Material Safety Data Sheet # 203.3 A
For Printing Inks and related Materials

Date of preparation: 6/2/05
Updated: 5/9/2012
MSDS #: 203.3 A

I. PRODUCT IDENTIFICATION

Manufacturer: Gans Ink and Supply Co, Inc.
Address: 1441 Boyd Street
Los Angeles, CA 90033
Emergency phone: (323) 264-2200

HMIS HAZARD IDENTIFICATION

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>B</td>
</tr>
</tbody>
</table>

Product Class: Lithographic UV Printing Ink

Manufacturer’s code: UV11348, UV11348X, UV11904, UV14391, etc.

Trade Name: Rapicure MICR Dense Black

II. HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS #</th>
<th>%</th>
<th>Exposure Limits</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipentaerythritol hexaacrylate</td>
<td>29570-58-9</td>
<td>3.0</td>
<td>Not Established</td>
<td></td>
</tr>
<tr>
<td>poly acrylate</td>
<td>Proprietary</td>
<td>27.0</td>
<td>Not Established</td>
<td></td>
</tr>
<tr>
<td>glycerol propoxylated, esters w/ acrylic acid</td>
<td>52408-84-1</td>
<td>6.0</td>
<td>Not Established Xi; R 36</td>
<td></td>
</tr>
<tr>
<td>methyl-1(4-methylthiophenyl)-2-mopholinopropan-1-one</td>
<td>71868-10-5</td>
<td>4.80</td>
<td>Not Established</td>
<td></td>
</tr>
<tr>
<td>2,2-dimethoxy-1,2-diphenylethano-1-one</td>
<td>24650-42-8</td>
<td>3.2</td>
<td>Not Established</td>
<td></td>
</tr>
</tbody>
</table>

III. HEALTH HAZARD INFORMATION

Effects of Overexposure

Inhalation: Inhalation of mist or vapor may cause irritation or respiratory tract. Acute overexposure may result in irritation of the throat and lungs.

Skin Contact: Avoid skin contact. Contains materials that may cause moderate skin irritation. Prolonged contact may cause blister formations (burns). Since irritation may not occur immediately, contact can go unnoticed. Prolonged or repeated contact may result in contact dermatitis which is characterized by dryness, chapping, and reddening. This condition may make the skin more susceptible to other irritants, sensitizers, and disease. Pre-existing skin conditions may make the skin more susceptible and facilitate uptake by this route.

Eye Contact: Avoid eye contact. Moderate irritant. Can cause burning sensation, tearing, swelling, and redness. Injury may persist for several days.

Ingestion: Do not ingest. May be harmful. May irritate the mouth, throat, and gastrointestinal tract. See Notes to Physician section below.
IV. FIRST AID PROCEDURES

**Emergency & First Aid Procedures**

**Eyes:** Immediately flush eyes with large amounts of water and continue flushing for 15 minutes until irritation subsides. If irritation persists, seek medical attention.

**Skin:** Remove contaminated clothing. Wash contaminated area thoroughly with soap and water. If redness or irritation occurs, seek medical attention. Launder contaminated clothing before reuse.

**Inhalation:** If mist or exposure is generated when the material is heated or handled, remove victim from exposure. If breathing has stopped or is irregular, administer artificial respiration and supply oxygen if it is available. If victim is unconscious, remove to fresh air and seek medical attention.

**Ingestion:** Do not induce vomiting. Seek immediate medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician:** Aspiration may lead to chemical pneumonitis which is characterized by pulmonary edema and hemorrhage, and may be fatal. Signs of lung involvement include increased respiration rate, increased heart rate, and a bluish discoloration of the skin. Coughing, choking, and gagging are often noted at the time of aspiration. Gastrointestinal discomfort may develop, followed by vomiting, with risk of aspiration.

