

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

- 1.1 Product identifier: Touch Refill ink
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:  
Relevant identified uses: Pen ink for Marker.  
Uses advised against: No data available.
- 1.3 Details of the supplier of the safety data sheet:  
Company name : SHINHANART MATERIALS INC.  
Address : 154 Bulgwang-ro, Eunpyeong-gu, Seoul, Korea  
Email : info@shinhanart.com
- 1.4 Emergency telephone number:  
- Tel : +82 02-357-2651 - Fax : +82 02-357-7481

**SECTION 2: Hazards identification**

- 2.1 Classification of the substance or mixture:
  - 2.1.1 Classification according to Directive 1999/45/EC:  
F, R11
  - 2.1.2 Classification according to Regulation (EC) No 1272/2008:  
Flam. Liq. 2, H225
- 2.2 Label elements:  
Labeling according to Regulation (EC) No 1272/2008:  
Pictograms:



Signal word: Danger

Hazard statements:

H225 Highly flammable liquid and vapour.

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P303+P361+P353 IF ON SKIN (or hair): Remove/ take off immediately all contaminated clothing.

Rinse skin with water/ shower.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container to in accordance with local/ regional/ national/ international regulations.

- 2.3 Other hazards: May be ignited by heat, sparks or flames.

**SECTION 3: Composition/information on ingredients**

- 3.1 Substances: Not relevant.
- 3.2 Mixtures: The mixture contains these substances:

| Substance name       | EC/CAS No.            | Registr. No. | Classification  |  |  |                                | Conc. (%) |
|----------------------|-----------------------|--------------|---|--|--|--------------------------------|-----------|
|                      |                       |              | 67/548/EEC  | CLP  |  |                                |           |
|                      |                       |              |   | Hazard Class and Category Code(s)  | Hazard statement                             | Pictogram/ Signal word         |           |
| ethyl alcohol        | 200-578-6/<br>64-17-5 | -            | F; R11  | Flam. Liq. 2   | H225   | GHS02<br>Dgr                   | 60-80     |
| formaldehyde<br>...% | 200-001-8/<br>50-00-0 | -            | Carc. Cat. 3;<br>R40<br>T; R23/24/25<br>C; R34<br>R43 | Carc. 2<br>Acute Tox. 3 *<br>Acute Tox. 3 *<br>Acute Tox. 3 *<br>Skin Corr. 1B<br>Skin Sens. 1 | H351<br>H331<br>H311<br>H301<br>H314<br>H317 | GHS06<br>GHS08<br>GHS05<br>Dgr | <0.1      |
| Dye                  | -                     |              | Not classified  | Not classified   |  |                                | 10~20     |

**SECTION 4: First aid measures**

- 4.1** Description of first aid measures:  
Following inhalation: Move to fresh air. Call a physician if symptoms develop or persist.  
Following skin contact: Remove/ take off immediately all contaminated clothing. Rinse skin with water/ shower. Get medical attention if irritation develops and persists.  
Following eye contact: Rinse with water. Get medical attention if irritation develops and persists.  
Following ingestion: Rinse mouth. Get medical attention if symptoms occur.
- 4.2** Most important symptoms and effects, both acute and delayed: Direct contact with eyes or skin may cause temporary irritation.
- 4.3** Indication of any immediate medical attention and special treatment needed: Provide general supportive measures and treat symptomatically. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

**SECTION 5: Firefighting measures**

- 5.1** Extinguishing media:  
Suitable extinguishing media: Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).  
Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.
- 5.2** Special hazards arising from the substance or mixture: By heating and fire, harmful vapors/gases may be formed.
- 5.3** Advice for firefighters: Move containers from fire area if you can do so without risk. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

**SECTION 6: Accidental release measures**

- 6.1** Personal precautions, protective equipment and emergency procedures:  
For non-emergency personnel: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate personal protective equipment. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.  
For emergency responders: No data available.
- 6.2** Environmental precautions: Avoid discharge into drains, water courses or onto the ground.
- 6.3** Methods and material for containment and cleaning up: Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. For waste disposal, see section 13 of the MSDS.
- 6.4** Reference to other sections: See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

**SECTION 7: Handling and storage**

- 7.1** Precautions for safe handling: No specific recommendations for technical measures. Keep away from open flames, hot surfaces and sources of ignition. When using do not smoke. Use personal protection recommended in Section 8 of the MSDS. For further information on contact avoidance measures, please refer to section 10 of the MSDS
- 7.2** Conditions for safe storage, including any incompatibilities: Keep away from heat, sparks and open flame. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the MSDS). Safe packaging materials: Keep in original container.
- 7.3** Specific end use(s): No data available.

**SECTION 8: Exposure controls/personal protection**

- 8.1** Control parameters: Community workplace exposure limits were not established for substances contained in the mixture.
- 8.2** Exposure controls:
- 8.2.1** Appropriate engineering controls: 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.
- 8.2.2** Individual protection measures, such as personal protective equipment:
- 8.2.2.1** Eye/face protection: Wear eye/face protection.
- 8.2.2.2** Skin protection:  
 Hand protection: Wear protective gloves.  
 Other: Wear suitable protective clothing.
- 8.2.2.3** Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment.
- 8.2.2.4** Thermal hazards: No data available.
- 8.2.3** Environmental exposure controls: Avoid discharge into drains, water courses or onto the ground.

