Safety Data Sheet

SECTION 1: IDENTIFICATION

SDS Number: 511, version 8/2/2016

(a) Product identifier
Gans Item ID: UV13268, UV12777, UV12968

Gans Description: UV High Slip Dense Black, UV Uni-Plas T17-18 PLA Black

(b) Other means of identification
General description: UV-curing, lithographic printing ink

(c) Recommended use
Product Use: Industrial use only; printing ink for use on lithographic printing press equipped with UV curing lamps.
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 as hazardous
- Health hazards:
  - Acute Toxicity, Oral -- Category 4
  - Eye Damage -- Category 1
  - Skin Sensitization - Category 1A
  - Reproductive Toxicity - Category 2
  - Aquatic Toxicity, Chronic - Category 2

(b) Label elements
Signal Word: Danger
Hazard Statements: Harmful if swallowed. Causes serious eye damage. May cause an allergic skin reaction. May damage fertility or the unborn child. Toxic to aquatic life with long lasting effects.

Precautionary Statements:
Prevention: Wash contaminated areas thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing mist/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. Avoid release to the environment.

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

If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Collect spillage. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard Pictograms:

(c) Hazards not otherwise classified
None known

(d) Ingredients of unknown acute toxicity
NA

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture: Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS = Trade Secret (as specified by substance manufacturer)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS # (TS= Trade Secret)</th>
<th>Maximum concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol, propoxylated, esters with acrylic acid</td>
<td>52408-84-1</td>
<td>38.4%</td>
</tr>
<tr>
<td>Epoxy acrylate oligomer</td>
<td>55818-57-0</td>
<td>13.2%</td>
</tr>
<tr>
<td>Urethane acrylate oligomer</td>
<td>TS</td>
<td>7.0%</td>
</tr>
<tr>
<td>Hexamethylene diacrylate</td>
<td>13048-33-4</td>
<td>5.2%</td>
</tr>
<tr>
<td>Gans UVP-2002</td>
<td>TS</td>
<td>4.8%</td>
</tr>
<tr>
<td>Multifunctional Acrylate</td>
<td>84170-74-1</td>
<td>3.3%</td>
</tr>
<tr>
<td>Gans UVP-2013</td>
<td>TS</td>
<td>3.2%</td>
</tr>
<tr>
<td>Pentaerythritol triacrylate</td>
<td>3524-68-3</td>
<td>2.7%</td>
</tr>
<tr>
<td>Pentaerythritol tetraacrylate</td>
<td>4986-89-4</td>
<td>2.7%</td>
</tr>
<tr>
<td>Epoxide Acrylate Oligomer</td>
<td>TS</td>
<td>1.0%</td>
</tr>
<tr>
<td>triphenylphosphine</td>
<td>603-35-0</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
SECTION 4: FIRST AID MEASURES

(a) Description of first aid measures:
Ingestion: Call a poison center/doctor if you feel unwell. Rinse mouth.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin contact: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Inhalation: No recommendation

(b) Most important symptoms and effects, both acute and delayed:
Ingestion: Harmful if swallowed. May damage fertility or the unborn child.
Eye contact: Causes serious eye damage.
Skin contact: May cause an allergic skin reaction

(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 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:
No smoking or other sources of ignition near spillage.
Avoid direct contact with spilled material.
Wear all Personal Protection listed in Section 8 before directly contacting spilled material
Ensure there is adequate area ventilation, and avoid excessive 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:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing mist/vapors/spray.
Avoid release to the environment

(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

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>Cal/OSHA PEL</th>
<th>NIOSH REL</th>
<th>ACGIH 2015 TVL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ppm</td>
<td>mg/m³</td>
<td>8-hour TWA (ST) STEL (C) Ceiling</td>
<td>Up to 10-hour TWA (ST) STEL (C) Ceiling</td>
</tr>
</tbody>
</table>

Data not available

(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): 1.2 approximate
(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): ≤ 0.11

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 alkalis 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: No data available
   - 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:

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS # (TS= Trade Secret)</th>
<th>Dermal</th>
<th>Oral</th>
<th>Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol, propoxylated, esters with acrylic acid</td>
<td>52408-84-1</td>
<td>LD50 2000 mg/kg bw (rabbit)</td>
<td>LD50 2000 mg/kg bw (rat)</td>
<td>Data not available</td>
</tr>
<tr>
<td>Epoxy acrylate oligomer</td>
<td>55818-57-0</td>
<td>LD50 2000 mg/kg bw (rat)</td>
<td>LD50 2000 mg/kg bw (rat)</td>
<td>Data not available</td>
</tr>
<tr>
<td>Urethane acrylate oligomer</td>
<td>TS</td>
<td>Data not available</td>
<td>Data not available</td>
<td>Data not available</td>
</tr>
<tr>
<td>Hexamethylene diacrylate</td>
<td>13048-33-4</td>
<td>LD50 &gt;3000 mg/kg bw (rat)</td>
<td>LD50 &gt;5000 mg/kg bw (rat)</td>
<td>Data not available</td>
</tr>
<tr>
<td>Gans UVP-2002</td>
<td>TS</td>
<td>LD50 1340 - 2756 mg/kg bw (rat)</td>
<td>Data not available</td>
<td>LD50 2000 mg/kg bw (rat)</td>
</tr>
<tr>
<td>Multifunctional Acrylate</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>
<tr>
<td>Gans UVP-2013</td>
<td>TS</td>
<td>LD50 1470 mg/kg bw (rat)</td>
<td>Data not available</td>
<td>Data not available</td>
</tr>
<tr>
<td>Pentaerythritol triacrylate</td>
<td>3524-68-3</td>
<td>Data not available</td>
<td>Data not available</td>
<td>Data not available</td>
</tr>
<tr>
<td>Pentaerythritol tetraacrylate</td>
<td>4986-89-4</td>
<td>Data not available</td>
<td>Data not available</td>
<td>Data not available</td>
</tr>
<tr>
<td>Epoxy Acrylate Oligomer</td>
<td>TS</td>
<td>Data not available</td>
<td>Data not available</td>
<td>Data not available</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>LD50 2500 mg/kg bw (rat)</td>
</tr>
</tbody>
</table>

(e) Carcinogens information: No ingredients in this mixture are known to be listed by the National Toxicology Program (NTP) Report on Carcinogens, or have been found to be potential carcinogens in the International Agency for Research on Cancer (IARC), or by OSHA.

SECTION 12: ECOLOGICAL INFORMATION

(a) Ecotoxicity
Classification of mixture:
- Aquatic Toxicity, Chronic - Category 2
(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.
This product does NOT exhibit the characteristics of a RCRA hazardous waste as defined under 40CFR261.

SECTION 14: TRANSPORT INFORMATION

US DOT (Ground):
(a) UN number: UN3082
(b) UN Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
(c) Transport hazard class: 9
(d) Packing Group: III
(e) Environmental hazards: Marine Pollutant
(f) Transport in bulk
MARPOL 73/78:
IBC:
(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: This mixture does not contain listed materials.
EPCRA Section 313 Toxic Chemicals: This mixture does not contain listed materials.
CAA 112(r) Regulated Chemicals for Accidental Release Prevention: This mixture does not contain listed materials.
Hazardous Air Pollutants (HAP): This mixture does not contain listed materials.

U.S. State Regulations

California Proposition 65: This mixture does not contain listed materials.

Canadian Environmental Protection Act: No data available.

European Chemical Agency (ECHA):
Substances of Very High Concern (SVHC): This mixture does not contain listed materials.

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.