substance or mixture.

GHS label elements
Not a hazardous substance or mixture.

Other hazards
None known.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terphenyl</td>
<td>26140-60-3</td>
<td>85 - 100</td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>85-01-8</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Quaterphenyl</td>
<td>29036-02-0</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

4. First-Aid Measures
### General advice
In case of doubt or symptoms persist, seek medical advice. In case of unconscious, get medical attention immediately.

### Inhalation
Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.

### Eye contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

### Skin contact
Wash off with soap and plenty of water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

### Ingestion
Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a POISON CENTER/doctor if you feel unwell.

### Most important symptoms and effects, both acute and delayed
The molten product can cause serious burns.

### Indication of any immediate medical attention and special treatment needed

### Notes to physician
Treat symptomatically.

### 5. Fire-Fighting Measures

#### Extinguishing media

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Water spray / Carbon dioxide (CO₂) / Dry chemical / Foam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuitable extinguishing media</td>
<td>Don’t use direct water stream. May spread fire.</td>
</tr>
</tbody>
</table>

#### Hazardous combustion products
Hazardous decomposition products due to incomplete combustion
Carbon oxides

#### Further information
Use a water spray to cool fully closed containers. Do not allow run-off from fire fighting to enter drains or water courses.

This product is not classified as a fire-resistant heat transfer fluid. Precautions to avoid sources of ignitions should be taken.

#### Special protective equipment for firefighters
Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

### 6. Accidental Release Measures

#### Personal precautions, protective equipment and emergency procedures
Ventilate the area.
Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
Avoid contact with skin and eyes.
Material can create slippery conditions.
Wear appropriate personal protective equipment.
Local authorities should be advised if significant spillages cannot be contained.

#### Environmental precautions
Clear up spills immediately and dispose of waste safely.
Avoid release to the environment.
Methods and materials for containment and cleaning up

Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. Handling and Storage

Advice on safe handling

Do not breathe vapors or spray mist.
Handle product only in closed system or provide appropriate exhaust ventilation at machinery.
In case of insufficient ventilation, wear suitable respiratory equipment.
Keep away from flames and sparks.
Wear appropriate personal protective equipment.
Avoid contact with skin, eyes and clothing.
Wash thoroughly after handling.
Wash contaminated clothing before reuse.
Drain or remove substance from equipment prior to break-in or maintenance.
Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.
Keep in a cool place away from oxidizing agents.
8. Exposure Controls/Personal Protection

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terphenyl</td>
<td>26140-60-3</td>
<td>C</td>
<td>1 ppm</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.5 ppm</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Engineering measures

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Hand protection

Remarks: Wear suitable gloves. When handling hot material, use heat resistant gloves.

Eye protection: Wear safety glasses with side shields (or goggles).

Skin and body protection: Wear suitable protective clothing.

Protective measures: Ensure that eye flushing systems and safety showers are located close to the working place.
9. Physical and Chemical Properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild, pleasant</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH</td>
<td>Not determined</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>75 - 80°C</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>343°C (1,013 hPa)</td>
</tr>
<tr>
<td>Flash point</td>
<td>185°C (open cup)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper flammability limit(%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower flammability limit(%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt; 0.0001 hPa (25°C)</td>
</tr>
<tr>
<td>Vapor density (air=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Self-ignition</td>
<td>538°C</td>
</tr>
<tr>
<td>Method: ASTM D2155</td>
<td></td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.09 (50°C)</td>
</tr>
<tr>
<td>Density</td>
<td>1.041 kg/m³ (80°C)</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Solubility in water</td>
<td>0.15 mg/l</td>
</tr>
<tr>
<td>Solubility (other)</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Pow: 724,000</td>
</tr>
<tr>
<td></td>
<td>log Pow: 5.86</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>25.1 mm²/s (80°C)</td>
</tr>
<tr>
<td></td>
<td>3.75 mm²/s (100°C)</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not classified</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

Reactivity                      | None reasonably foreseeable.        |
Chemical stability              | Stable under normal conditions.     |
Possibility of hazardous reactions | None known.                         |
Conditions to avoid             | Heating in air. Keep away from flames and sparks. |
Incompatible materials          | Strong oxidizing agents.            |
Hazardous decomposition products | Emits acrid smoke and fumes when heated to decomposition. |
11. Toxicological Information

**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity: LD50 Oral (Rat): >= 2,300 mg/kg

Acute inhalation toxicity: LC50 (Rat): > 3.8 mg/l

Exposure time: 4 h

Acute dermal toxicity: LD50 Dermal (Rabbit): > 5,000 mg/kg

**Ingredients:**

Terphenyl:

Acute oral toxicity: LD50 Oral (Rat): > 2,000 mg/kg

Acute inhalation toxicity: LC50 (Rat): > 3.8 mg/l

Exposure time: 4 h

Acute dermal toxicity: LD50 Dermal (Rabbit): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**

Not classified based on available information.

