Safety Data Sheet

1. Product and Company Identification
Product name: TrueVIS INK, TR-CY

Manufacture: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,
Shizuoka-ken, 431-2103 JAPAN
Phone: + 81-53-484-1224
Fax: + 81-53-484-1226

Importer/Supplier: Roland DGA Corporation
Address: 15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone: 949-727-2100
Fax: 949-727-2112

Use of the product: Inkjet Printing
Date of issue: 28 December, 2015

2. Hazard Identification
2.1 Emergency Overview:
Appearance and odor: Cyan liquid and slight odor

This product is classified as dangerous according to GHS.
Flammable liquids Category 4
Acute toxicity - oral Category 5
Skin corrosion/irritation Category 2
Eye damage/irritation Category 1

GHS label elements, including precautionary statements
Pictogram

Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Contains methyl methacrylate. May produce an allergic reaction.
Precautionary statement(s)

Prevention
Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
Wear protective gloves/protection clothing/eye protection/face protection.

Response
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/physician if you feel unwell.

Storage
Store in a well-ventilated place. Keep cool.

2.2. OSHA regulatory status
This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

2.3. Potential health effects
Likely route of exposure: Eye, skin, inhalation or oral.
Eye: Causes severe eye injury which may persist for several days.
Skin: Contact with skin may cause irritation, swelling or redness.
Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.

Ingestion: May cause upset stomach.
Chronic Health Hazards: None Known.
Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

See section 11 for more information.

2.4. Potential environmental effects
See section 12 for Ecological information.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Composition</th>
<th>CAS No.</th>
<th>% By Weight</th>
<th>Classification HCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>112-36-7</td>
<td>65-75</td>
<td>Skin Irr. 2: H315</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>96-48-0</td>
<td>5-15</td>
<td>Acute Tox. 4: H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3: H336</td>
</tr>
<tr>
<td>Triethylene glycol monobutyl ether</td>
<td>143-22-6</td>
<td>1-10</td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>80-62-6</td>
<td>&lt;0.3</td>
<td>Flam. Liq. 2: H225</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3: H335</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irr. 2: H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1: H317</td>
</tr>
</tbody>
</table>
4. First Aid Measures
4.1. First aid procedures
   Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
   Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.
   Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
   Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians
   May cause skin and eye irritation. Excessive inhalation of mist will cause respiratory irritation.

5. Fire Fighting Measures
5.1. Flammable properties:
   Flash Point: 71 deg.C

5.2. Extinguishing media
   Suitable extinguishing media:
   Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid
   Unsuitable extinguishing media:
   No information

5.3. Protection of fire fighters
   Special hazards arising from the substance or mixture
   Toxic and irritating fume and/or gases may generate by combustion.

   Protective equipment and precautions for firefighters
   Wear self-contained breathing apparatus (SCBA) and full protective equipment.
   Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental Release Measures
   General:
   Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. Absorb spill with sand or earth then place in a chemical waste container.

6.1. Personal precautions
   Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

6.2. Environmental precautions
   Wipe off spillage. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment
   Dike spilled product.

6.4. Methods for Clean-up
   Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.
6.5. Other information
   No information

6.6. Spill or leak statements by type of chemical
   Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill
   with inert sand, then place in suitable container. For large spills; use water spray to disperse vapors and dilute
   spill to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage
7.1. Handling
   Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children
   and do not drink. Do not dismantle container.

7.2. Storage
   Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product
   with oxidizing agents or explosives.

8. Exposure Controls/Personal Protection
8.1. Exposure Guidelines
   Occupational Exposure Limits:

   EU:

<table>
<thead>
<tr>
<th>components</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>50ppm</td>
<td>100ppm</td>
</tr>
</tbody>
</table>

   DNEL(Derived No Effect Level)

<table>
<thead>
<tr>
<th>components</th>
<th>Long term exposure</th>
<th>Short term exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>50.05mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>130mg/m³</td>
<td>958mg/m³</td>
</tr>
</tbody>
</table>

   REACH Toxicological Information (Workers - Hazard via inhalation route)

<table>
<thead>
<tr>
<th>components</th>
<th>OSHA:PEL</th>
<th>ACGIH:TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>100ppm</td>
<td>416mg/m³</td>
</tr>
</tbody>
</table>

   US:

   California OELs (California Code of Regulations, Title 8, Section 5155. Airborne Contaminants)

<table>
<thead>
<tr>
<th>components</th>
<th>PEL</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>5ppm, 33mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>50ppm, 205mg/m³</td>
<td>100ppm, 410mg/m³</td>
</tr>
</tbody>
</table>

   Australia: OELs

<table>
<thead>
<tr>
<th>components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>208 mg/m³</td>
</tr>
</tbody>
</table>
8.2. Engineering controls
Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Respiratory protection: In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with gollges) or full face-piece respirator (without googles) filtered with organic vapor pouch.

Hand protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, use protective gloves. Recommended impervious gloves is butyl rubber glove.

Eye/face protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.

Skin protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear protective clothing.

General hygiene measures: Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.

9. Physical and Chemical Properties

Appearance: Cyan Liquid
Odor: Slightly
pH: No data available
Boiling point: No data available
Flash point: 71 deg.C
Flammability(solid, gas): Not applicable
Explosive properties: None
Oxidizing properties: None
Vapor pressure: No data available
Specific Gravity (g/cm³, 20°C): No data available
Solubility: No data available
Water Solubility: Lightly soluble
Partition coefficient: n-octanol/water: No data available
Viscosity: No data available
Vapor density: No data available
Evaporation rate: No data available
Melting point: No data available
Volatile organic compounds (VOC) content: 890 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

10.1. Reactivity: Stable under normal temperature

10.2. Possibility of hazardous reactions: No data available

10.3. Chemical stability: Physically stable under an ambient temperature or lower.

10.4. Conditions to avoid: If it is heated, the container could explode to be broken down. Do not subject the container to static electricity.

10.5. Incompatible materials: This product should not mix with strong oxidants and high-pressure gases.

10.6. Hazardous decomposition products: Toxic gases such as CO and NOx will be generated during combustion.
11. Toxicological Information

Acute toxicity:

<table>
<thead>
<tr>
<th>Compound</th>
<th>LD50 (oral-rat)</th>
<th>LD50 (skin-rat)</th>
<th>LD50 (oral-rat)</th>
<th>LD50 (skin-marmot)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>4790 mg/kg</td>
<td>No data available</td>
<td>1580 mg/kg</td>
<td>5600 mg/kg</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: No data available

Serious eye damage/eye irritation: No data available

Respiratory or skin sensitisation: No data available

Germ cell mutagenicity: No data available

Reproductive toxicity: No data available

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

12. Ecological Information

Ecotoxicity: No data available

Persistence/Degradability: No data available

Bioaccumulation/Accumulation: No data available

Mobility in environment media: No data available

Other adverse effects: No data available

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.6. Special precautions for user:
Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code:
Not regulated
15. Regulatory Information

EU Information:
Chemical Safety Assessment according to (EC)1907/2006:
This product has not carried out any Chemical Safety Assessment yet.

US Information:
Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.
Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section 12(b) export notification requirements.

