SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : ZEP GROOVY-PASTE DZ
Material number : 00000000068701

Manufacturer or supplier’s details
Company : Zep Inc.
Address : 350 Joe Frank Harris Parkway, SE
Emerson, GA 30137
Telephone : 404-352-1680

Emergency telephone numbers
For SDS Information : Compliance Services 1-877-428-9937
For a Medical Emergency : 877-541-2016 Toll Free - All Calls Recorded

Recommended use of the chemical and restrictions on use
Recommended use : Lubricant

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

<table>
<thead>
<tr>
<th>Appearance</th>
<th>viscous liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
</tbody>
</table>

GHS Classification
Carcinogenicity : Category 2

GHS label elements
Hazard pictograms : 
Signal word : Warning
Hazard statements : H351 Suspected of causing cancer.
Precautionary statements : 
Prevention: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response: P308 + P313 IF exposed or concerned: Get medical advice/
Disposal: P501 Dispose of contents/container in accordance with local regulation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper</td>
<td>7440-50-8</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td>aluminium</td>
<td>7429-90-5</td>
<td>&gt;= 1 - &lt; 3</td>
</tr>
<tr>
<td>graphite</td>
<td>7782-42-5</td>
<td>&gt;= 1 - &lt; 3</td>
</tr>
<tr>
<td>quartz (SiO2)</td>
<td>14808-60-7</td>
<td>&gt;= 0.1 - &lt; 1</td>
</tr>
<tr>
<td>Stoddard solvent</td>
<td>8052-41-3</td>
<td>&gt;= 0.1 - &lt; 1</td>
</tr>
</tbody>
</table>

The exact percentages of disclosed substances are withheld as trade secrets.

SECTION 4. FIRST AID MEASURES

General advice : Do not leave the victim unattended. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. Get medical attention.

If inhaled : If symptoms persist, call a physician. Move to fresh air.

In case of skin contact : Wash off with soap and plenty of water. Wash contaminated clothing before reuse. Remove contaminated clothing and shoes. If skin irritation persists, call a physician.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. DO NOT induce vomiting unless directed to do so by a physician or poison control center.

Most important symptoms and effects, both acute and delayed : Chronic effects are delayed and symptoms may not be observed during an exposure. Effects are dependent on exposure (dose, concentration, contact time). Effects are immediate and delayed.
Symptoms may differ depending on organs and systems affected. These effects generally are reflected in reduced function or change, which may include cramping, swelling, respiratory issues, and general pain. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. Review section 2 of SDS to see all potential hazards.

Notes to physician: Treat symptomatically. Symptoms may be delayed.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media: Alcohol-resistant foam
Dry powder
Dry sand
Carbon dioxide (CO2)

Unsuitable extinguishing media: High volume water jet

Specific hazards during firefighting: Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: Carbon dioxide (CO2)
Carbon monoxide
Smoke

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Standard procedure for chemical fires.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep people away from and upwind of spill/leak. Use personal protective equipment. Ensure adequate ventilation. Refer to protective measures listed in sections 7 and 8.

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling: Do not breathe vapours or spray mist. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage: Electrical installations / working materials must comply with the technological safety standards. Keep containers tightly closed in a dry, cool and well-ventilated place. Observe label precautions.

Materials to avoid: Oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</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>copper</td>
<td>7440-50-8</td>
<td>TWA (dusts and mists)</td>
<td>1 mg/m3</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Fumes)</td>
<td>0.1 mg/m3</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Dust and mist)</td>
<td>1 mg/m3</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Fumes)</td>
<td>0.2 mg/m3</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Dust)</td>
<td>1 mg/m3</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Mist)</td>
<td>1 mg/m3</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (dusts and mists)</td>
<td>1 mg/m3</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Fumes)</td>
<td>0.1 mg/m3</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL (Fumes)</td>
<td>0.1 mg/m3</td>
<td>CAL PEL</td>
</tr>
<tr>
<td>aluminium</td>
<td>7429-90-5</td>
<td>TWA (Respirable)</td>
<td>5 mg/m3</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (total)</td>
<td>10 mg/m3</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (total dust)</td>
<td>15 mg/m3</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (respirable fraction)</td>
<td>5 mg/m3</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Total)</td>
<td>15 mg/m3</td>
<td>OSHA P0</td>
</tr>
</tbody>
</table>
## Engineering measures
- effective ventilation in all processing areas

## Personal protective equipment
### Respiratory protection
- Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

### Hand protection
- Material: Protective gloves
- Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

### Eye protection
- Safety glasses
- Ensure that eyewash stations and safety showers are close to the workstation location.

### Skin and body protection
- Impervious clothing
- Choose body protection according to the amount and concentration of the dangerous substance at the work place.