V. FIRE AND EXPLOSION DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point °F</td>
<td>&gt; 212 °F</td>
</tr>
<tr>
<td>Auto-ignition Temperature °F</td>
<td>No Data</td>
</tr>
</tbody>
</table>

**Flammable Limits in Air (% Volume)**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Limit:</td>
<td>No Data</td>
</tr>
<tr>
<td>Upper Limit:</td>
<td>No Data</td>
</tr>
</tbody>
</table>

**Extinguishing Media:** Use water fog, foam, CO₂, or dry chemical extinguishing media.

**Special Fire Fighting Procedures:** Remove all ignition sources. Wear self-contained breathing apparatus and complete personal protective equipment when entering confined areas. Closed containers may explode when exposed to extreme heat. Closed containers may be cooled with a fine water spray. Do Not use a solid water stream as it scatter and spread the fire.

**Unusual Fire & Explosion Hazard:** High temperatures and fire conditions may cause rapid and uncontrollable polymerization which can result in explosions and the violent rupture of storage vessels. Dense smoke may be generated while burning; carbon dioxide, carbon monoxide, and nitrogen oxides may be generated as products of combustion.

VI. ACCIDENTAL RELEASE

**Steps to be taken in event of spill or release:** Wear protective gloves and apron. Remove all ignition sources, as spilled material may polymerize. Move leaking containers to ventilated area. Stop discharge, if it can be performed safely, and contain material. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust, vermiculite). Place in a suitable container for disposal. DO Not allow to enter waterways, drains, sewers or lakes. Dispose of in accordance with state, local and Federal regulations.

VII. HANDLING AND STORAGE

**Handling and Storage:** Store in containers in a dry, cool and well-ventilated area. Store at temperatures between 40 °F – 104 °F (4 °C – 40 °C) Avoid exposure to ultraviolet light and/or sunlight. Avoid temperatures higher than (60 °C) 140 °F. Keep away from all ignition sources, open flame etc. Avoid incompatible materials, such as alkalis, strong acids and chlorinated hydrocarbons. Avoid contact with skin, contact with eyes, and breathing of mist or vapor. Wear protective chemical resistant gloves when handling. Consumption of food and beverages should be avoided in work areas. Always wash hands and face with soap and water before eating, drinking, and smoking.

**Other Precautions:** For industrial use only. Do not ingest. Avoid prolonged contact with skin, contact with eyes, and breathing of mist or vapor.

VIII. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Ventilation Requirements:** If vapor or mist is generated when the material is heated or handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specific exposure or flammable limits.
**Personal Protective Equipment**

**Respirator:** Respiratory protection is not required under conditions of normal use. If vapor or mist is generated when the material is heated or handled, use an organic vapor respirator with a dust and mist filter. All respirators must be NIOSH certified. Do not use compressed oxygen in hydrocarbon atmospheres.

**Skin:** Wear protective chemical resistant gloves and apron if needed. Safety showers are recommended.

**Eye:** If material is handled such that it could be splashed into eyes, wear plastic face shield or splash-proof safety glasses or goggles. Eye wash stations are recommended.

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**IX. PHYSICAL AND CHEMICAL DATA**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Range °F</td>
<td>212 – 235 °F</td>
</tr>
<tr>
<td>Relative Density (H₂O = 1)</td>
<td>2.67 – 3.03</td>
</tr>
<tr>
<td>Material Density Lbs./Gal</td>
<td>22.19 – 25.23</td>
</tr>
<tr>
<td>% Volatile Organic Compounds (VOC) by Weight</td>
<td>&lt; 0.9</td>
</tr>
<tr>
<td>VOC: lbs/gal</td>
<td>&lt; 0.23 g/L: 27.3</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>No Data</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg @ 68°F)</td>
<td>No Data</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>% Solids by Weight</td>
<td>99.0</td>
</tr>
<tr>
<td>Appearance/Odor</td>
<td>Colored paste</td>
</tr>
</tbody>
</table>

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**X. STABILITY AND REACTIVITY INFORMATION**

**Stability (Thermal, Light, etc.):** Stable

**Conditions to avoid:** Avoid exposure to ultraviolet light, and/or sunlight. Avoid excessive heat, **Do not** store above (60°C) 140°F. Hazardous exothermic polymerization can occur when heated. Hazardous polymerization can occur if exposed to direct sunlight.