California Proposition 65: Not regulated

SARA TITLE III:
Section 313:
Diethylene glycol diethyl ether (Chemical Category N230)
Triethylene glycol monobutyl ether (Chemical Category N230)

Australia Information:
Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System
Health - 3 , Flammable - 2 , Reactivity - 0
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

The information in this Safety Data Sheet (SDS) is believed to be correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.
Safety Data Sheet

1. Product and Company Identification
Product name: TrueVIS INK, TR-MG

Manufacture: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
Phone: +81-53-484-1224
Fax: +81-53-484-1226

Importer/Supplier: Roland DGA Corporation
Address: 15363 Barranca Parkway Irvine, CA 92618-2201
Phone: 949-727-2100
Fax: 949-727-2112

Use of the product: Inkjet Printing
Date of issue: 28 December, 2015

2. Hazard Identification
2.1 Emergency Overview:
Appearance and odor: Magenta liquid and slight odor

This product is classified as dangerous according to GHS.
Flammable liquids Category 4
Acute toxicity - oral Category 5
Skin corrosion/irritation Category 2
Eye damage/irritation Category 1

GHS label elements, including precautionary statements
Pictogram

Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Contains methyl methacrylate. May produce an allergic reaction.
Precautionary statement(s)

Prevention  Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
Wear protective gloves/protective clothing/eye protection/face protection.

Response  IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/physician if you feel unwell.

Storage  Store in a well-ventilated place. Keep cool.

2.2. OSHA regulatory status
This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

2.3. Potential health effects
Likely route of exposure:  Eye, skin, inhalation or oral.
Eye:  Causes severe eye injury which may persist for several days.
Skin:  Contact with skin may cause irritation, swelling or redness.
Inhalation:  Exposure to vapors (mist) will cause respiratory irritation and anesthesia.

Ingestion:  May cause upset stomach.
Chronic Health Hazards:  None Known.
Carcinogenicity:  None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

See section 11 for more information.

2.4. Potential environmental effects
See section 12 for Ecological information.

3. Composition/Information on Ingredients

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<td>65-75</td>
<td>Skin Irrit. 2: H315</td>
</tr>
</tbody>
</table>
| γ-butyrolactone                      | 96-48-0 | 5-15        | Acute Tox. 4: H302
|                                      |         |             | Eye Dam. 1: H318
|                                      |         |             | STOT SE 3: H336                        |
| Triethylene glycol monobutyl ether   | 143-22-6| 1-10        | Eye Dam. 1: H318                       |
| Methyl methacrylate                 | 80-62-6 | <0.3        | Flam. Liqu. 2: H225
|                                      |         |             | STOT SE 3: H335
|                                      |         |             | Skin Irrit. 2: H315
|                                      |         |             | Skin Sens. 1: H317                    |
4. First Aid Measures
4.1. First aid procedures
Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians
May cause skin and eye irritation. Excessive inhalation of mist will cause respiratory irritation.

5. Fire Fighting Measures
5.1. Flammable properties:
Flash Point: 71 deg.C

5.2. Extinguishing media
Suitable extinguishing media:
- Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid
Unsuitable extinguishing media:
- No information

5.3. Protection of fire fighters
Special hazards arising from the substance or mixture
Toxic and irritating fume and/or gases may generate by combustion.
Protective equipment and precautions for firefighters
- Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental Release Measures
General:
Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. Absorb spill with sand or earth then place in a chemical waste container.

6.1. Personal precautions
Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

6.2. Environmental precautions
Wipe off spillage. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment
Dike spilled product.

6.4. Methods for Clean-up
Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.
6.5. Other information
No information

6.6. Spill or leak statements by type of chemical
Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill with inert sand, then place in suitable container. For large spills; use water spray to disperse vapers and dilute spill to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage
7.1. Handling
Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure pouch is dry before insertion into printer housing.

7.2. Storage
Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product with oxidizing agents or explosives.

8. Exposure Controls/Personal Protection
8.1. Exposure Guidelines
Occupational Exposure Limits:

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<th>EU:</th>
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<th>TWA</th>
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DNEL(Derived No Effect Level)

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REACH Toxicological Information (Workers - Hazard via inhalation route)

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<tr>
<td></td>
<td>416mg/m³</td>
<td>-</td>
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Californa OELs (California Code of Regulations, Title 8, Section 5155. Airborne Contaminants)

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<td>Methyl methacrylate</td>
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Australia: OELs

<table>
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<tr>
<th>components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>208 mg/m³</td>
</tr>
</tbody>
</table>
8.2. Engineering controls
   Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)
   Respiratory protection: In case ventilation is insufficient, wear respiratory protection. Use a half facepiece
   respirator (with gollges) or full face-piece respirator (without goggles) filtered with
   organic vapor pouch.
   Hand protection: Not required under suitable use as setting the pouch on the printer. However, in case
   of direct contact to ink, use protective gloves. Recommended impervious gloves is
   butyl rubber glove.
   Eye protection: Not required under suitable use as setting the pouch on the printer. However, in
   case of direct contact to ink, wear safety glasses or chemical splash goggles.
   Skin protection: Not required under suitable use as setting the pouch on the printer. However, in
   case of direct contact to ink, wear protective clothing.
   General hygiene measures: Wash hands after handling. In case contact with clothing, wash before reuse.
   Do not eat, drink or smoke in handling or storage area.

9. Physical and Chemical Properties
   Appearance: Magenta Liquid
   Odor: Slightly
   pH: No data available
   Boiling point: No data available
   Flash point: 71 deg.C
   Flammability(solid,gas): Not applicable
   Explosive properties: None
   Oxidizing properties: No data available
   Vapor pressure: No data available
   Specific Gravity (g/cm³, 20°C): No data available
   Solubility: No data available
   Water Solubility: Lightly soluble
   Partition coefficient: n-octanol/water: No data available
   Viscosity: No data available
   Vapor density: No data available
   Evaporation rate: No data available
   Melting point: No data available
   Volatile organic compounds (VOC) content: 890 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity
   10.1. Reactivity: Stable under normal temperature
   10.2. Possibility of hazardous reactions: No data available
   10.3. Chemical stability: Physically stable under an ambient temperature or lower.
   10.4. Conditions to avoid: If it is heated, the container could explode to be broken down. Do not
   subject the container to static electricity.
   10.5. Incompatible materials: This product should not mix with strong oxidants and high-pressure gases.
   10.6. Hazardous decomposition products: Toxic gases such as CO and NOx will be generated during combustion.
11. Toxicological Information

Acute toxicity:

- Diethylene glycol diethyl ether
  - LD50 (oral-rat) 4790 mg/kg
  - LD50 (skin-rat) No data available

- γ-butyrolactone
  - LD50 (oral-rat) 1580 mg/kg
  - LD50 (skin-marmot) 5600 mg/kg

Skin corrosion/irritation: No data available
Causes skin irritation. (Diethylene glycol diethyl ether)

Serious eye damage/eye irritation: No data available
Causes serious eye damage. (γ-butyrolactone)

Respiratory or skin sensitisation: No data available
Germ cell mutagenicity: No data available
Reproductive toxicity: No data available

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

STOT-single exposure: No data available
STOT-repeated exposure: No data available
Aspiration hazard: No data available

12. Ecological Information

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation/Accumulation: No data available
Mobility in environment media: No data available
Other adverse effects: No data available

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.6. Special precautions for user:
Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code:
Not regulated
15. Regulatory Information

EU Information:
Chemical Safety Assessment according to (EC)1907/2006:
This product has not carried out any Chemical Safety Assessment yet.

US Information:
Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.
Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section 12(b) export notification requirements.

California Proposition 65: Not regulated

SARA TITLE III:
Section 313:
Diethylene glycol diethyl ether (Chemical Category N230)
Triethylene glycol monobutyl ether (Chemical Category N230)

Australia Information:
Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System
Health - 3 , Flammable - 2 , Reactivity - 0
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

The information in this Safety Data Sheet (SDS) is believed to be correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.
1. Product and Company Identification

Product name: TrueVIS INK, TR-YE

Manufacture: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone: + 81-53-484-1224
Fax: + 81-53-484-1226

Importer/Supplier: Roland DGA Corporation
Address: 15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone: 949-727-2100
Fax: 949-727-2112
Emergency telephone: 949-727-2100

Use of the product: Inkjet Printing
Date of issue: 28 December, 2015

2. Hazard Identification

2.1 Emergency Overview:
Appearance and odor: Yellow liquid and slight odor

This product is classified as dangerous according to GHS.

