SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Thermal Charge EGHD 50/50 Prediluted Heat Transfer Fluid

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Heat transfer fluid
Recommended use : Contact supplier for more information on uses.

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
3100 Sanders Road
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : 800 424 9300 (United States); 00 1 703 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral), Category 4 : H302 - Harmful if swallowed.
Specific target organ toxicity — Repeated exposure, Category 2 : H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

- GHS07
- GHS08

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) :
- H302 - Harmful if swallowed.
- H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Precautionary statements (GHS-US) :
- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P260 - Do not breathe mist, spray, vapors
- P264 - Wash affected areas thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P280 - Wear personal protective equipment as required.
- P301+P310 - If swallowed: Immediately call doctor/physician or poison center
- P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.
- P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
- P308+P313 - If exposed or concerned: Get medical advice/attention.
- P405 - Store locked up.
- P501 - Dispose of contents/container to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

No additional information available
Thermal Charge EGHD 50/50 Prediluted Heat Transfer Fluid Safety Data Sheet

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>% by wt</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethylene glycol</td>
<td>(CAS-No.) 107-21-1</td>
<td>&lt;= 50</td>
<td>Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td>water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>&lt; 50</td>
<td>Not classified</td>
</tr>
<tr>
<td>diethylene glycol</td>
<td>(CAS-No.) 111-46-6</td>
<td>&lt; 3</td>
<td>Acute Tox. 4 (Oral), STOT RE 2, H373</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Remove contaminated clothing. Wash with plenty of water. Wash contaminated clothing before reuse. If skin irritation occurs: Rinse immediately with plenty of water (for at least 15 minutes), Get medical advice/attention.

First-aid measures after eye contact: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice and attention.

First-aid measures after ingestion: Obtain emergency medical attention. Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER/doctor/physician if you feel unwell. If the person is fully conscious, make him/her drink two glasses of water. Never give an unconscious person anything to drink. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whiskey. For children, give proportionally less liquor, according to weight.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects: Causes damage to organs (kidneys) Oral.

Symptoms/effects after skin contact: Causes skin irritation.

Symptoms/effects after eye contact: Causes serious eye damage.

Symptoms/effects after ingestion: Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

4.3. Indication of any immediate medical attention and special treatment needed

A more effective intravenous antidote for physician uses is 4-methylpyrazole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occurred.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Unsuitable extinguishing media: Do not use a heavy water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture
Fire hazard: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Product is not flammable or combustible but may burn under fire conditions.

Reactivity: No dangerous reactions known under normal conditions of use.

5.3. Special protective equipment and precautions for fire-fighters
Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Equip cleanup crew with proper protection. Refer to section 8.2.
Emergency procedures: Ventilate area.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Store away from other materials.

6.4. Reference to other sections
For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
Hygiene measures: Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep only in the original container in a cool, well ventilated place away from: Heat sources. Keep container closed when not in use. Product may become solid at temperatures below -37 °C (-34 °F). Do not store near food, foodstuffs, drugs or potable water supplies. Do not cut, drill, weld, use a blowtorch on, etc. containers even when empty.
Incompatible products: Keep away from strong acids, strong bases and oxidizing agents.
Incompatible materials: Sources of ignition.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>compound</th>
<th>ACGIH Local name</th>
<th>ACGIH</th>
<th>Local name</th>
<th>ACGIH STEL (mg/m³)</th>
<th>ACGIH STEL (ppm)</th>
<th>ACGIH Remark (ACGIH)</th>
<th>ACGIH Regulatory reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>diethylene glycol (111-46-6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ethylene glycol (107-21-1)</td>
<td>ACGIH</td>
<td>ACGIH TWA (mg/m³)</td>
<td>10 mg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>ACGIH TWA (ppm)</td>
<td>25 ppm (Vapor fraction)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>ACGIH STEL (mg/m³)</td>
<td>10 mg/m³ (Inhalable fraction, Aerosol only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>ACGIH STEL (ppm)</td>
<td>50 ppm (Vapor fraction)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>water (7732-18-5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls
No additional information available
Thermal Charge EGHD 50/50 Prediluted Heat Transfer Fluid
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Avoid all unnecessary exposure. Gloves. Safety glasses.

