SECTION 1: IDENTIFICATION

SDS Number: 510.1, version 7/13/2016

(a) Product identifier
Gans Item ID: 5SAUB047013, 5SAUB047613, 5SBUB047813, 5SRUB046913, 5SRUB047313, 5SRUB374813, 5SWU7484713, 5SYUB374713, UV10897, UV13268, UV13716, UV99-1007, UV38-1004, UV12496

Gans Description: UV HS2 Process; UV Universal; other UV

(b) Other means of identification
General description: Lithographic printing inks, UV-cure

(c) Recommended use
Product Use: Industrial use only
Restrictions on use: Not for residential use.

(d) Supplier’s details
Manufacturer: Gans Ink and Supply Co, Inc.
Address: 1441 Boyd Street
Los Angeles, CA 90033
Contact Person: Marco Ramos
Telephone: 323-264-2200 x139
Email: MSDS@gansink.com

(e) Emergency telephone number:
Available only during business hours.
(323) 264-2200 Monday- Friday 7:00 A.M.– 9:00 P.M.
24 Hours Response: Los Angeles County Fire Department / HazMat. Department

SECTION 2: HAZARD(S) IDENTIFICATION

(a) Classification
- This mixture is hazardous according to OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Physical hazards: Not Classified
- Health hazards:
  - Acute toxicity oral - Category 4
  - Skin Corrosion - Category 1A
  - Eye Damage - Category 2A
  - Skin Sensitization - Category 1A
  - Reproductive Toxicity - Category 1B
Aquatic Hazard, Chronic – Category 3

(b) Label elements

Signal Word: Danger

Hazard Statements: Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye irritation. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child. Harmful to aquatic life with long lasting effects.

Precautionary Statements:
Prevention: Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe mists. Wear protective gloves/protective clothing/eye protection/face protection. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Response: If exposed or concerned: Get medical advice/attention.

IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Call a poison center/doctor if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor.
IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container to disposal recycling center. Waste management should be in full compliance with federal, state and local laws.

Hazard Pictograms:

(c) Hazards not otherwise classified
None known

(d) Ingredients of unknown acute toxicity
NA

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture
TS = Trade Secret (as specified by substance manufacturer)

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS # (TS = trade secret)</th>
<th>Conc. min. (wt. %)</th>
<th>Conc. max. (wt. %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol, propoxylated, esters with acrylic acid</td>
<td>52408-84-1</td>
<td>22.1%</td>
<td>38.2%</td>
</tr>
<tr>
<td>Epoxy acrylate oligomer</td>
<td>55818-57-0</td>
<td>0.0%</td>
<td>23.9%</td>
</tr>
<tr>
<td>Hexamethylene diacrylate</td>
<td>13048-33-4</td>
<td>0.0%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Substance</td>
<td>CAS # (TS = trade secret)</td>
<td>Conc. min. (wt. %)</td>
<td>Conc. max. (wt. %)</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------</td>
<td>--------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Vinylester resin 2</td>
<td>TS</td>
<td>0.0%</td>
<td>17.5%</td>
</tr>
<tr>
<td>Vinylester resin 1</td>
<td>TS</td>
<td>0.0%</td>
<td>9.9%</td>
</tr>
<tr>
<td>Acrylated resin</td>
<td>TS</td>
<td>0.0%</td>
<td>9.3%</td>
</tr>
<tr>
<td>Glycerol propoxylate triacrylate</td>
<td>TS</td>
<td>0.3%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Pentaerythritol, ethoxylated, esters with acrylic acid</td>
<td>51728-26-8</td>
<td>0.0%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Neopentylglycol propoxylated diacrylate</td>
<td>84170-74-1</td>
<td>0.9%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Gans UVP-2005</td>
<td>TS</td>
<td>0.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Monomer</td>
<td>TS</td>
<td>0.0%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Gans UVP-2002</td>
<td>TS</td>
<td>2.1%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Rosin</td>
<td>8050-09-7</td>
<td>0.0%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Gans UVP-2004</td>
<td>TS</td>
<td>1.1%</td>
<td>3.1%</td>
</tr>
<tr>
<td>2-ethyl-2-[[1-oxoallyl]oxy]methyl]-1,3-propanediyl diacrylate</td>
<td>15625-89-5</td>
<td>0.0%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Polyester Acrylate</td>
<td>TS</td>
<td>0.0%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Gans UVP-2013</td>
<td>TS</td>
<td>1.1%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Benzophenone</td>
<td>119-61-9</td>
<td>0.0%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Gans UVP-2011</td>
<td>TS</td>
<td>0.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Dioctyl maleate</td>
<td>2915-53-9</td>
<td>0.0%</td>
<td>0.8%</td>
</tr>
<tr>
<td>2-Ethyl/hexanoic Acid</td>
<td>149-57-5</td>
<td>0.0%</td>
<td>0.4%</td>
</tr>
<tr>
<td>hydroxypropyl acrylate</td>
<td>25584-83-2</td>
<td>0.0%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Pigment Violet 1</td>
<td>1326-03-0</td>
<td>0.0%</td>
<td>0.2%</td>
</tr>
<tr>
<td>triphenylphosphine</td>
<td>603-35-0</td>
<td>0.0%</td>
<td>0.2%</td>
</tr>
<tr>
<td>4-methoxyphenol</td>
<td>150-76-5</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Acrylic acid</td>
<td>79-10-7</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