- Flammable liquids Category 4
- Acute toxicity - oral Category 5
- Skin corrosion/irritation Category 2
- Eye damage/irritation Category 1

GHS label elements, including precautionary statements
Pictogram

Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
Contains methyl methacrylate. May produce an allergic reaction.
Precautionary statement(s)

Prevention
Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
Wear protective gloves/protective clothing/eye protection/face protection.

Response
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/physician if you feel unwell.

Storage
Store in a well-ventilated place. Keep cool.

2.2. OSHA regulatory status
This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

2.3. Other hazards
Potential Health Effects:
Eyes: Causes severe eye injury which may persist for several days.
Skin: Contact with skin may cause irritation, swelling or redness.
Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion: May cause upset stomach.
Chronic Health Hazards: None Known.
Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

See section 11 for more information.

2.4. Potential environmental effects
See section 12 for Ecological information.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Composition</th>
<th>CAS No.</th>
<th>% By Weight</th>
<th>Classification HCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>112-36-7</td>
<td>65-75</td>
<td>Skin Irr. 2: H315</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>96-48-0</td>
<td>5-15</td>
<td>Acute Tox. 4: H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3: H336</td>
</tr>
<tr>
<td>Triethylene glycol monobutyl ether</td>
<td>143-22-6</td>
<td>1-10</td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>80-62-6</td>
<td>&lt;0.3</td>
<td>Flam. Liq. 2: H225</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3: H335</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irr. 2: H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1: H317</td>
</tr>
</tbody>
</table>
4. First Aid Measures

4.1. First aid procedures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.

Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians

May cause skin and eye irritation. Excessive inhalation of mist will cause respiratory irritation.

5. Fire Fighting Measures

5.1. Flammable properties:


Flash Point: 71 deg.C

5.2. Extinguishing media

Suitable extinguishing media:
- Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:
- No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture
- Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters
- Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental Release Measures

General:
- Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. Absorb spill with sand or earth then place in a chemical waste container.

6.1. Personal precautions

- Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

6.2. Environmental precautions

- Wipe off spillage. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

- Dike spilled product.

6.4. Methods for Clean-up

- Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.
6.5. Other information
   No information

6.6. Spill or leak statements by type of chemical
   Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill
   with inert sand, then place in suitable container. For large spills; use water spray to disperse vapors and dilute
   spill to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage
7.1. Handling
   Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children
   and do not drink. Do not dismantle container. Make sure pouch is dry before insertion into printer housing.

7.2. Storage
   Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product
   with oxidizing agents or explosives.

8. Exposure Controls/Personal Protection
8.1. Exposure Guidelines
   Occupational Exposure Limits:

   EU:
<table>
<thead>
<tr>
<th>components</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>50ppm</td>
<td>100ppm</td>
</tr>
</tbody>
</table>

   DNEL(Derived No Effect Level)
<table>
<thead>
<tr>
<th>components</th>
<th>Long term exposure</th>
<th>Short term exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>50.05mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>130mg/m³</td>
<td>958mg/m³</td>
</tr>
</tbody>
</table>

   REACH Toxicological Information (Workers - Hazard via inhalation route)

   US:
<table>
<thead>
<tr>
<th>components</th>
<th>OSHA:PEL</th>
<th>ACGIH:TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>100ppm</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>416mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

   California OELs (California Code of Regulations, Title 8, Section 5155. Airborne Contaminants)
<table>
<thead>
<tr>
<th>components</th>
<th>PEL</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>5ppm, 33mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>50ppm, 205mg/m³</td>
<td>100ppm, 410mg/m³</td>
</tr>
</tbody>
</table>

   Australia: OELs
<table>
<thead>
<tr>
<th>components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>208 mg/m³</td>
</tr>
</tbody>
</table>
8.2. Engineering controls
Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)
Respiratory protection: In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with goggles) or full face-piece respirator (without goggles) filtered with organic vapor pouch.

Hand protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, use protective gloves. Recommended impervious gloves is butyl rubber glove.

Eye protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.

Skin protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear protective clothing.

General hygiene measures: Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Yellow Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Slightly</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>71 deg.C</td>
</tr>
<tr>
<td>Flammability(solid,gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>None</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity (g/cm³, 20℃)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Lightly soluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Volatile organic compounds (VOC) content</td>
<td>890 gram/liter (maximum value)</td>
</tr>
</tbody>
</table>

9.2. Other information: No information

10. Stability and Reactivity

10.1. Reactivity: Stable under normal temperature

10.2. Possibility of hazardous reactions: No data available

10.3. Chemical stability: Physically stable under an ambient temperature or lower.

10.4. Conditions to avoid: If it is heated, the container could explode to be broken down. Do not subject the container to static electricity.

10.5. Incompatible materials: This product should not mix with strong oxidants and high-pressure gases.

10.6. Hazardous decomposition products: Toxic gases such as CO and NOx will be generated during combustion.
11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether
LD50 (oral-rat) 4790 mg/kg
LD50 (skin-rat) No data available

γ-butyrolactone
LD50 (oral-rat) 1580 mg/kg
LD50 (skin-marmot) 5600 mg/kg

Skin corrosion/irritation: No data available
Causes skin irritation. (Diethylene glycol diethyl ether)

Serious eye damage/eye irritation: No data available
Causes serious eye damage. (γ-butyrolactone)

Respiratory or skin sensitisation: No data available

Germ cell mutagenicity: No data available

Reproductive toxicity: No data available

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

STOT-single exposure: No data available
STOT-repeated exposure: No data available
Aspiration hazard: No data available

12. Ecological Information

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation/Accumulation: No data available
Mobility in environment media: No data available
Other adverse effects: No data available

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.6. Special precautions for user:
Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code:
Not regulated
15. Regulatory Information

EU Information:
Chemical Safety Assessment according to (EC)1907/2006:
This product has not carried out any Chemical Safety Assessment yet.

US Information:
Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.
Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section 12(b) export notification requirements.

California Proposition 65: Not regulated

SARA TITLE III:
Section 313:
- Diethylene glycol diethyl ether (Chemical Category N230)
- Triethylene glycol monobutyl ether (Chemical Category N230)

Australia Information:
Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System
Health - 3, Flammable - 2, Reactivity - 0
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

The information in this Safety Data Sheet (SDS) is believed to be correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.
Safety Data Sheet

1. Product and Company Identification
Product name: TrueVIS INK, TR-BK

Manufacture: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone: +81-53-484-1224
Fax: +81-53-484-1226

Importer/Supplier: Roland DGA Corporation
Address: 15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone: 949-727-2100
Fax: 949-727-2112
Emergency telephone: 949-727-2100

Use of the product: Inkjet Printing
Date of issue: 28 December, 2015

2. Hazard Identification
2.1 Emergency Overview:
Appearance and odor: Black liquid and slight odor

This product is classified as dangerous according to GHS.
- Flammable liquids: Category 4
- Acute toxicity - oral: Category 5
- Skin corrosion/irritation: Category 2
- Eye damage/irritation: Category 1

GHS label elements, including precautionary statements
- Pictogram

Signal word(s): Danger
Hazard statement(s): Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
Contains methyl methacrylate. May produce an allergic reaction.
Precautionary statement(s)

Prevention  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
Wear protective gloves/protective clothing/eye protection/face protection.