Hand protection:
Wear protective gloves.

Eye protection:
Chemical goggles or safety glasses

Respiratory protection:
Respiratory protection not required in normal conditions. If exposed to levels above exposure limits wear appropriate respiratory protection.

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>62.07 g/mol Ethylene Glycol</td>
</tr>
<tr>
<td>Color</td>
<td>Fuschia</td>
</tr>
<tr>
<td>Odor</td>
<td>mild</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>9 - 10.5</td>
</tr>
<tr>
<td>Reserve Alkalinity</td>
<td>13 - 18 ml</td>
</tr>
<tr>
<td>Relative evaporation rate</td>
<td>Nil</td>
</tr>
<tr>
<td>Freezing point</td>
<td>-37 °C (-34 °F)</td>
</tr>
<tr>
<td>Boiling point</td>
<td>107 °C (225 °F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>116 °C (241 °F) [100% Ethylene Glycol]</td>
</tr>
<tr>
<td>Flash point</td>
<td>[ASTM D56]</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>400 °C (752 °F) [100% Ethylene Glycol]</td>
</tr>
<tr>
<td>Literature</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt; 0.1 mm Hg @ 20 °C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.08</td>
</tr>
<tr>
<td>Density</td>
<td>1.08 kg/l (9.046 lbs/gal)</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water: Complete</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
9.2. Other information

VOC content : 0 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Extremely high or low temperatures. Keep away from any flames or sparking source.

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products


SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>Oral LD₅₀ (mg/kg bodyweight)</th>
<th>Derma LD₅₀ (mg/kg)</th>
<th>Inhalation LC₅₀ (mg/l/4h)</th>
<th>ATE US (oral) (mg/kg bodyweight)</th>
<th>ATE US (dermal) (mg/kg bodyweight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>diethylene glycol (111-46-6)</td>
<td>19600</td>
<td>11890</td>
<td>&gt; 4.6</td>
<td>500</td>
<td>11890</td>
</tr>
<tr>
<td>ethylene glycol (107-21-1)</td>
<td>7712</td>
<td></td>
<td>&gt; 2.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Not classified

pH: 9 - 10.5

Serious eye damage/irritation : Not classified

pH: 9 - 10.5

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects : Causes damage to organs (kidneys) Oral.

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).
### SECTION 12: Ecological information

#### 12.1. Toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
<th>LC50 fish 2</th>
<th>EC50 Daphnia 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>diethylene glycol (111-46-6)</td>
<td>&gt; 5,000.00 ppm (24 h, Carassius auratus)</td>
<td>&gt; 10,000.00 mg/l (24 h, Daphnia magna)</td>
<td>75,200.00 mg/l (Other, 96 h, Pimephales promelas, Flow-through system, Experimental value)</td>
<td>&gt; 10,000.00 mg/l (DIN 38412-11, 24 h, Daphnia magna, Static system, Fresh water, Experimental value)</td>
</tr>
<tr>
<td>ethylene glycol (107-21-1)</td>
<td>40,761.00 mg/l (96 h, Salmo gairdneri, Static system)</td>
<td>&gt; 10,000.00 mg/l (24 h, Daphnia magna)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
<th>Biochemical oxygen demand (BOD)</th>
<th>Chemical oxygen demand (COD)</th>
<th>ThOD</th>
<th>BOD (% of ThOD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>diethylene glycol (111-46-6)</td>
<td>Biodegradable in the soil. Biodegradable in water.</td>
<td>0.02 g O₂/g substance</td>
<td>1.51 g O₂/g substance</td>
<td>1.51 g O₂/g substance</td>
<td>0.02</td>
</tr>
<tr>
<td>ethylene glycol (107-21-1)</td>
<td>Biodegradable in the soil. Readily biodegradable in water.</td>
<td>0.47 g O₂/g substance</td>
<td>1.24 g O₂/g substance</td>
<td>1.29 g O₂/g substance</td>
<td>0.36</td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>BCF fish 1</th>
<th>BCF other aquatic organisms 1</th>
<th>BCF other aquatic organisms 2</th>
<th>Log Pow</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>diethylene glycol (111-46-6)</td>
<td>100.00 (Other, 3 day(s), Leuciscus melanotus, Static system, Fresh water, Experimental value)</td>
<td>0.21 - 0.6 (Procambarus sp., Chronic)</td>
<td>190.00 (24 h, Algae)</td>
<td>-1.98 (Calculated, Other)</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>ethylene glycol (107-21-1)</td>
<td>10.00 (72 h, Leuciscus idus)</td>
<td>0.6 (Procambarus sp., Chronic)</td>
<td>190.00 (24 h, Algae)</td>
<td>-1.34 (Experimental value)</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Substance</th>
<th>Surface tension</th>
<th>Log Koc</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>diethylene glycol (111-46-6)</td>
<td>0.05 N/m</td>
<td>0.00 (log Koc, SRC PCKOCWIN v1.66, Calculated value)</td>
<td>Highly mobile in soil.</td>
</tr>
<tr>
<td>ethylene glycol (107-21-1)</td>
<td>48.00 mN/m (20 °C)</td>
<td></td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
</tbody>
</table>