**SECTION 4: FIRST AID MEASURES**

(a) Description of first aid measures:

**Inhalation:** Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor.

**Skin contact:** Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**Eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.

**Ingestion:** Do NOT induce vomiting. Rinse mouth. Call a poison center/doctor if you feel unwell.

(b) Most important symptoms and effects, both acute and delayed:

**Ingestion:** Harmful if swallowed. Suspected of damaging fertility or the unborn child.

**Inhalation:** No data available

**Skin contact:** Causes severe skin burns and eye damage. May cause an allergic skin reaction.

**Eye contact:** Causes severe skin burns and eye damage. Causes serious eye irritation.
(c) Indication of any immediate medical attention and special treatment needed:
Symptoms such as burning or pain to eyes or skin may indicate exposure and the need for first aid.

SECTION 5: FIRE – FIGHTING MEASURES

(a) Extinguishing Media:
Suitable extinguishing media: Use CO2, dry chemical, fire-fighting foam, or water fog extinguishing media
Unsuitable extinguishing media: Do not use water stream. Water stream or spray is OK to cool unopened containers only.

(b) Special hazards arising from the substance or mixture: Thermal decomposition or combustion products may include COx, and NOx. High pressure may build up in heated containers.

(c) Special protective equipment and precautions for fire-fighters: Wear NIOSH approved self-contained respiratory protective device, and fully protective fire-fighting suit.

SECTION 6: ACCIDENTAL RELEASE MEASURES

(a.i) Personal precautions:
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
No smoking or other sources of ignition near spillage.
Wear protective gloves/protective clothing/eye protection/face protection.
Ensure adequate area ventilation, and avoid inhalation of fumes.

(a.ii) Protective equipment:
See Section 8

(a.iii) Emergency procedures:
If dangerous conditions exist, contact emergency response personnel, follow emergency procedures, and contact emergency response authorities.

(b) Methods for containment and cleaning up:
If it is safe to do so, adjust leaking containers to reduce or eliminate the continued release. Wear all Personal Protection listed in Section 8 before directly contacting spilled material. For high viscosity materials, scoop or shovel material into appropriate container for reuse, recycling, or disposal. For low viscosity materials, first surround and then cover spilled material with inert absorbent (vermiculite, or similar). Then scoop or shovel material into appropriate container for reuse, recycling, or disposal.