Response  
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/physician if you feel unwell.

Storage  
Store in a well-ventilated place. Keep cool.

2.2. OSHA regulatory status

This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

2.3. Other hazards

Potential Health Effects:

| Eyes | Causes severe eye injury which may persist for several days. |
| Skin | Contact with skin may cause irritation, swelling or redness. |
| Inhalation | Exposure to vapors (mist) will cause respiratory irritation and anesthesia. |
| Ingestion | May cause upset stomach. |
| Chronic Health Hazards | None Known. |
| Carcinogenicity | The product contains Carbon black. IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans). |

See section 11 for more information.

2.4. Potential environmental effects

See section 12 for Ecological information.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Composition</th>
<th>CAS No.</th>
<th>% By Weight</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>112-36-7</td>
<td>65-75</td>
<td>Skin Irrit. 2: H315</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>96-48-0</td>
<td>5-15</td>
<td>Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336</td>
</tr>
<tr>
<td>Triethylene glycol monobutyl ether</td>
<td>143-22-6</td>
<td>1-10</td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td>Carbon black</td>
<td>-</td>
<td>1-10</td>
<td>Not classified as hazardous</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>80-62-6</td>
<td>&lt;0.3</td>
<td>Flam. Liq. 2: H225 STOT SE 3: H335 Skin Irrit. 2: H315 Skin Sens. 1: H317</td>
</tr>
</tbody>
</table>
4. First Aid Measures
4.1. First aid procedures
   Eyes:  In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
   Skin:  In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.
   Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
   Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians
May cause skin and eye irritation. Excessive inhalation of mist will cause respiratory irritation.

5. Fire Fighting Measures
5.1. Flammable properties:
   Flash Point: 71 deg.C

5.2. Extinguishing media
   Suitable extinguishing media:
   Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid
   Unsuitable extinguishing media:
   No information

5.3. Protection of fire fighters
   Special hazards arising from the substance or mixture
   Toxic and irritating fumes and/or gases may generate by combustion.

   Protective equipment and precautions for firefighters
   Wear self-contained breathing apparatus (SCBA) and full protective equipment.
   Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental Release Measures
General:
Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. Absorb spill with sand or earth then place in a chemical waste container.

6.1. Personal precautions
   Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

6.2. Environmental precautions
   Wipe off spillage. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment
   Dike spilled product.

6.4. Methods for Clean-up
   Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.
6.5. Other information
No information

6.6. Spill or leak statements by type of chemical
Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill with inert sand, then place in suitable container. For large spills; use water spray to disperse vapors and dilute spill to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage
7.1. Handling
Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure pouch is dry before insertion into printer housing.

7.2. Storage
Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product with oxidizing agents or explosives.

8. Exposure Controls/Personal Protection
8.1. Exposure Guidelines
Occupational Exposure Limits:

| EU: | | | |
|---|---|---|
| components | TWA | STEL |
| Methyl methacrylate | 50ppm | 100ppm |

DNEL (Derived No Effect Level)

<table>
<thead>
<tr>
<th>components</th>
<th>Long term exposure</th>
<th>Short term exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>50.05mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>130mg/m³</td>
<td>958mg/m³</td>
</tr>
</tbody>
</table>

REACH Toxicological Information (Workers - Hazard via inhalation route)

| US: | | | |
|---|---|---|
| components | OSHA:PEL | ACGIH:TLV |
| Carbon black | 3.5mg/m³ | 3.5mg/m³ |
| Methyl methacrylate | 100ppm | 416mg/m³ |

California OELs (California Code of Regulations, Title 8, Section 5155. Airborne Contaminants)

<table>
<thead>
<tr>
<th>components</th>
<th>PEL</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>5ppm, 33mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Carbon black</td>
<td>3.5mg/m³</td>
<td>3.5mg/m³</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>50ppm, 205mg/m³</td>
<td>100ppm, 410mg/m³</td>
</tr>
</tbody>
</table>

Australia: OELs

<table>
<thead>
<tr>
<th>components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>3mg/m³</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>208 mg/m³</td>
</tr>
</tbody>
</table>
8.2. Engineering controls
Provisional general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

- **Respiratory protection:** In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with goggles) or full face-piece respirator (without goggles) filtered with organic vapor pouch.

- **Hand protection:** Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, use protective gloves. Recommended impervious gloves is butyl rubber glove.

- **Eye protection:** Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.

- **Skin protection:** Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear protective clothing.

- **General hygiene measures:** Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.

9. Physical and Chemical Properties

- **Appearance:** Black Liquid
- **Odor:** Slightly
- **pH:** No data available
- **Boiling point:** No data available
- **Flash point:** 71 deg.C
- **Flammability(solid, gas):** Not applicable
- **Explosive properties:** None
- **Oxidizing properties:** None
- **Vapor pressure:** No data available
- **Specific Gravity (g/cm³, 20°C):** No data available
- **Solubility:** No data available
- **Water Solubility:** Lightly soluble
- **Partition coefficient: n-octanol/water:** No data available
- **Viscosity:** No data available
- **Vapor density:** No data available
- **Evaporation rate:** No data available
- **Melting point:** No data available
- **Volatile organic compounds (VOC) content:** 890 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

10.1. Reactivity: Stable under normal temperature

10.2. Possibility of hazardous reactions: No data available

10.3. Chemical stability: Physically stable under an ambient temperature or lower.

10.4. Conditions to avoid: If it is heated, the container could explode to be broken down. Do not subject the container to static electricity.

10.5. Incompatible materials: This product should not mix with strong oxidants and high-pressure gases.

10.6. Hazardous decomposition products: Toxic gases such as CO and NOx will be generated during combustion.
11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether
LD50 (oral-rat) 4790 mg/kg
LD50 (skin-rat) No data available

γ-butyrolactone
LD50 (oral-rat) 1580 mg/kg
LD50 (skin-marmot) 5600 mg/kg

Skin corrosion/irritation: No data available
Causes skin irritation. (Diethylene glycol diethyl ether)

Serious eye damage/eye irritation: No data available
Causes serious eye damage. (γ-butyrolactone)

Respiratory or skin sensitisation: No data available
Germ cell mutagenicity: No data available
Reproductive toxicity: No data available

Carcinogenicity: The product contains Carbon black.
IARC evaluated printing ink as a Group 3 (Not classifiable as to carcinogenicity to humans).

STOT-single exposure: No data available
STOT-repeated exposure: No data available
Aspiration hazard: No data available

12. Ecological Information

Ecotoxicity: No data available
Persistence/Degradaility: No data available
Bioaccumulation/Accumulation: No data available
Mobility in environment media: No data available
Other adverse effects: No data available

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.6. Special precautions for user:
Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code:
Not regulated
15. Regulatory Information

EU Information:
Chemical Safety Assessment according to (EC)1907/2006:
This product has not carried out any Chemical Safety Assessment yet.

US Information:
Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.
Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section 12(b) export notification requirements.

California Proposition 65: Not regulated

SARA TITLE III:
Section 313:
Diethylene glycol diethyl ether (Chemical Category N230)
Triethylene glycol monobutyl ether (Chemical Category N230)

Australia Information:
Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System
Health - 3, Flammable - 2, Reactivity - 0
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

The information in this Safety Data Sheet (SDS) is believed to be correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.
Safety Data Sheet

1. Product and Company Identification
Product name: TrueVIS INK, TR-LC

Manufacture: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
JAPAN
Phone: +81-53-484-1224
Fax: +81-53-484-1226

Importer/Supplier: Roland DGA Corporation
Address: 15363 Barranca Parkway Irvine, CA 92618-2201
U.S.A.
Phone: 949-727-2100
Fax: 949-727-2112

Emergency telephone: 949-727-2100

Use of the product: Inkjet Printing
Date of issue: 28 December, 2015

2. Hazard Identification
2.1 Emergency Overview:
Appearance and odor: Cyan liquid and slight odor

This product is classified as dangerous according to GHS.

