1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier:
- CLEANING LIQUID FOR SOL INK, SL-CL
- CLEANING LIQUID,(SL) 100ML
- CLEANING LIQUID,(SL) 500ML

1.2. Relevant identified uses of the substance or mixture and uses advised against
- Inkjet Printing

1.3. Details of the supplier of the safety data sheet
- Manufacture's name: 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

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture
- This product is classified as dangerous according to GHS.
  - Flammable liquids: Category 4
  - Skin corrosion/irritation: Category 2

2.2. GHS label elements, including precautionary statements
- Pictogram

  ![Pictogram](image)

  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.
2.3. Other hazards
Potential Health Effects:

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.

3. Composition/information on ingredients
Chemical nature: mixture

<table>
<thead>
<tr>
<th>Composition</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>EU registration No.</th>
<th>% By Weight</th>
<th>Classification EC No. 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene glycol monomethyl ether</td>
<td>34590-94-8</td>
<td>252-104-2</td>
<td>N/A for the moment</td>
<td>40-50</td>
<td>Not classified as hazardous</td>
</tr>
<tr>
<td>Diethylene glycol diethyl ether</td>
<td>112-36-7</td>
<td>203-963-7</td>
<td>01-2119969946-13-0000</td>
<td>35-45</td>
<td>Skin Irrit. 2: H315</td>
</tr>
<tr>
<td>Triethylene glycol monomethyl ether</td>
<td>112-35-6</td>
<td>203-962-1</td>
<td>N/A for the moment</td>
<td>20-30</td>
<td>Not classified as hazardous</td>
</tr>
</tbody>
</table>

*For the full text of the H-Statements mentioned in this Section, see Section 16.

4. First aid measures
4.1. Description of first aid measures
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. Most important symptoms and effects, both acute and delayed
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.

4.3. Indication of any immediate medical attention and special treatment needed
No information
5. Firefighting measures
5.1. Extinguishing media
   Suitable extinguishing media:
   Water spray, dry chemical, carbon dioxide or foam
   Unsuitable extinguishing media:
   No information

5.2. Special hazards arising from the substance or mixture
   Combustible liquid under Hazard Communication Standard (HCS, U.S.A)
   Flash Point: about 71 deg.C (closed cup)

5.3. Advice 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, protective equipment and emergency procedures
   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 and material for containment and cleaning up
   Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.4. Reference to other sections
   Refer to “Section 8 Exposure controls/ personal protection” and “Section 13 Disposal consideration” as appropriate.

7. Handling and storage
7.1. Precautions for safe handling
   Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink. Do not dismantle container.

7.2. Conditions for safe storage, including any incompatibilities
   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.

7.3. Specific end use(s):
   Inkjet printing
8. Exposure controls/ personal protection

8.1. Control parameters

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>
</tr>
</tbody>
</table>

DNEL

<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>
</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>Dipropylene glycol monomethyl ether</td>
<td>TWA: 600mg/m³, 100ppm</td>
<td>TWA: 100ppm, 606 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 150ppm, 909 mg/m³</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. Exposure controls:

Occupational exposure control: Control the airborne concentrations below the exposure limits. Use only with adequate ventilation.

Personal protective equipment:

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

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

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.

Environmental exposure control: Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>Clear Liquid</td>
</tr>
<tr>
<td>Odor:</td>
<td>Slightly</td>
</tr>
<tr>
<td>pH:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point:</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point:</td>
<td>about 71 deg.C (closed cup)</td>
</tr>
<tr>
<td>Flammability(solid, gas):</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties:</td>
<td>Explosive limits: 1.3~10.4%/v% (Dipropylene glycol monomethyl ether)</td>
</tr>
<tr>
<td>Oxidizing properties:</td>
<td>None</td>
</tr>
<tr>
<td>Vapor pressure:</td>
<td>No data available</td>
</tr>
</tbody>
</table>
CLEANING LIQUID FOR SOL INK, SL-CL
CLEANING LIQUID (SL) 100ML
CLEANING LIQUID (SL) 500ML

Relative density: No data available
Solubility: No data available
Water Solubility: Soluble
Partition coefficient: n-octanol/water: No data available
Viscosity: No data available
Vapor density: Greater than 1 (air=1)
Evaporation rate: No data available
Melting point: No data available

9.2. Other information: No information

10. Stability and reactivity
10.1. Reactivity: No reactivity under normal temperature
10.2. Chemical stability: Stable under normal temperature
10.3. Possibility of hazardous reactions: Not expected
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

*Based on toxicology data of chemically similar material
11.1. Information on toxicological effects
Routes Of Overexposure: Eye, skin, inhalation, and oral
Acute toxicity:
- Oral LD₅₀ >2500mg/kg(Rat)*
- Dermal LD₅₀ >2000mg/kg(Rat)*
- Inhalant LC₅₀ No data available
Skin corrosion/irritation: Mild irritant (Rabbit, OECD404)*
Serious eye damage/eye irritation: Mild irritant (Rabbit, OECD405)*
Respiratory or skin sensitisation: Non-sensitiser (LLNA, OECD 429)*
Germ cell mutagenicity: Negative (by Ames Test)*
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: Overexposure of eye may be mildly irritating.
Overexposure of skin may cause irritation and in some people swelling and redness.
Inhalation may result in respiratory irritation and anesthesia.
Ingestion may cause an upset stomach.

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

12. Ecological information
12.1. Toxicity: No data available
12.2. Persistence and degradability: No data available
12.3. Bioaccumulative potential: No data available
12.4. Mobility in soil: No data available
12.5. Results of PBT and vPvB assessment: Has not carried out PBT and vPvB assessment.
12.6. Other adverse effects: No data available

13. Disposal considerations
13.1. Waste treatment methods:
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 monomethyl ether (Chemical Category N230)

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

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

16. Other Information
List of relevant H-Statements:
H315 Causes skin irritation.

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.