Residual material can be cleaned with UV blanket wash, acetone, or other press solvent.
Consult your company's spill procedure for details of regulatory restrictions and recommendations.
Do not allow spilled materials, or clean up materials to enter storm drains or natural water ways.

SECTION 7: HANDLING AND STORAGE

(a) Precautions for safe handling:
Do not eat, drink or smoke when using this product. Do not breathe mists. Wash all contact areas thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing fume/gas/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.

(b) Conditions for safe storage:
Store locked up. Store in original container and keep containers covered and sealed. Store in cool, dry, well-ventilated place. Appropriate storage temperature is approximately 7° - 35° C (45° - 95° F).

Incompatibilities: Avoid contact with heat, sources of ignition, sunlight, and strong oxidizers.
SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

(a) Permissible exposure limits

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS #</th>
<th>ppm</th>
<th>mg/m^3</th>
<th>8-hour TWA (ST)</th>
<th>Ceiling</th>
<th>Up to 10-hour TWA (ST)</th>
<th>Ceiling</th>
<th>8-hour TWA (ST)</th>
<th>STEL (C) Ceiling</th>
<th>ACGIH 2015 TVL</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Appropriate engineering controls:
Ventilation requirements: Adequate ventilation in accordance with good engineering practice must be provided.
General protective measures: Ensure that eye flushing /eye wash stations, and hand washing areas are accessible.

c) Personal protective equipment:
Inhalation: Avoid breathing mist / vapors / spray. Where mist or aerosol is present, an organic vapor respirator is recommended.

Skin Contact: Wear protective gloves / protective clothing. Contaminated work clothing must not be allowed out of the workplace. Neoprene or nitrile gloves are recommended. PVC gloves are not compatible. Always wear long sleeves and where exposure potential is high, a neoprene or other chemical resistant apron is recommended.

Eye Contact: Wear eye protection / face protection. Eye and face protective devices must comply with ANSI Z87.1-1989. Recommended eye protection: goggles, flexible fitting, hooded ventilation. A transparent face shield is recommended.

Ingestion: Avoid eating, drinking, or smoking in work area and wash hands after handling this product.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

(a) Appearance (physical state, color): Viscous paste or liquid, various colors
(b) Odor: Ester-like
(c) Odor threshold: Data not available
(d) pH: Data not available
(e) Melting point / freezing point: Data not available
(f) Initial Boiling point / Range: Data not available
(g) Flashpoint: > 212 °F (> 100 °C)
(h) Evaporation Rate: Data not available
(i) Flammability (solid / gas): Not classified as flammable / Not classified as flammable
(j) Upper / lower flammability explosion limits: Data not available
(k) Vapor Pressure (mm Hg @ 68°F): Data not available
(l) Vapor Density (Air = 1): Data not available
(m) Relative Density (H₂O = 1): Data not available
(n) Solubility: insoluble in water
(o) Partition coefficient n-Octanol / Water: Data not available
(p) Auto-ignition temperature: Data not available
(q) Decomposition temperature: Data not available
(r) Viscosity: Data not available
Other properties
VOC % (wt): ≤ 1.0
VOC (lbs./gal): ≤ 0.08

SECTION 10: STABILITY AND REACTIVITY INFORMATION
(a) Reactivity: Not reactive under normal storage conditions. See Section 7. Mixture will undergo polymerization reaction in the presence of sunlight, bright industrial lights, or high temperatures.
(b) Chemical stability: Mixture is chemically stable under normal storage and handling conditions, and under normal temperatures and pressures.
(c) Possibility of hazardous reactions: Exposure to excess heat may cause exothermic polymerization reaction.
(d) Conditions to avoid: Avoid contact with heat (temperature > 100° F, 38° C), sources of ignition, sunlight, and strong oxidizers.
(e) Incompatible materials: Radical forming initiators, peroxides or other strong oxidizers, strong alkalies or reactive metals.
(f) Hazardous decomposition product: No data available.