- Flammable liquids: Category 4
- Acute toxicity - oral: Category 5
- Skin corrosion/irritation: Category 2
- Eye damage/irritation: Category 1

GHS label elements, including precautionary statements

Pictogram

Signal word(s): Danger

Hazard statement(s):
- Combustible liquid.
- May be harmful if swallowed.
- Causes skin irritation.
- Causes serious eye damage.

Contains methyl methacrylate. May produce an allergic reaction.
Precautionary statement(s)

Prevention: Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell.

Storage: Store in a well-ventilated place. Keep cool.

2.2. OSHA regulatory status

This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

2.3. Potential health effects

Likely route of exposure: Eye, skin, inhalation or oral.

Eye: Causes severe eye injury which may persist for several days.

Skin: Contact with skin may cause irritation, swelling or redness.

Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.

Ingestion: May cause upset stomach.

Chronic Health Hazards: None Known.

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

See section 11 for more information.

2.4. Potential environmental effects

See section 12 for Ecological information.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Composition</th>
<th>CAS No.</th>
<th>% By Weight</th>
<th>Classification HCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>112-36-7</td>
<td>65-75</td>
<td>Skin Irrit. 2: H315</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>96-48-0</td>
<td>5-15</td>
<td>Acute Tox. 4: H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3: H336</td>
</tr>
<tr>
<td>Triethylene glycol monobutyl ether</td>
<td>143-22-6</td>
<td>1-10</td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>80-62-6</td>
<td>&lt;0.3</td>
<td>Flam. Liq. 2: H225</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3: H335</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2: H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1: H317</td>
</tr>
</tbody>
</table>
4. First Aid Measures

4.1. First aid procedures

**Eyes:**
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.

**Skin:**
In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.

**Inhalation:**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**Ingestion:**
If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians
May cause skin and eye irritation. Excessive inhalation of mist will cause respiratory irritation.

5. Fire Fighting Measures

5.1. Flammable properties:
Flash Point: 71 deg.C

5.2. Extinguishing media
Suitable extinguishing media:
- Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:
- No information

5.3. Protection of fire fighters
Special hazards arising from the substance or mixture
- Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters
- Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental Release Measures

General:
- Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. Absorb spill with sand or earth then place in a chemical waste container.

6.1. Personal precautions
Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

6.2. Environmental precautions
Wipe off spillage. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment
Dike spilled product.

6.4. Methods for Clean-up
Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.
6.5. Other information
No information

6.6. Spill or leak statements by type of chemical
Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill with inert sand, then place in suitable container. For large spills; use water spray to disperse vapors and dilute spill to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage
7.1. Handling
Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure pouch is dry before insertion into printer housing.

7.2. Storage
Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product with oxidizing agents or explosives.

8. Exposure Controls/Personal Protection
8.1. Exposure Guidelines
Occupational Exposure Limits:

<table>
<thead>
<tr>
<th>EU:</th>
<th>components</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>50ppm</td>
<td>100ppm</td>
<td></td>
</tr>
</tbody>
</table>

DNEL(Derived No Effect Level)

<table>
<thead>
<tr>
<th>components</th>
<th>Long term exposure</th>
<th>Short term exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>50.05mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>130mg/m³</td>
<td>958mg/m³</td>
</tr>
</tbody>
</table>

REACH Toxicological Information (Workers - Hazard via inhalation route)

<table>
<thead>
<tr>
<th>US:</th>
<th>components</th>
<th>OSHA:PEL</th>
<th>ACGIH:TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>100ppm</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>416mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

California OELs (California Code of Regulations, Title 8, Section 5155. Airborne Contaminants)

<table>
<thead>
<tr>
<th>components</th>
<th>PEL</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>5ppm, 33mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>50ppm, 205mg/m³</td>
<td>100ppm, 410mg/m³</td>
</tr>
</tbody>
</table>

Australia: OELs

<table>
<thead>
<tr>
<th>components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>208 mg/m³</td>
</tr>
</tbody>
</table>
8.2. Engineering controls
  Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Respiratory protection: In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with goggles) or full face-piece respirator (without goggles) filtered with organic vapor pouch.

Hand protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, use protective gloves. Recommended impervious gloves is butyl rubber glove.

Eye protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.

Skin protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear protective clothing.

General hygiene measures: Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Cyan Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Slighty</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>71 deg.C</td>
</tr>
<tr>
<td>Flammability(solid,gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>None</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity (g/cm³, 20°C)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Lightly soluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Volatile organic compounds (VOC)</td>
<td>890 gram/liter (maximum value)</td>
</tr>
</tbody>
</table>

9.2. Other information: No information

10. Stability and Reactivity

10.1. Reactivity: Stable under normal temperature

10.2. Possibility of hazardous reactions: No data available

10.3. Chemical stability: Physically stable under an ambient temperature or lower.

10.4. Conditions to avoid: If it is heated, the container could explode to be broken down. Do not subject the container to static electricity.

10.5. Incompatible materials: This product should not mix with strong oxidants and high-pressure gases.

10.6. Hazardous decomposition products: Toxic gases such as CO and NOx will be generated during combustion.
11. Toxicological Information

Acute toxicity:

- Diethylene glycol diethyl ether
  - LD50 (oral-rat) 4790 mg/kg
  - LD50 (skin-rat) No data available

- γ-butyrolactone
  - LD50 (oral-rat) 1580 mg/kg
  - LD50 (skin-marmot) 5600 mg/kg

Skin corrosion/irritation: No data available
Causes skin irritation. (Diethylene glycol diethyl ether)

Serious eye damage/eye irritation: No data available
Causes serious eye damage. (γ-butyrolactone)

Respiratory or skin sensitisation: No data available

Germ cell mutagenicity: No data available

Reproductive toxicity: No data available

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

12. Ecological Information

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation/Accumulation: No data available
Mobility in environment media: No data available
Other adverse effects: No data available

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA: Not regulated

14.6. Special precautions for user:
Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code:
Not regulated
15. Regulatory Information

EU Information:
Chemical Safety Assessment according to (EC)1907/2006:
This product has not carried out any Chemical Safety Assessment yet.

US Information:
Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.
Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section 12(b) export notification requirements.

California Proposition 65: Not regulated

SARA TITLE III:
Section 313:
Diethylene glycol diethyl ether (Chemical Category N230)
Triethylene glycol monobutyl ether (Chemical Category N230)

Australia Information:
Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System
Health - 3, Flammable - 2, Reactivity - 0
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

The information in this Safety Data Sheet (SDS) is believed to be correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.
Safety Data Sheet

1. Product and Company Identification

Product name: TrueVIS INK, TR-LM

Manufacture: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
JAPAN
Phone: + 81-53-484-1224
Fax: + 81-53-484-1226

Importer/Supplier: Roland DGA Corporation
Address: 15363 Barranca Parkway Irvine, CA 92618-2201
U.S.A.
Phone: 949-727-2100
Fax: 949-727-2112

Emergency telephone: 949-727-2100

Use of the product: Inkjet Printing
Date of issue: 28 December, 2015

2. Hazard Identification

2.1 Emergency Overview:
Appearance and odor: Magenta liquid and slight odor

This product is classified as dangerous according to GHS.
- Flammable liquids Category 4
- Acute toxicity - oral Category 5
- Skin corrosion/irritation Category 2
- Eye damage/irritation Category 1

GHS label elements, including precautionary statements

Pictogram

Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
Contains methyl methacrylate. May produce an allergic reaction.
Precautionary statement(s)
Prevention: Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/physician if you feel unwell.