### Hygiene measures
- When using do not eat or drink.
- When using do not smoke.

### Table: Exposure limits
<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>TWA (total dust)</th>
<th>TWA (respirable dust)</th>
<th>TWA (Respirable fraction)</th>
<th>PEL (Respirable dust)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>graphite</td>
<td>7782-42-5</td>
<td>2.5 mg/m³</td>
<td>1 mg/m³</td>
<td></td>
<td>0.05 mg/m³</td>
<td></td>
</tr>
<tr>
<td>quartz (SiO2)</td>
<td>14808-60-7</td>
<td>30 mg/m³ / %SiO2+2</td>
<td>0.05 mg/m³</td>
<td></td>
<td>0.05 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Stoddard solvent</td>
<td>8052-41-3</td>
<td>100 ppm</td>
<td></td>
<td></td>
<td>0.05 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

- TWA: Time-Weighted Average
- PEL: Permissible Exposure Level
- OSHA: Occupational Safety and Health Administration
- ACGIH: American Conference of Governmental Industrial Hygienists
- NIOSH: National Institute for Occupational Safety and Health
- CAL PEL: California Permissible Exposure Limit
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Viscous liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
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</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</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>Vapour pressure</td>
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</tr>
<tr>
<td>Relative vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
</tbody>
</table>

SECTION 10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>Stable</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>Stable under normal conditions.</td>
</tr>
</tbody>
</table>
Possibility of hazardous reactions: No decomposition if stored and applied as directed.
Conditions to avoid: Extremes of temperature and direct sunlight.
Incompatible materials: Oxidizing agents
Hazardous decomposition products: Carbon dioxide (CO2)
                     Carbon monoxide
                     Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Aggravated Medical Condition: None known.
Symptoms of Overexposure: Chronic effects are delayed and symptoms may not be observed during an exposure. Effects are dependent on exposure (dose, concentration, contact time). Effects are immediate and delayed. Symptoms may differ depending on organs and systems affected. These effects generally are reflected in reduced function or change, which may include cramping, swelling, respiratory issues, and general pain.

Carcinogenicity:
IARC: Group 1: Carcinogenic to humans
       quartz (SiO2) 14808-60-7
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
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 component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Acute toxicity
Product:
Acute dermal toxicity: Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Components:
copper:
Acute oral toxicity: LD50 Rat: 300 - 500 mg/kg
SAFETY DATA SHEET

ZEP GROOVY-PASTE DZ

Version 5.0  Revision Date 01/08/2019  Print Date 04/02/2019

Acute dermal toxicity: LD50 Rat: > 2,000 mg/kg

aluminium:
Acute oral toxicity: LD50 Rat: > 15,900 mg/kg

Acute inhalation toxicity: LC50 Rat: > 0.888 mg/l
Exposure time: 4 h

Skin corrosion/irritation

Product:
Remarks: May irritate skin.

Serious eye damage/eye irritation

Product:
Remarks: May irritate eyes.

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

STOT - single exposure
No data available

STOT - repeated exposure

Product:
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Remarks: Third Party Data - Actual or Inferred

Aspiration toxicity
No data available

Further information

Product:
Remarks: No data available
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

**Product:**
Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Persistence and degradability
No data available

Bioaccumulative potential

**Product:**
Partition coefficient: n-octanol/water

Remarks: No data available

Mobility in soil
No data available

Other adverse effects
No data available

**Product:**

Regulation 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with local regulations.
Do not contaminate ponds, waterways or ditches with chemical or used container.
The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging : Do not re-use empty containers.
Empty remaining contents.
Dispose of as unused product.
SECTION 14. TRANSPORT INFORMATION

Transportation Regulation: 49 CFR (USA):
NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

Transportation Regulation: IMDG (Vessel):
NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

Transportation Regulation: IATA (Cargo Air):
NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

Transportation Regulation: IATA (Passenger Air):
NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

Transportation Regulation: TDG (Canada):
NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

The product as delivered to the customer conforms to packaging requirements for shipment by road under US Department of Transportation (DOT) regulations. Additional transportation classifications noted above are for reference only, and not a certification or warranty of the suitability of the packaging for shipment under these alternative transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper</td>
<td>7440-50-8</td>
<td>5000</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 : Carcinogenicity
SAFETY DATA SHEET

ZEP GROOVY-PASTE DZ

Version 5.0  Revision Date 01/08/2019  Print Date 04/02/2019

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

SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:
copper 7440-50-8 40%

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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

DSL: All components of this product are on the Canadian DSL
TSCA: On TSCA Inventory

For information on the country notification status for other regions please contact the manufacturer’s regulatory group.

Inventory Acronym and Validity Area Legend:
TSCA (USA), DSL (Canada), NDSL (Canada)

SECTION 16. OTHER INFORMATION

Further information

NFPA:

HMIS III:

Health  FLAMMABILITY  PHYSICAL HAZARD
1  1  0

Flammability Instability

Special hazard.

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

OSHA - GHS Label Information:

Hazard pictograms
Signal word: Warning:
Hazard statements: Suspected of causing cancer.
Precautionary statements:
Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response: IF exposed or concerned: Get medical advice/ attention.
Disposal: Dispose of contents/container in accordance with local regulation.