SECTION 11: TOXICOLOGICAL INFORMATION
(a) Likely routes of exposure: Skin contact, eye contact, inhalation, ingestion.
(b) Symptoms related to physical, chemical, and toxicological characteristics:
   Skin contact: There may be irritation and redness at site of contact.
   Eye contact: There may be irritation and redness. Eyes may water profusely.
   Inhalation: There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.
   Ingestion: There may be irritation and redness of the mouth and throat, and a feeling of illness.
(c) Delayed and immediate effects, and chronic effects from long-term exposure
   No data available
(d) Numerical measures of toxicity, acute:

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS # (TS= trade secret)</th>
<th>Oral</th>
<th>Inhalation</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol, propoxylated, esters with acrylic acid</td>
<td>52408-84-1</td>
<td>LD50 2000 mg/kg bw (rat)</td>
<td>Data not available</td>
<td>LD50 2000 mg/kg bw (rabbit)</td>
</tr>
<tr>
<td>Epoxy acrylate oligomer</td>
<td>55818-57-0</td>
<td>LD50 2000 mg/kg bw (rat)</td>
<td>Data not available</td>
<td>LD50 2000 mg/kg bw (rat)</td>
</tr>
<tr>
<td>Hexamethylene diacrylate</td>
<td>13048-33-4</td>
<td>LD50 5000 mg/kg bw (rat)</td>
<td>LC50 (7 h) 410 mg/m³ air (rat)</td>
<td>LD50 3650 mg/kg bw (rabbit)</td>
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<tr>
<td>Vinylester resin 2</td>
<td>TS</td>
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<td>Data not available</td>
<td>Data not available</td>
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<tr>
<td>Vinylester resin 1</td>
<td>TS</td>
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<td>Data not available</td>
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<tr>
<td>Acrylated resin</td>
<td>TS</td>
<td>Data not available</td>
<td>Data not available</td>
<td>Data not available</td>
</tr>
<tr>
<td>Glycerol propoxylate triacrylate</td>
<td>TS</td>
<td>Data not available</td>
<td>Data not available</td>
<td>Data not available</td>
</tr>
<tr>
<td>Pentaerythritol, ethoxylated, esters with acrylic acid</td>
<td>51728-26-8</td>
<td>LD50 2000 mg/kg bw (rat)</td>
<td>Data not available</td>
<td>LD50 2000 mg/kg bw (rat)</td>
</tr>
<tr>
<td>Neopentylglycol propoxylated diacrylate</td>
<td>84170-74-1</td>
<td>LD50 5000 mg/kg bw (rat)</td>
<td>LC50 (4 h) 2 mg/L air (rat)</td>
<td>LD50 2000 mg/kg bw (rat)</td>
</tr>
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<td>Gans UVP-2005</td>
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<td>LD50 1694 mg/kg bw (rat)</td>
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<td>LD50 6929 mg/kg bw</td>
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<td>LD50 2000 mg/kg bw (rat)</td>
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</tr>
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<tr>
<td>Rosin</td>
<td>8050-09-7</td>
<td>LD50 1000 - 5000 mg/kg bw (rat)</td>
<td>LD50 2000 mg/kg bw (rat)</td>
<td></td>
</tr>
<tr>
<td>Gans UVP-2004</td>
<td>TS</td>
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<td>Data not available</td>
<td></td>
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<tr>
<td>2-ethyl-2-[[1-oxoallyl]oxy]met hyl]-1,3-propanediyl diacrylate</td>
<td>15625-89-5</td>
<td>LD50 5000 mg/kg bw (rat)</td>
<td>LC50 (6 h) 550 mg/m³ air (rat)</td>
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</tr>
<tr>
<td>Polyester Acrylate</td>
<td>TS</td>
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<td>Data not available</td>
<td></td>
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<td>LD50 2895 mg/kg bw (mouse)</td>
<td>LD50 3535 mg/kg bw (rabbit)</td>
<td></td>
</tr>
<tr>
<td>Gans UVP-2011</td>
<td>TS</td>
<td>LD50 5000 mg/kg bw (rat)</td>
<td>LD50 2000 mg/kg bw (rat)</td>
<td></td>
</tr>
<tr>
<td>Dioctyl maleate</td>
<td>2915-53-9</td>
<td>Data not available</td>
<td>Data not available</td>
<td></td>
</tr>
<tr>
<td>2-Ethylhexanoic Acid</td>
<td>149-57-5</td>
<td>LD50 2043 mg/kg bw (rat)</td>
<td>LC50 (6 h) 110 mg/m³ air (rat)</td>
<td></td>
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<tr>
<td>hydroxypropyl acrylate</td>
<td>25584-83-2</td>
<td>LD50 820 mg/kg bw (rat)</td>
<td>LC50 (8 h) 380 mg/m³ air (rat)</td>
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</tr>
<tr>
<td>Pigment Violet 1</td>
<td>1326-03-0</td>
<td>Data not available</td>
<td>Data not available</td>
<td></td>
</tr>
<tr>
<td>triphenylphosphine</td>
<td>603-35-0</td>
<td>LD50 700 mg/kg bw (rat)</td>
<td>LC50 (4 h) 12.5 mg/L air (rat)</td>
<td></td>
</tr>
<tr>
<td>4-methoxyphenol</td>
<td>150-76-5</td>
<td>Data not available</td>
<td>Data not available</td>
<td></td>
</tr>
<tr>
<td>Acrylic acid</td>
<td>79-10-7</td>
<td>LD50 146 - 1500 mg/kg bw (rat)</td>
<td>LC50 (4 h) 5.1 mg/L air (rat)</td>
<td></td>
</tr>
</tbody>
</table>