Storage: Store in a well-ventilated place. Keep cool.

2.2. OSHA regulatory status
This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

2.3. Potential health effects
Likely route of exposure: Eye, skin, inhalation or oral.
Eye: Causes severe eye injury which may persist for several days.
Skin: Contact with skin may cause irritation, swelling or redness.
Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.

Ingestion: May cause upset stomach.
Chronic Health Hazards: None Known.
Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

See section 11 for more information.

2.4. Potential environmental effects
See section 12 for ecological information.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Composition</th>
<th>CAS No.</th>
<th>% By Weight</th>
<th>Classification</th>
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<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
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<td>65-75</td>
<td>Skin Irrit. 2: H315</td>
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<tr>
<td>γ-butyrolactone</td>
<td>96-48-0</td>
<td>5-15</td>
<td>Acute Tox. 4: H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3: H336</td>
</tr>
<tr>
<td>Triethylene glycol monobutyl ether</td>
<td>143-22-6</td>
<td>1-10</td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>80-62-6</td>
<td>&lt;0.3</td>
<td>Flam. Liq. 2: H225</td>
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<td></td>
<td></td>
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<td>STOT SE 3: H335</td>
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<td>Skin Sens. 1: H317</td>
</tr>
</tbody>
</table>
4. First Aid Measures
4.1. First aid procedures
   Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
   Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.
   Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
   Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians
   May cause skin and eye irritation. Excessive inhalation of mist will cause respiratory irritation.

5. Fire Fighting Measures
5.1. Flammable properties:
   Flash Point: 71 deg.C

5.2. Extinguishing media
   Suitable extinguishing media:
     Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid
   Unsuitable extinguishing media:
     No information

5.3. Protection of fire fighters
   Special hazards arising from the substance or mixture
     Toxic and irritating fume and/or gases may generate by combustion.

     Protective equipment and precautions for firefighters
     Wear self-contained breathing apparatus (SCBA) and full protective equipment.
     Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental Release Measures
6.1. Personal precautions
   Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

6.2. Environmental precautions
   Wipe off spillage. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment
   Dike spilled product.

6.4. Methods for Clean-up
   Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.
6.5. Other information
   No information

6.6. Spill or leak statements by type of chemical
   Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill
   with inert sand, then place in suitable container. For large spills; use water spray to disperse vapors and dilute spill
   to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage
7.1. Handling
   Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children
   and do not drink. Do not dismantle container. Make sure pouch is dry before insertion into printer housing.

7.2. Storage
   Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product
   with oxidizing agents or explosives.

8. Exposure Controls/Personal Protection
8.1. Exposure Guidelines
   Occupational Exposure Limits:

   EU:
   
<table>
<thead>
<tr>
<th>components</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>50ppm</td>
<td>100ppm</td>
</tr>
</tbody>
</table>

   DNEL(Derived No Effect Level)
   
<table>
<thead>
<tr>
<th>components</th>
<th>Long term exposure</th>
<th>Short term exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>50.05mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>130mg/m³</td>
<td>958mg/m³</td>
</tr>
</tbody>
</table>

   REACH Toxicological Information (Workers - Hazard via inhalation route)

   US:
   
<table>
<thead>
<tr>
<th>components</th>
<th>OSHA:PEL</th>
<th>ACGIH:TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>100ppm</td>
<td>416mg/m³</td>
</tr>
</tbody>
</table>

   California OELs (California Code of Regulations, Title 8, Section 5155. Airborne Contaminants)
   
<table>
<thead>
<tr>
<th>components</th>
<th>PEL</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>5ppm, 33mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>50ppm, 205mg/m³</td>
<td>100ppm, 410mg/m³</td>
</tr>
</tbody>
</table>

   Australia: OELs
   
<table>
<thead>
<tr>
<th>components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>208 mg/m³</td>
</tr>
</tbody>
</table>
8.2. Engineering controls
Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)
- Respiratory protection: In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with goggles) or full face-piece respirator (without goggles) filtered with organic vapor pouch.
- Hand protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, use protective gloves. Recommended impervious gloves is butyl rubber glove.
- Eye protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
- Skin protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear protective clothing.
- General hygiene measures: Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.

9. Physical and Chemical Properties
- Appearance: Magenta Liquid
- Odor: Slightly
- pH: No data available
- Boiling point: No data available
- Flash point: 71 deg.C
- Flammability(solid,gas): Not applicable
- Explosive properties: No data available
- Oxidizing properties: None
- Vapor pressure: No data available
- Specific Gravity (g/cm³, 20°C): No data available
- Solubility: No data available
- Water Solubility: Lightly soluble
- Partition coefficient: n-octanol/water: No data available
- Viscosity: No data available
- Vapor density: No data available
- Evaporation rate: No data available
- Melting point: No data available
- Volatile organic compounds (VOC) content: 890 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity
10.1. Reactivity: Stable under normal temperature
10.2. Possibility of hazardous reactions: No data available
10.3. Chemical stability: Physically stable under an ambient temperature or lower.
10.4. Conditions to avoid: If it is heated, the container could explode to be broken down. Do not subject the container to static electricity.
10.5. Incompatible materials: This product should not mix with strong oxidants and high-pressure gases.
10.6. Hazardous decomposition products: Toxic gases such as CO and NOx will be generated during combustion.
11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether
LD50 (oral-rat) 4790 mg/kg
LD50 (skin-rat) No data available

γ-butyrolactone
LD50 (oral-rat) 1580 mg/kg
LD50 (skin-marmot) 5600 mg/kg

Skin corrosion/irritation: No data available
Causes skin irritation. (Diethylene glycol diethyl ether)

Serious eye damage/eye irritation: No data available
Causes serious eye damage. (γ-butyrolactone)

Respiratory or skin sensitisation: No data available

Germ cell mutagenicity: No data available

Reproductive toxicity: No data available

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

STOT-single exposure: No data available
STOT-repeated exposure: No data available
Aspiration hazard: No data available

12. Ecological Information

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation/Accumulation: No data available
Mobility in environment media: No data available
Other adverse effects: No data available

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.6. Special precautions for user:
Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code:
Not regulated
15. Regulatory Information

EU Information:
Chemical Safety Assessment according to (EC)1907/2006:
This product has not carried out any Chemical Safety Assessment yet.

US Information:
Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.
Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section 12(b) export notification requirements.

California Proposition 65: Not regulated

SARA TITLE III:
Section 313:
- Diethylene glycol diethyl ether (Chemical Category N230)
- Triethylene glycol monobutyl ether (Chemical Category N230)

Australia Information:
Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System
- Health - 3 , Flammable - 2 , Reactivity - 0
  0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

The information in this Safety Data Sheet (SDS) is believed to be correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.
Safety Data Sheet

1. Product and Company Identification
Product name: TrueVIS INK, TR-LK

Manufacture: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
JAPAN
Phone: + 81-53-484-1224
Fax: + 81-53-484-1226

Importer/Supplier: Roland DGA Corporation
Address: 15363 Barranca Parkway Irvine, CA 92618-2201
U.S.A.
Phone: 949-727-2100
Fax: 949-727-2112

Emergency telephone: 949-727-2100

Use of the product: Inkjet Printing
Date of issue: 28 December, 2015

2. Hazard Identification
2.1 Emergency Overview:
Appearance and odor: Black liquid and slight odor

This product is classified as dangerous according to GHS.
Flammable liquids Category 4
Acute toxicity - oral Category 5
Skin corrosion/irritation Category 2
Eye damage/irritation Category 1

GHS label elements, including precautionary statements
Pictogram

Signal word(s) Danger
Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Contains methyl methacrylate. May produce an allergic reaction.
Precautionary statement(s)

Prevention Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.