**SECTION 9: Physical and chemical properties**

**9.1** Information on basic physical and chemical properties:

|   |                   |
|---|-------------------|
| Appearance:                                   | liquid            |
| Odour:  | no data available |
| Odour threshold:                              | no data available |
| pH:   | no data available |
| Melting point/freezing point:                 | no data available |
| Initial boiling point and boiling range:      | >95°F (>35°C)     |
| Flash point:                                  | 19.5°C            |
| Autoignition point:                           | 400°C             |
| Evaporation rate:                             | no data available |
| Flammability (solid, gas):                    | flammable         |
| Upper/lower flammability or explosive limits: | no data available |
| Vapour pressure:                              | no data available |
| Vapour density:                               | no data available |
| Relative density:                             | no data available |
| Solubility(ies):                              | no data available |
| Partition coefficient: n-octanol/water:       | no data available |
| Decomposition temperature:                    | no data available |
| Viscosity:                                    | no data available |
| Explosive properties:                         | no data available |
| Oxidising properties:                         | no data available |

**9.2** Other information: No data available.

**SECTION 10: Stability and reactivity**

- 10.1** Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.
- 10.2** Chemical stability: Material is stable under normal conditions.
- 10.3** Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
- 10.4** Conditions to avoid: Heat, flames and sparks. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
- 10.5** Incompatible materials: Strong oxidizing agents.
- 10.6** Hazardous decomposition products: No hazardous decomposition products are known.

**SECTION 11: Toxicological information**

- 11.1** Information on toxicological effects:  
 Substances:  
 No data available.  
 Mixtures:

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

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met. This product is not expected to cause skin sensitization.

Germ cell mutagenicity: Based on available data, the classification criteria are not met. No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

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

Reproductive toxicity: Based on available data, the classification criteria are not met. This product is not expected to cause reproductive or developmental effects.

STOT-single exposure: Based on available data, the classification criteria are not met.

STOT-repeated exposure: Based on available data, the classification criteria are not met.

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

Other information: Prolonged skin contact may cause temporary irritation. Direct contact with eyes may cause temporary irritation.

## SECTION 12: Ecological information

- 12.1** Toxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
- 12.2** Persistence and degradability: No data is available on the degradability of this product.
- 12.3** Bioaccumulative potential: No data available.
- 12.4** Mobility in soil: No data available.
- 12.5** Results of PBT and vPvB assessment: No data available.
- 12.6** Other adverse effects: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: Disposal considerations

- 13.1** Waste treatment methods: Dispose in accordance with all applicable regulations.

Residual waste: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Local disposal regulations: Contract with a disposal operator licensed by the Law on Disposal and Cleaning. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

## SECTION 14: Transport information

- 14.1** UN number: Not applicable. Not regulated as dangerous goods.
- 14.2** UN proper shipping name: Not applicable.
- 14.3** Transport hazard class(es): Not applicable.
- 14.4** Packing group: Not applicable.
- 14.5** Environmental hazards: Not applicable.
- 14.6** Special precautions for user: Not applicable.
- 14.7** Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

**SECTION 15: Regulatory information**

**15.1** Safety, health and environmental regulations/legislation specific for the substance or mixture:  
The substances in the mixture are not subject to authorisation under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations;

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

Industrial Safety and Health Act

Notifiable substances: Not regulated.

Labeling substances: Not regulated.

Poisonous and Deleterious Substances Control Act

Specified poisonous substances: Not regulated.

Poisonous substances: Not regulated.

Deleterious substances: Not regulated.

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

Class I specified chemical substances: Not regulated.

Class II specified chemical substances: Not regulated.

Monitoring chemical substances: Not regulated.

Priority Assessment Chemical Substances (PACs): Not regulated.

Reporting Exempted Substances: Not regulated.

Law concerning Pollutant Release and Transfer Register

Specified class 1 substances (substance name, ordinance number and content): Not regulated.

Class 1 substances (substance name, ordinance number and content): Not regulated.

Class 2 substances (substance name, ordinance number and content): Not regulated.

Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule: Not regulated.

Air Law, Enforcement Rule: Not regulated.

Explosives Control Act: Not regulated.

**15.2** Chemical safety assessment: Chemical safety assessment is not available.

**SECTION 16: OTHER INFORMATION**

**16.1** List of relevant risk phrases and hazard statements:

R11 Highly flammable. R23/24/25 Toxic by inhalation, in contact with skin and if swallowed. R34 Causes burns. R40 Limited evidence of a carcinogenic effect. R43 May cause sensitisation by skin contact.

H225 Highly flammable liquid and vapour. H301 Toxic if swallowed. H311 Toxic in contact with skin. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H331 Toxic if inhaled. H351 Suspected of causing cancer.

- 16.2** Instructions for the training: Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.
- 16.3** Recommended restrictions on use (i.e. non-statutory recommendations by supplier): Mixture should not be used for any other purpose than for which is appointed (point 1.2). Because of the fact that specific conditions of use of mixture are out of supplier's control, it is responsibility of the user to adjust the prescribed warnings to local laws and regulations. Safety information describes the product in terms of safety and it cannot be considered as technical information about product.
- 16.4** Sources of key data used to compile the Safety Data Sheet: SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.
- 16.5** Sources of key data used to compile the Safety Data Sheet: SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.
- 16.6** Purpose of SDS: Purpose of this SDS is to provide relevant information for users of product to ensure proper handling and control of risks/hazards.