**Product:**

Species: Rabbit

Exposure time: 24 h

Assessment: Not classified

Method: Acute Dermal Irritation / Corrosion

Result: Non-irritating to the skin.

**Ingredients:**

Terphenyl:

Species: Rabbit

Exposure time: 24 h

Result: none

**Serious eye damage/eye irritation**

Not classified based on available information.
Product:
Species: Rabbit
Result: slight irritation
Exposure time: 72 h
Assessment: Not classified
Method: Acute Eye Irritation / Corrosion

Ingredients:
Terphenyl:
Species: Rabbit
Result: slight
Exposure time: 72 h
Assessment: Not classified

Respiratory or skin sensitization
Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Product:
Remarks: No data available

Germ cell mutagenicity
Not classified based on available information.

Product:
Genotoxicity in vitro: Test Type: Mutagenicity - Bacterial
   Metabolic activation: +/− activation
   Method: Bacterial Reverse Mutation Assay
   Result: negative
: Test Type: Chromosome aberration test in vitro
   Metabolic activation: +/− activation
   Method: In vitro Mammalian Chromosome Aberration Test
   Result: negative
Test Type: Mutagenicity - Mammalian
Metabolic activation: +/- activation
Method: In vitro Mammalian Cell Gene Mutation Test
Result: negative

Test Type: Mutagenicity - Mammalian
Method: OECD Guideline 482
Result: negative

Genotoxicity in vivo: Species: Rat
Method: Mammalian Bone Marrow Chromosome Aberration Test
Result: negative

Ingredients:
Terphenyl:
Genotoxicity in vitro: Test Type: Mutagenicity - Bacterial
Metabolic activation: +/- activation
Method: Bacterial Reverse Mutation Assay
Result: negative

Method: In vitro Mammalian Chromosome Aberration Test
Result: negative

Test Type: Mutagenicity - Mammalian
Metabolic activation: +/- activation
Method: In vitro Mammalian Cell Gene Mutation Test
Result: negative

Test Type: Mutagenicity - Mammalian
Method: OECD Guideline 482
Result: negative

Genotoxicity in vivo: Species: Rat
Method: Mammalian Bone Marrow Chromosome Aberration Test
Result: negative
Carcinogenicity

Not classified based on available information.

Product:

Remarks: This information is not available.

IARC  No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA  No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP  No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Product:

Effects on fertility: Remarks: No data available

STOT-single exposure

Not classified based on available information.

Product:

Assessment: Not classified

STOT-repeated exposure

Not classified based on available information.

Product:

Assessment: Based on available data, the classification criteria are not met.

Repeated dose toxicity

Product:

Remarks: Based on available data, the classification criteria are not met.
Aspiration toxicity

Not classified based on available information.

Product:

No data available

Information on likely routes of exposure

Product:

Inhalation: Remarks: None known.
Skin contact: Remarks: None known.
Eye contact: Remarks: None known.
Ingestion: Remarks: May be harmful if swallowed.

12. Ecological Information

Ecotoxicity

Product:
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 27 mg/l
Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 0.022 mg/l
Exposure time: 48 h
LC50 (Mysidopsis bahia (opossum shrimp)): 0.028 mg/l
Exposure time: 96 h
Toxicity to algae: EC50 (Selenastrum capricornutum (green algae)): > 0.0248 mg/l
Exposure time: 72 h
NOEC (Scenedesmus subspicatus): 0.025 mg/l
Exposure time: 72 h
Toxicity to fish (Chronic toxicity): NOEC (Pimephales promelas (fathead minnow)): 0.037 mg/l
Exposure time: 30 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC (Daphnia magna (Water flea)): 0.0048 mg/l
Exposure time: 21 d
M-Factor (Chronic aquatic toxicity): 10