Response IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell.

Storage Store in a well-ventilated place. Keep cool.

2.2. OSHA regulatory status
This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

2.3. Potential health effects
Likely route of exposure: Eye, skin, inhalation or oral.
Eye: Causes severe eye injury which may persist for several days.
Skin: Contact with skin may cause irritation, swelling or redness.
Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.

Ingestion: May cause upset stomach.
Chronic Health Hazards: None Known.
Carcinogenicity: The product contains Carbon black.
IARC evaluated printing ink as a Group3 (Not classifiable as to carcinogenicity to humans).

See section 11 for more information.

2.4. Potential environmental effects
See section 12 for Ecological information.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Composition</th>
<th>CAS No.</th>
<th>% By Weight</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>112-36-7</td>
<td>65-75</td>
<td>Skin Irr. 2: H315</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
<td>96-48-0</td>
<td>5-15</td>
<td>Acute Tox. 4: H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3: H336</td>
</tr>
<tr>
<td>Triethylene glycol monobutyl ether</td>
<td>143-22-6</td>
<td>1-10</td>
<td>Eye Dam. 1: H318</td>
</tr>
<tr>
<td>Carbon black</td>
<td>-</td>
<td>&lt;1</td>
<td>Not classified as hazardous</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>80-62-6</td>
<td>&lt;0.3</td>
<td>Flan. Liq. 2: H225</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3: H335</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irr. 2: H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1: H317</td>
</tr>
</tbody>
</table>
4. First Aid Measures
4.1. First aid procedures
Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.

Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians
May cause skin and eye irritation. Excessive inhalation of mist will cause respiratory irritation.

5. Fire Fighting Measures
5.1. Flammable properties:
Flash Point: 71 deg.C

5.2. Extinguishing media
Suitable extinguishing media:
- Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:
- No information

5.3. Protection of fire fighters
Special hazards arising from the substance or mixture
Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters
- Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental Release Measures
General: Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. Absorb spill with sand or earth then place in a chemical waste container.

6.1. Personal precautions
Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

6.2. Environmental precautions
Wipe off spillage. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment
Dike spilled product.

6.4. Methods for Clean-up
Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.
6.5. Other information
No information

6.6. Spill or leak statements by type of chemical
Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill with inert sand, then place in suitable container. For large spills; use water spray to disperse vapors and dilute spill to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage
7.1. Handling
Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure pouch is dry before insertion into printer housing.

7.2. Storage
Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product with oxidizing agents or explosives.

8. Exposure Controls/Personal Protection
8.1. Exposure Guidelines
Occupational Exposure Limits:

<table>
<thead>
<tr>
<th>EU:</th>
</tr>
</thead>
<tbody>
<tr>
<td>components</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DNEL(Derived No Effect Level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>components Long term exposure</td>
</tr>
<tr>
<td>Diethylene glycol diethyl ether</td>
</tr>
<tr>
<td>γ-butyrolactone</td>
</tr>
</tbody>
</table>

REACH Toxicological Information (Workers - Hazard via inhalation route)

<table>
<thead>
<tr>
<th>US:</th>
</tr>
</thead>
<tbody>
<tr>
<td>components</td>
</tr>
<tr>
<td>Carbon black</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

California OELs (California Code of Regulations, Title 8, Section 5155. Airborne Contaminants)

| components              | PEL        | STEL       |
| Diethylene glycol diethyl ether | 5ppm, 33mg/m³ | -         |
| Carbon black            | 3.5mg/m³   | 3.5mg/m³   |
| Methyl methacrylate     | 50ppm, 205mg/m³ | 100ppm, 410mg/m³ |

Australia: OELs

| components              | TWA        |
| Carbon black            | 3mg/m³     |
| Methyl methacrylate     | 208 mg/m³  |
8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Respiratory protection: In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with goggles) or full face-piece respirator (without goggles) filtered with organic vapor pouch.

Hand protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, use protective gloves. Recommended impervious gloves is butyl rubber glove.

Eye protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.

Skin protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear protective clothing.

General hygiene measures: Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.

9. Physical and Chemical Properties

Appearance: Black Liquid
Odor: Slightly
pH: No data available
Boiling point: No data available
Flash point: 71 deg.C
Flammability(solid,gas): Not applicable
Explosive properties: None
Oxidizing properties: None
Vapor pressure: No data available
Specific Gravity (g/cm³, 20°C): No data available
Solubility: No data available
Water Solubility: Lightly soluble
Partition coefficient: n-octanol/water: No data available
Viscosity: No data available
Vapor density: No data available
Evaporation rate: No data available
Melting point: No data available
Volatile organic compounds (VOC) content: 890 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

10.1. Reactivity: Stable under normal temperature
10.2. Possibility of hazardous reactions: No data available
10.3. Chemical stability: Physically stable under an ambient temperature or lower.
10.4. Conditions to avoid: If it is heated, the container could explode to be broken down. Do not subject the container to static electricity.
10.5. Incompatible materials: This product should not mix with strong oxidants and high-pressure gases.
10.6. Hazardous decomposition products: Toxic gases such as CO and NOx will be generated during combustion.
11. Toxicological Information

Acute toxicity:

- Diethylene glycol diethyl ether
  - LD₅₀ (oral-rat) 4790 mg/kg
  - LD₅₀ (skin-rat) No data available
- γ-butyrolactone
  - LD₅₀ (oral-rat) 1580 mg/kg
  - LD₅₀ (skin-marmot) 5600 mg/kg

Skin corrosion/irritation: No data available
Causes skin irritation. (Diethylene glycol diethyl ether)

Serious eye damage/eye irritation: No data available
Causes serious eye damage. (γ-butyrolactone)

Respiratory or skin sensitisation: No data available

Germ cell mutagenicity: No data available

Reproductive toxicity: No data available

Carcinogenicity: The product contains Carbon black.
IARC evaluated printing ink as a Group 3 (Not classifiable as to carcinogenicity to humans).

STOT-single exposure: No data available
STOT-repeated exposure: No data available
Aspiration hazard: No data available

12. Ecological Information

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation/Accumulation: No data available
Mobility in environment media: No data available
Other adverse effects: No data available

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.
14. Transport Information
14.1. UN Class/UN Number:
   ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.2. UN proper shipping name:
   ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.3. Transport hazard class(es):
   ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.4. Packing group:
   ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.5. Environmental hazards:
   ADR/ADG/DOT, IMDG, or IATA: Not regulated
14.6. Special precautions for user:
   Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code: Not regulated

15. Regulatory Information
   EU Information:
      Chemical Safety Assessment according to (EC)1907/2006:
      This product has not carried out any Chemical Safety Assessment yet.
   US Information:
      Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory. Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section 12(b) export notification requirements.
    California Proposition 65: Not regulated
    SARA TITLE III:
      Section 313:
      Diethylene glycol diethyl ether (Chemical Category N230)
      Triethylene glycol monobutyl ether (Chemical Category N230)
   Australia Information:
      Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information
   NFPA 704: Hazard Rating System
      Health - 3, Flammable - 2, Reactivity - 0
      0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard
   The information in this Safety Data Sheet (SDS) is believed to be correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.
Safety Data Sheet

1. Product and Company Identification
Product name: TrueVIS INK, TR-CL

Manufacture: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
JAPAN
Phone: + 81-53-484-1224
Fax: + 81-53-484-1226

Importer/Supplier: Roland DGA Corporation
Address: 15363 Barranca Parkway Irvine, CA 92618-2201
U.S.A.
Phone: 949-727-2100
Fax: 949-727-2112
Emergency telephone: 949-727-2100

Use of the product: Inkjet Printing
Date of issue: 28 December, 2015

2. Hazard Identification
2.1 Emergency Overview:
Appearance and odor: Clear liquid and slight odor

This product is classified as dangerous according to GHS.
Flammable liquids Category 4
Skin corrosion/irritation Category 2

GHS label elements, including precautionary statements
Pictogram

Signal word(s) Warning

Hazard statement(s) Combustible liquid.
Causes skin irritation.

