Material Safety Data Sheet

Date: Jul. 24. 2014

1. Product Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Water Pigment Ink (TWP-W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>VISCOSMO Co.</td>
</tr>
<tr>
<td>Address</td>
<td>4F, #1589-6, Chungyongdong, Kwanakgu, Seoul, - KOREA</td>
</tr>
<tr>
<td></td>
<td>Phone : +82 2 875 1770</td>
</tr>
</tbody>
</table>

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigment</td>
<td>-</td>
<td>30-40%</td>
</tr>
<tr>
<td>Diethylene glycol</td>
<td>111-46-6</td>
<td>10-15%</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>107-21-1</td>
<td>15-25%</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>10-20%</td>
</tr>
</tbody>
</table>

3. Hazards Identification

3.1 Emergency Overview

Harmful if swallowed, inhaled or absorbed through skin.
Causes irritation to eyes and respiratory tract.

Health Rating : 1
Reactivity Rating : 0
Flammability : 0
Remaining components unknown, or <1%

3.2 Potential Health Effects

Inhalation:
Inhalation of vapors may cause irritation, headache, dizziness, fatigue, nausea, vomiting, and loss of appetite. Weakness, incoordination and tremors may occur.

Ingestion:
Swallowing may cause nausea, vomiting, abdominal pain, breathing difficulties, weakness. Liver and kidney damage may result from swallowing large quantities of the material.

Skin Contact:
May be absorbed through the skin with possible systemic effects.

Eye Contact:
May cause irritation, redness and pain.

4. First Aid Measures

Inhalation:
Not applicable.

Ingestion:
Induce vomiting immediately as directed by medical personnel.

Skin Contact:
Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Eye Contact:
Flush eyes thoroughly with water, seek medical attention of irritation persist.
5. Fire-Fighting Measures

**Extinguishing Media :**
- Water fog or fine spray. Carbon dioxide. Dry chemical fire extinguishers.
- Foam. Alcohol resistant foams are preferred. General purpose synthetic foams or protein foams may function, but will be less effective.

**Special procedures :**
- Wear self-contained breathing apparatus and protective clothing

**Unusual Fire and Explosion Hazards :**
- None Known.

6. Accidental Release Measures

**Personal Precautions :**
- Respiratory protection, hand protection

**Environmental Precautions :**
- Do not let product enter drains.

7. Handling and Storage

**Handling :**
- Wash thoroughly after handling.
- Avoid contact with eyes, skin, and clothing. Keep container tightly closed.

**Storage :**
- Store in a tightly closed container.
- Keep container closed.

8. Exposure Controls/Personal Protection

**Exposure Guidelines :**
- A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

**Engineering Controls :**
- Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**Personal Protective Equipment :**
- Respiratory Protection : For Most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. In misty atmospheres, use an approved particulate respirator. For emergency conditions, use and approved positive-pressure self-contained breathing apparatus.
Protective Clothing: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron, or full body-suit will depend on operation. Remove contaminated clothing immediately, wash shin area with soap and water, and launder clothing before reuse or dispose of properly.

Hand/Skin Protection: Wear gloves made butyl rubber, Neoprene.

Eye/Face Protection: Use safety glasses. If exposure causes eye discomfort, use a full-face respirator.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/Odor</td>
<td>Colored liquid, Fruity odor</td>
</tr>
<tr>
<td>Boiling Point, °C</td>
<td>115 °C</td>
</tr>
<tr>
<td>Melting Point, °C</td>
<td>-10 °C</td>
</tr>
<tr>
<td>Flash Point, °C</td>
<td>non</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td></td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Complete</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.0</td>
</tr>
<tr>
<td>Vapor Pressure mmHg</td>
<td>0.001 mmHg</td>
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<tr>
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<td>0.001 mmHg</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>&lt; Butyl Acetate</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.

Conditions to Avoid: Flammable vapors can be released at ambient temperatures.

Materials to Avoid: Avoid contact with metals such as Zinc, Magnesium, Aluminum, Avoid contact with oxidizing materials

11. Toxicological Information

Toxicological Data: Not data available

Irritation:
- Skin: Prolonged contact is essentially nonirritating to skin.
- Eyes: May cause slight eye irritation. Effects may include: Discomfort. Redness.

Inhalation: Excessive exposure may cause irritation to upper respiratory tract

12. Ecological Information

Environmental Fate:
When released into the soil, this material may evaporate to a moderate extent, may leach into groundwater, may biodegrade to a moderate extent. This material is harmful to aquatic organisms.

13. Disposal Considerations

Any disposal practice must be in compliance with all local and national laws and regulations.

Disposal:
- Incinerate under controlled conditions in accordance with all local and national laws and regulations.

Contaminated Packaging:
- Empty containers can only be disposed of when the remaining product adhering to the container walls has been removed. Remove all labels.
14. Transport Information

Any transportation's practice must be in compliance with local, state or federal laws and regulations.
Not classified as hazardous under transport regulations

15. Regulatory Information

R-Codes

22 Harmful by inhalation and in contact with skin and if swallowed.

S-Codes

46 If swallowed, seek medical advice immediately and show this container of label.

16. Other Information

The information herein is given in good faith, but no warranty express or implied, is made.
Recipients of our product must take responsibility for observing existing laws and regulations.