Ingredients:
Terphenyl:
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 27 mg/l
Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 0.022 mg/l
Exposure time: 48 h
LC50 (Mysidopsis bahia (opossum shrimp)): 0.028 mg/l
Exposure time: 96 h
Toxicity to algae: NOEC: 0.025 mg/l  
   Exposure time: 72 h
M-Factor (Acute aquatic toxicity): 10
Toxicity to fish (Chronic toxicity): NOEC (Pimephales promelas (fathead minnow)): 0.037 mg/l  
   Exposure time: 30 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC (Daphnia magna (Water flea)): 0.0048 mg/l  
   Exposure time: 21 d

**Persistence and degradability**

**Product:**
Biodegradability: Remarks: Not readily biodegradable.
Biochemical Oxygen Demand (BOD): Remarks: No data available
Chemical Oxygen Demand (COD): Remarks: No data available

**Ingredients:**
Terphenyl:
Biodegradability: Result: Not readily biodegradable.

**Bioaccumulative potential**

**Product:**
Bioaccumulation: Bioconcentration factor (BCF): < 600
   Species: Carassius auratus (goldfish)
   Bioconcentration factor (BCF): 600

**Ingredients:**
Terphenyl:
Bioaccumulation: Species: Carassius auratus (goldfish)
Bioconcentration factor (BCF): 600
Partition coefficient: n-octanol/water: log Pow: 5.09

**Mobility in soil**

**Product:**
Distribution among environmental compartments: log Koc: 5
Method: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC)

**Ingredients:**
Terphenyl:
Distribution among environmental compartments: log Koc: 5
Method: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC)

**Other adverse effects**
No data available

**13. Disposal Considerations**
Disposal methods
Waste from residues

Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal. This material when discarded may be a hazardous waste as that term is defined by the Resource Conservation and Recovery Act (RCRA), 40 CFR 261.24, due to its toxicity characteristic. This material should be analyzed in accordance with Method 1311 for the compound D018 BENZENE. Consult 40 CFR 268.40 or appropriate local regulations for concentration based standards. This product meets the criteria for a synthetic used oil under the U.S. EPA Standards for the Management of Used Oil (40 CFR 279). Those standards govern recycling and disposal in lieu of 40 CFR 260-272 of the Federal hazardous waste program in states that have adopted these used oil regulations. Consult your attorney or appropriate regulatory official to be sure these standards have been adopted in your state. Recycle or burn in accordance with the applicable standards.

14. Transport Information

International Regulations

IATA-DGR
UN/ID No.: UN 3077
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (terphenyl)
Class: 9
Packing group: III
Labels: Miscellaneous
Packing instruction (cargo aircraft): 956
Packing instruction (passenger aircraft): 956

IMDG-Code
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (terphenyl)
Class: 9
Packing group: III
Labels: 9
EmS Code: F-A, S-F
Marine pollutant: yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.
Domestic regulation

49 CFR

Not regulated as a dangerous good

Remarks: Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

15. Regulatory Information

EPCRA - Emergency Planning and Community Right-to-Know

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
Ingredients  CAS No.  Component TPQ (lbs)

SARA 311/312 Hazards: No SARA Hazards
SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:
Phenanthrene  85-01-8  1 - 5 %

The ingredients of this product are reported in the following inventories:
CH INV: On the inventory, or in compliance with the inventory
DSL: On the inventory, or in compliance with the inventory
AICS: On the inventory, or in compliance with the inventory
NZIoC: On the inventory, or in compliance with the inventory
ENCS: Not listed
ISHL: Not listed
KECI: On the inventory, or in compliance with the inventory
PICCS: On the inventory, or in compliance with the inventory
IECSC: On the inventory, or in compliance with the inventory
TCSI: On the inventory, or in compliance with the inventory
TSCA: On the inventory, or in compliance with the inventory

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

16. Other Information

Compilation date  10-Jan-2018

Disclaimer:
The SDS information applies only to the specified product, unless otherwise specified, in the case of a mixture of this product with other substances, which do not apply. The information provided is a guide for the safe operation and not as a guarantee of the quality manual. The SDS only those received professional training in the proper use of the product provides product safety information for. Users of this SDS, under special conditions of use must be made of the suitability of the SDS independent judgment. In special occasions, due to the use of this SDS caused injury, this SDS writers will not be held responsible.