SAFETY DATA SHEET

1. Identification
Product identifier: CNTOP Pigment ink Yellow
Other means of identification: Not available
Recommended use: Ink
Recommended restrictions: Industrial Use Only

Manufacturer information:
NIPPON KAYAKU AMERICA, INC.
101 Metro Drive, Suite 375
San Jose CA 95110
United States
Phoone number: +1-408-878-6173
Emergency phoone number: +1-408-878-6173

2. Hazard(s) identification
Physical hazards: Not classified.
Health hazards: Sensitization, skin
Environmental hazards: Not classified.
OSHA defined hazards: Not classified.

Label elements

Signal word: Warning
Hazard statement: May cause an allergic skin reaction.
Precautionary statement:
Prevention: Avoid breathing mist or vapor. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves.
Response: If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention.
Storage: Not available.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC): None known.

3. Composition/information on ingredients
Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLYCERIN</td>
<td></td>
<td>56-81-5</td>
<td>18</td>
</tr>
<tr>
<td>2,2',2''-Nitrilotriethanol</td>
<td></td>
<td>102-71-6</td>
<td>0.4</td>
</tr>
</tbody>
</table>

4. First-aid measures
Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact: Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists.
Eye contact: Rinse with water. Get medical attention if irritation develops and persists.
Ingestion: Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

Most important symptoms/effects, acute and delayed: May cause an allergic skin reaction. Dermatitis. Rash.
5. Fire-fighting measures

Suitable extinguishing media
Alcohol resistant foam. Dry powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Use water spray to reduce vapors or divert vapor cloud drift.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions
Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions for safe handling
Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry place out of direct sunlight. Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td>Type</td>
<td>PEL</td>
</tr>
<tr>
<td>GLYCERIN (CAS 56-81-5)</td>
<td></td>
<td>5 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m3</td>
</tr>
<tr>
<td>Components</td>
<td>Type</td>
<td>TWA</td>
</tr>
<tr>
<td>US. ACGIH Threshold Limit Values</td>
<td></td>
<td>5 mg/m3</td>
</tr>
<tr>
<td>2,2',2''-Nitrilotriethanol (CAS 102-71-6)</td>
<td>Type</td>
<td>TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m3</td>
</tr>
</tbody>
</table>

Appropriate engineering controls
Provide adequate general and local exhaust ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin protection
Impervious gloves.

Hand protection
Impervious gloves.
Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection**
Mist respirator, include single use respirator

**Thermal hazards**
Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

### 9. Physical and chemical properties

**Appearance**
- **Physical state**: Liquid.
- **Form**: Liquid.
- **Color**: Yellow.
- **Odor**: Slight.
- **Odor threshold**: Not available.
- **pH**: 7 - 10
- **Melting point/freezing point**: Not available.
- **Initial boiling point and boiling range**: > 212 °F (> 100 °C)
- **Flash point**: Not available.
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not applicable.

#### Upper/lower flammability or explosive limits
- **Flammability limit - lower (%)**: Not available.
- **Flammability limit - upper (%)**: Not available.

- **Vapor pressure**: Not available.
- **Vapor density**: Not available.
- **Specific gravity**: Not available.

#### Solubility(ies)
- **Solubility (water)**: dispersible in water
- **Partition coefficient (n-octanol/water)**: Not available.
- **Auto-ignition temperature**: Not available.
- **Decomposition temperature**: Not available.
- **Viscosity**: < 15 mPa·s @25°C

#### Other information
- **Density**: 1.05 - 1.15 g/cm³ @25°C
- **Surface tension**: 25 - 35 mN/m @25°C

### 10. Stability and reactivity

- **Reactivity**: The product is stable and non-reactive under normal conditions of use, storage and transport.
- **Chemical stability**: Material is stable under normal conditions.
- **Possibility of hazardous reactions**: No dangerous reaction known under conditions of normal use.
- **Conditions to avoid**: Contact with incompatible materials.
- **Incompatible materials**: Strong oxidizing agents.
- **Hazardous decomposition products**: If product is burned hazardous gases such as oxides of carbon and nitrogen and various hydrocarbons may be produced.

