SECTION 1: IDENTIFICATION

Product name
Midwest Tungsten Service 704 Diffusion Pump Fluid

C.A.S. Number
3982-82-9

Company name of supplier
Midwest Tungsten Service

Telephone
(630) 325-1001

Recommended Use
Hydraulic fluids and additives

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification
Not a hazardous substance or mixture.

GHS Label element
Not a hazardous substance or mixture.

Other hazards
None known.
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical nature</td>
<td>Tetramethyltetraphenyl trisiloxane</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>3982-82-9</td>
</tr>
<tr>
<td>Chemical nature</td>
<td>Silicone Compound</td>
</tr>
<tr>
<td>Hazardous ingredients</td>
<td>No hazardous ingredients</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

If Inhaled: If inhaled, remove to fresh air. Get medical attention if symptoms occur.

In case of skin contact: Wash with water and soap as a precaution. Get medical attention if symptoms occur.

In case of eye contact: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.

If swallowed: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed: None known.
Protection of first aiders: No special precautions are necessary for first aid responders.

Notes to physician: Treat symptomatically and supportively.

SECTION 5: FIRE-FIGHTING MEASURES

| Suitable extinguishing media: | Water spray  
|                              | Alcohol-resistant foam  
|                              | Carbon dioxide (CO2)  
|                              | Dry chemical  
| Unsuitable extinguishing media: | None known.  
| Specific hazards during fire fighting: | Fire burns more vigorously than would be expected.  
|                                      | Exposure to combustion products may be a hazard to health.  
| Hazardous combustion products: | Carbon oxides  
|                              | Silicon oxides  
|                              | Formaldehyde  
| Specific extinguishing methods: | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
|                                  | Use water spray to cool unopened containers.  
|                                  | Remove undamaged containers from fire area if it is safe to do so. Evacuate area.  
| Protective equipment for fire-fighters: | Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.  

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mts@tungsten.com
### SECTION 6: ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th>Personal precautions, protective equipment and emergency procedures</th>
<th>Remove all sources of ignition. Follow safe handling advice and personal protective equipment recommendations.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental precautions</strong></td>
<td>Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.</td>
</tr>
<tr>
<td><strong>Methods and materials for containment and cleaning up</strong></td>
<td>Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.</td>
</tr>
<tr>
<td></td>
<td>Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.</td>
</tr>
</tbody>
</table>
SECTION 7: HANDLING & STORAGE

Technical measures  See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation  Use only with adequate ventilation.

Advice on safe handling  Handle in accordance with good industrial hygiene and safety practice. Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage  Keep in properly labeled containers. Store in accordance with the particular national regulations.

Materials to avoid  Do not store with the following product types. Strong oxidizing agents.

SECTION 8: EXPOSURE CONTROLS & PERSONAL PROTECTION

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

Engineering measures  Processing may form hazardous compounds (see section 10).
Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.
Personal protective equipment

Respiratory protection

No personal respiratory protective equipment normally required.

Hand protection

Wash hands before breaks and at the end of workday.

Eye protection

Wear the following personal protective equipment safety glasses.

Skin and body protection

Skin should be washed after contact.

Hygiene measures

Ensure that eye flushing systems and safety showers are located close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before reuse.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.
For further information regarding the use of silicones / organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these type of materials in consumer aerosol applications that has been developed by the silicone industry (www.SEHSC.com).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid
Color: Colorless to pale yellow
Odor: none
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>&gt; 300 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 101.1 °C Method closed cup</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.065</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td></td>
</tr>
<tr>
<td>noctanol/water</td>
<td>No data available</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>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>38.0 cSt</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Explosive properties</th>
<th>Not explosive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidizing properties</td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**SECTION 10: STABILITY AND REACTIVITY**

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>Not classified as a reactivity hazard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under normal conditions.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Use at elevated temperatures may form highly hazardous compounds. Can react with strong oxidizing agents. Hazardous decomposition products will be formed at elevated temperatures.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>None known.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Oxidizing agents</td>
</tr>
<tr>
<td>Hazardous decomposition products Thermal decomposition</td>
<td>Formaldehyde</td>
</tr>
</tbody>
</table>
SECTION 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

- Inhalation
- Skin contact
- Ingestion
- Eye contact

Acute toxicity - Data
Not classified based on available information.

Product:

Acute oral toxicity
LD50 > 2,000 mg/kg
Assessment. The substance or mixture has no acute oral toxicity
Remarks. Based on test data

Acute dermal toxicity
LD50 > 2,000 mg/kg
Assessment. The substance or mixture has no acute dermal toxicity
Remarks. Based on test data

Skin corrosion/irritation
Not classified based on available information.

Product:

Result No skin irritation
Remarks Based on test data

Serious eye damage/eye irritation
Not classified based on available information.
Product:

Result No eye irritation
Remarks Based on test data

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

Product:

Assessment Does not cause skin sensitization.
Test Type Maximization Test (GPMT)
Remarks Based on test data
Germ cell mutagenicity
Not classified based on available information.

Product:

Genotoxicity in vitro
Test Type. Bacterial reverse mutation assay (AMES)
Result. Negative
Remarks. Based on test data

Carcinogenicity
Not classified based on available information.

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 ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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.

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Product:

Routes of exposure Ingestion
Assessment. No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Repeated dose toxicity

Product:

Application Route Ingestion
Remarks Based on test data

Aspiration toxicity
Not classified based on available information.
SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Product:
Toxicity to fish

LC50 (Cyprinus carpio (Carp)) $> 1,000$ mg/l
Exposure time 96 h

LC50 (Salmo gairdneri) $> 1,000$ mg/l
Exposure time 96 h

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects
No data available

SECTION 13: DISPOSAL CONSIDERATION

Disposal methods
Resource Conservation and Recovery Act (RCRA)
When a decision is made to discard this material as supplied, it is classified as a RCRA hazardous waste.

Waste Code
D018

Waste from residues
Dispose of in accordance with local regulations.

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Contaminated packaging

Dispose of as unused product.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: TRANSPORT INFORMATION

International Regulation

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

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

49 CFR
Not regulated as a dangerous good
SECTION 15: REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA  Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>10</td>
<td>*</td>
</tr>
</tbody>
</table>

* Calculated RQ exceeds reasonably attainable upper limit.

SARA 304  Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards  No SARA Hazards

SARA 302  No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313  This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

Tetramethyltetraphenyl trisiloxane  3982-82-9  90 - 100 %
New Jersey Right To Know

Tetramethyltetraphenyl trisiloxane  3982-82-9  90 - 100 %
Tetraphenyldimethyldisiloxane  807-28-3  1 - 5 %

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.
Benzene  71-43-2

WARNING This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.
Benzene  71-43-2

The ingredients of this product are reported in the following inventories:

NZIoC  All ingredients listed or exempt.
REACH  All ingredients (pre-) registered or exempt.
TSCA  All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
PICCS  All ingredients listed or exempt.
KECI  All ingredients listed, exempt or notified.
ENCS/ISHL  All components are listed on ENCS/ISHL or exempted from inventory listing.
IECSC  All ingredients listed or exempt.
AICS  All ingredients listed or exempt.
**DSL**  All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).

**TCSI**  All ingredients listed or exempt.

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**Inventories**

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECl (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

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**SECTION 16: OTHER INFORMATION**

Further information

**NFPA:**

**HMIS III:**

![Safety Data Sheet Diagram]

**Sources of key data used to compile the Material Safety Data Sheet**

Revision Date: 01/04/2016

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

US / Z8