**Hazardous Polymerization:** High temperatures (60°C) 140°F and oxygen deficient atmosphere reduce inhibitor effectiveness and may cause polymerization, raising the temperature and pressure, possible rupturing the container. **Do NOT** blanket or mix with nitrogen or other inert gases as this renders the inhibitor ineffective.

**Materials to avoid:** Avoid initiators including peroxides, strong oxidizing agents, copper, copper alloys carbon steel, iron, rust, nickel, cobalt, strong bases.

**Hazardous Decomposition Products:** CO₂, CO, hydrocarbons and nitrogen (NOx) other oxides may be generated as products of combustion.

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**XI. TOXICOLOGICAL INFORMATION**

**Carcinogen:** This product has not been identified as a carcinogen by OSHA or the National Toxicology Program (NTP), or the International Agency for Research Cancer (IARC).

**Mutagen:** No Data

**Teratogen:** No Data

**Reproductive Toxicity:** No Data

**Components:**

Glycerol propoxylated, Esters w/ acrylic acid 52408-84-1

[NLP 500-114-5]

Oral LD50 > 5000 mg/kg irritating to eyes

Dermal OCED 404, 0-8 = 0.6 (Rabbit) not classified

methyl-1(4-methylthiophenyl)-2-mopholinopropan-1-one 71868-10-5

Oral LD50 Rat: 1800 mg/kg literature

2,2-dimethoxy-1,2-diphenylethan-1-one 24650-42-8

Oral LD50 Rat: > 2000 mg/kg
Dermal Sensitation Rabbit: OECD 406 Negative Neg/ Pos
Polyseter Acrylate
Oral LD50 Rat: > 2,000 mg/kg
Dermal LD50 Rabbit: > > 2,000 mg/kg

XII. ECOLOGICAL INFORMATION
This product has not been evaluated at this time.
As with all chemicals and products, Do Not allow to enter sewers, drains or waterways.

XIII. DISPOSAL INFORMATION
Waste Disposal Method: If discarded in its original unused form, this product does NOT exhibit the characteristics of a RCRA hazardous waste as defined under 40CFR261. Waste materials should be dumped or buried in an approved landfill, or incinerated in a suitable combustion chamber. Disposal must comply with all local, state, and federal regulations.
Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability:
1) Recycle or rework if at all feasible. 2) Incinerate at an authorized facility. 3) Treat at an acceptable waste treatment facility.

xiv. TRANSPORT INFORMATION
Flammability Classification:
OSHA: Class III B
US DOT (Ground): Not Regulated
IMO/ IMDG (Sea): Not Regulated
IATA/ ICAO (Air): Not Regulated
Canadian TDG: Not Regulated
Not classified as dangerous in the meaning of transport regulations.

XV. REGULATORY INFORMATION
SARA Title III Section 313:
This material does Not contain chemicals subject to the reporting requirements of the SARA Superfund Amendments and Reauthorization Act.

SARA Section 302 - Extremely Hazardous Substances (EHS):
This product does not contain any components regulated under Section 302 (40 CFR 355) as EHS.

TSCA Section 8(b) Inventory Status:
All component(s) of this product are either exempt or listed on the TSCA Inventory.

DSL (Canadian Domestic Substances List):
All components of this product are either exempt or listed on the DSL.

U.S. State Regulations
California Proposition 65:
This product contains a chemical(s) known by the state of California to cause birth defects or reproductive harm.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Trace amounts</td>
</tr>
</tbody>
</table>
**XVI. OTHER INFORMATION**

The information herein is presented in good faith, based on the data available to us and is believed to be correct as of the date hereof. However, Gans Ink and Supply Co., Inc. makes no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Gans Ink and Supply Co., Inc. assumes no responsibility for any damages of any nature directly or indirectly resulting from the use of or reliance upon the information contained herein. Users must make their own determination as to the suitability of the product for their purpose prior to use. In accordance with good practices of personal cleanliness and hygiene, handle with due care and avoid unnecessary contact with this product.

| B | Safety Glasses  
|   | Gloves  

[Image of safety glasses and gloves]