Precautionary statement(s)
Prevention Keep away from flames and hot surfaces. — No smoking.
Wear protective gloves/protective clothing/eye protection/face protection.

Response IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.

Storage Store in a well-ventilated place. Keep cool.
2.2. OSHA regulatory status
   This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

2.3. Potential health effects
   Likely route of exposure: Eye, skin, inhalation or oral.
   Eyes: Contact with eye may be mildly irritating.
   Skin: Contact with skin may cause irritation, swelling or redness.
   Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
   Ingestion: May cause upset stomach.
   Chronic Health Hazards: None Known.
   Carcinogenicity: None of the ingredients in this product is listed by IARC as a carcinogen.

   See section 11 for more information.

2.4. Potential environmental effects
   See section 12 for Ecological information.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Composition</th>
<th>CAS No.</th>
<th>% By Weight</th>
<th>Classification HCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene glycol monomethyl ether</td>
<td>34590-94-8</td>
<td>35-45</td>
<td>Not classified as hazardous</td>
</tr>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>112-36-7</td>
<td>35-45</td>
<td>Skin Irrit. 2: H315</td>
</tr>
<tr>
<td>Trialkylene glycol monoalkyl ether</td>
<td>C.B.I.</td>
<td>15-25</td>
<td>Not classified as hazardous</td>
</tr>
</tbody>
</table>

4. First Aid Measures
4.1. First aid procedures
   Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
   Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.
   Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
   Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians
   May cause skin and eye irritation. Excessive inhalation of mist will cause respiratory irritation.
5. Fire Fighting Measures

5.1. Flammable properties:
   - Flash Point: about 76 deg.C

5.2. Extinguishing media
   - Suitable extinguishing media:
     - Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid
   - Unsuitable extinguishing media:
     - No information

5.3. Protection of fire fighters
   - Special hazards arising from the substance or mixture
     - Toxic and irritating fume and/or gases may generate by combustion.

   - Protective equipment and precautions for firefighters
     - Wear self-contained breathing apparatus (SCBA) and full protective equipment.
     - Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental Release Measures

General:
   - Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. Absorb spill with sand or earth then place in a chemical waste container.

6.1. Personal precautions
   - Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

6.2. Environmental precautions
   - Wipe off spillage. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment
   - Dike spilled product.

6.4. Methods for Clean-up
   - Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.5. Other information
   - No information

6.6. Spill or leak statements by type of chemical
   - Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill with inert sand, then place in suitable container. For large spills; use water spray to disperse vapers and dilute spill to a nonflamable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage

7.1. Handling
   - Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure pouch is dry before insertion into printer housing.

7.2. Storage
   - Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product with oxidizing agents or explosives.
8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:

EU:

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene glycol monomethyl ether</td>
<td>308mg/m³, 50ppm</td>
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DNEL (Derived No Effect Level)

<table>
<thead>
<tr>
<th>Components</th>
<th>Long term exposure</th>
<th>Short term exposure</th>
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<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>50.05mg/m³</td>
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REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA:PEL</th>
<th>ACGIH:TLV</th>
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<tbody>
<tr>
<td>Dipropylene glycol monomethyl ether</td>
<td>TWA: 600mg/m³, 100ppm TWA: 100ppm, 606 mg/m³ STEL: 150ppm, 909 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

California OELs (California Code of Regulations, Title 8, Section 5155. Airborne Contaminants)

<table>
<thead>
<tr>
<th>Components</th>
<th>PEL</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>5ppm, 33mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Dipropylene glycol monomethyl ether</td>
<td>TWA: 600mg/m³, 100ppm TWA: 100ppm, 60mg/m³ STEL: 150ppm, 909 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Australia: OELs

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene glycol monomethyl ether</td>
<td>308mg/m³, 50ppm</td>
</tr>
</tbody>
</table>

8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Respiratory protection: In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with goggles) or full face-piece respirator (without goggles) filtered with organic vapor pouch.

Hand protection: Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, use protective gloves. Recommended impervious gloves is butyl rubber glove.

Eye protection: Not required under suitable use as setting the pouch on the printer. However, in case of bottle container, wear safety glasses or chemical splash goggles.

Skin protection: Not required under suitable use as setting the pouch on the printer. However, in case of bottle container, wear protective clothing.

General hygiene measures: Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.
9. Physical and Chemical Properties

Appearance: Clear Liquid  
Odor: Slightly  
PH: No data available  
Boiling point: No data available  
Flash point: 76 deg.C  
Flammability(solid,gas): No data available  
Explosive properties: No data available  
Oxidizing properties: None  
Vapor pressure: No data available  
Specific Gravity (g/cm³, 20°C): No data available  
Solubility: No data available  
Water Solubility: Soluble  
Partition coefficient: n-octanol/water: No data available  
Viscosity: No data available  
Vapor density: No data available  
Evaporation rate: No data available  
Melting point: No data available  
Volatile organic compounds (VOC) content: 980.0 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

10.1. Reactivity: No reactivity under normal temperature  
10.2. Possibility of hazardous reactions: Not expected  
10.3. Chemical stability: Stable under normal temperature  
10.4. Conditions to avoid: High and freezing temperatures  
10.5. Incompatible materials: Oxidizers and explosives  
10.6. Hazardous decomposition products: None under normal temperature

11. Toxicological Information

Acute toxicity:  
Diethylene glycol diethyl ether  
LD50 (oral-rat) 4790 mg/kg  
LD50 (skin-rat) No data available

Skin corrosion/irritation: No data available  
Causes skin irritation. (Diethylene glycol diethyl ether)

Serious eye damage/eye irritation: No data available

Respiratory or skin sensitisation: No data available

Germ cell mutagenicity: No data available

Reproductive toxicity: No data available

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

STOT-single exposure: No data available

STOT-repeated exposure: No data available

Aspiration hazard: No data available
12. Ecological Information

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation/Accumulation: No data available
Mobility in environment media: No data available
Other adverse effects: No data available

13. Disposal Considerations

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.6. Special precautions for user:
Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code:
Not regulated

15. Regulatory Information

EU Information:
Chemical Safety Assessment according to (EC)1907/2006:
This product has not carried out any Chemical Safety Assessment yet.

US Information:
Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.
Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section 12(b) export notification requirements.

California; Proposition 65: Not regulated

SARA TITLE III:
Section 313:
Diethylene glycol diethyl ether (Chemical Category N230)
Trialkylene glycol monoalkyl ether (Chemical Category N230)

Australia Information:
Hazardous statement: Classified as hazardous according to NOHSC criteria.
16. Other Information

NFPA 704: Hazard Rating System

- Health: 1
- Flammability: 2
- Reactivity: 0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

The information in this Safety Data Sheet (SDS) is believed to be correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.