(e) Carcinogens information:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as Group 1 (Carcinogenic to humans), or Group 2A (Probably carcinogenic to humans).
- Benzophenone 119-61-9 = Group 2B (Possibly carcinogenic to humans) by IARC.
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 (13th Report on Carcinogens).
OSHA: Data not available

SECTION 12: ECOLOGICAL INFORMATION

(a) Ecotoxicity
Classification of mixture: Aquatic Hazard, Chronic – Category 3
(b) Persistence and degradability: No data available
(c) Bioaccumulative potential: No data available.
(d) Mobility in soil: No data available
(e) Other adverse effects: No known adverse effects

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of contents/container in accordance with local/regional/national regulations. The hazard and precautionary statements displayed on the label also apply to any residues left in the container.
SECTION 14: TRANSPORT INFORMATION

US DOT (Ground):
(a) UN number: Not applicable
(b) UN Proper Shipping Name: Not applicable
(c) Transport hazard class: Not applicable
(d) Packing Group: Not applicable
(e) Environmental hazards: Not applicable
(f) Transport in bulk
   MARPOL 73/78: No data available
   IBC: No data available.
(g) Special Precautions: None known

SECTION 15: REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Section 8(b) Inventory Status: All ingredients of this mixture are listed on the TSCA Inventory

EPCRA, Section 302 – Extremely hazardous substances: This mixture does not contain listed materials.

CERCLA Hazardous Substances:
- Acrylic acid 79-10-7 CERCLA RQ = 5000

EPCRA Section 313 Toxic Chemicals:
- Acrylic acid 79-10-7

CAA 112(r) Regulated Chemicals for Accidental Release Prevention: This mixture does not contain listed materials.

Hazardous Air Pollutants (HAP):

U.S. State Regulations

Pennsylvania Right to Know: No data available
New Jersey Right to Know: No data available
California Proposition 65: WARNING: This product contains a chemical known to the State of California to cause cancer:
- Benzophenone 119-61-9, 0-1.6% (wt.)

Canadian Environmental Protection Act:
WHMIS Classification: No data available

European Chemical Agency (ECHA): No data available

SECTION 16: 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.