### 11. Toxicological information

**Information on likely routes of exposure**
- **Inhalation**: Prolonged inhalation may be harmful.
Skin contact  May cause an allergic skin reaction.
Eye contact  Not available.
Ingestion  Not available.

Symptoms related to the physical, chemical and toxicological characteristics
May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-Nitrilotriethanol (CAS 102-71-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>8 g/kg</td>
</tr>
</tbody>
</table>

GLYCERIN (CAS 56-81-5)

<table>
<thead>
<tr>
<th>Acute</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 18700 mg/kg</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Mouse</td>
<td>26000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>27200 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation  Not available.
Serious eye damage/eye irritation  Not available.

Respiratory or skin sensitization

Respiratory sensitization  Not available.
Skin sensitization  May cause an allergic skin reaction.

Germ cell mutagenicity  Not available.

Carcinogenicity  Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

2,2',2''-Nitrilotriethanol (CAS 102-71-6)  3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity  Not available.
Specific target organ toxicity  Not available.
Specific target organ toxicity - single exposure  Not available.
Specific target organ toxicity - repeated exposure  Not available.

Aspiration hazard  Not available.

Chronic effects  Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-Nitrilotriethanol (CAS 102-71-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>EC50</td>
<td>Green algae (Scenedesmus subspicatus) 169 mg/l, 96 hours</td>
</tr>
<tr>
<td>Components</td>
<td>Species</td>
<td>Test Results</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>--------------</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td></td>
<td>LC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Pimephales promelas</td>
</tr>
</tbody>
</table>

**GLYCERIN (CAS 56-81-5)**

**Aquatic**

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Rainbow trout, donaldson trout (Oncorhyncus mykiss)</td>
</tr>
</tbody>
</table>

**Persistence and degradability**

Not available.

**Bioaccumulative potential**

Not available.

**Mobility in soil**

No data available for this product.

**Other adverse effects**

Not available.

### 13. Disposal considerations

**Disposal instructions**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Waste from residues / unused products**

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**

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

### 14. Transport information

**DOT**

Not regulated as dangerous goods.

**IATA**

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

### 15. Regulatory information

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not Listed.

**US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Listed substance**

Not Listed.

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration**

Not Listed.


Not regulated.

**US EPCRA (SARA Title III) Section 304 Emergency release notification**

Not Listed.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not Listed.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not Listed.
FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

GLYCEROL MIST, RESPIRABLE FRACTION (CAS 56-81-5)
Other Flavoring Substances with OSHA PEL’s

US state regulations
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not Listed.

US. Massachusetts RTK - Substance List
GLYCERINE MIST (CAS 56-81-5)
TRIETHANOLAMINE (CAS 102-71-6)

US. New Jersey Worker and Community Right-to-Know Act
GLYCERIN (CAS 56-81-5)
TRIETHANOLAMINE (CAS 102-71-6)

US. Pennsylvania Worker and Community Right-to-Know Law
2,2',2''-Nitrilotriethanol (CAS 102-71-6)
GLYCERIN (CAS 56-81-5)

US. Rhode Island RTK
GLYCEROL(GLYCERIN MIST) (CAS 56-81-5)
TRIETHANOLAMINE (CAS 102-71-6)

16. Other information, including date of preparation or last revision
Issue date: 10-24-2018

References
ACGIH
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity

Disclaimer
The information in the sheet was written based on the best knowledge and experience currently available. This product is intended for industrial use only. Should it ever be applied for medical or other purposes, this is completely the responsibility of the purchaser. Ingesting or injecting this product or using it in such a manner that some of it might remain within the body is forbidden. Do not do this under any circumstances. This information is based upon the latest data available to us, but should not be read as a guarantee of the contents, physical properties or danger and harmfulness levels. Since all chemicals may have hitherto unknown deleterious properties, care should always be taken during use. It is the responsibility of every user to establish the necessary safety precautions before employment. In addition, the present information is intended for normal usage; however, if special usage is contemplated, then the appropriate safety precautions and application conditions should be carefully prepared.