#### 12.5. Other adverse effects

| Effect on the ozone layer | No known effect on the ozone layer |
| Effect on global warming  | No known ecological damage caused by this product. |
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to an approved waste disposal plant.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT

Non Bulk (in quantities under 5,000 lbs in any one inner package):
Not regulated by the US DOT

Bulk (in quantities 5,000 lbs or over in any one inner package):

- Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s. (Ethylene Glycol), 9, III
- UN-No. (DOT) : UN3082
- Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s. Ethylene Glycol
- Class (DOT) : 9 - Class 9 - Miscellaneous hazardous material
- Packing group (DOT) : III - Minor Danger
- Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)

- DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
- DOT Packaging Bulk (49 CFR 173.xxx) : 241
- DOT Symbols : G - Identifies PSN requiring a technical name
- DOT Packaging Exceptions (49 CFR 173.xxx) : 155
- DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : No limit
- DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No limit
- DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.
- Other information : No supplementary information available.

Transportation of Dangerous Goods
Refer to current TDG Canada for further Canadian regulations

Transport by sea
In accordance with IMDG / IMO
Not applicable

Air transport
In accordance with IATA / ICAO
Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

- Thermal Charge EGHD 50/50 Prediluted Heat Transfer Fluid
  - EPA TSCA Regulatory Flag
  - Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
diethylene glycol (111-46-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

ethylene glycol (107-21-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313
EPA TSCA Regulatory Flag: T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
CERCLA RO: 5000 lb(s)
SARA Section 311/312 Hazard Classes
Refer to Section 2 for the OSHA hazard classification
Ethylene glycol is subject to Tier I and/or Tier II annual inventory reporting.
SARA Section 313 - Emission Reporting
Ethylene glycol is subject to Form R Reporting requirements.

water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA
Thermal Charge EGHD 50/50 Prediluted Heat Transfer Fluid
WHMIS Classification
This SDS has been prepared according to the criteria of the Hazardous Products Regulations (HPR) (WHMIS 2015) and the SDS contains all of the information required by the HPR. Applicable GHS information is listed in section 2.2 of this SDS.

15.3. US State regulations

⚠️ WARNING: This product can expose you to ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

ethylene glycol (107-21-1)
No significant risk level (NSRL) | Maximum allowable dose level (MADL)
--- | ---
No | (ingested) 8,700 (oral) µg/day

diethylene glycol (111-46-6)
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

ethylene glycol (107-21-1)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information
Revision date: 09/12/2019

Full text of H-statements:

| H302 | Harmful if swallowed. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

NFPA health hazard: 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard: 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity: 0 - Material that in themselves are normally stable, even under fire conditions.
Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.