

## Safety Data Sheet

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

#### 1.1. Product identifier

ECO-SOL MAX, ESL3-MG  
ECO-SOL MAX, ESL3-4MG

#### 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

Phone: + 81-53-484-1224

FAX: + 81-53-484-1226

E-mail:

Revised date: 19-Jul-2019

#### 1.4. Emergency telephone:

### 2. Hazard identification

#### 2.1. Classification of the substance or mixture

This product is classified as hazardous according to GHS.

|                                   |             |
|-----------------------------------|-------------|
| Flammable liquids                 | Category 4  |
| Acute toxicity (oral)             | Category 5  |
| Skin corrosion/irritation         | Category 2  |
| Serious eye damage/eye irritation | Category 1  |
| Reproductive toxicity             | Category 1B |

#### 2.2. GHS label elements, including precautionary statements

##### Pictogram(s)



##### Signal word

Danger

##### Hazard Statement(s):

Combustible liquid.  
May be harmful if swallowed.  
Causes skin irritation.  
Causes serious eye damage.  
May damage fertility or the unborn child.

**Precautionary Statement(s):**

|            |                                                                                                                                                                                                                                                                                                                             |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prevention | Do not handle until all safety precautions have been read and understood.<br>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.<br>No smoking.                                                                                                                                              |
| Response   | Wear protective gloves/protective clothing/eye protection/face protection.<br>IF ON SKIN: Wash with plenty of soap and water.<br>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>IF exposed or concerned: Get medical advice/attention. |

**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, allergic sensitization.                                                             |
| Inhalation:             | Exposure to vapors (mist) may be harmful to the unborn child and at the risk of impaired fertility and irritate nose, throat/respiratory system. |
| Ingestion:              | May cause injury of mouth, throat, and stomach.                                                                                                  |
| Chronic Health Hazards: | Repeated skin contact may cause a persistent irritation or dermatitis.                                                                           |
| Carcinogenicity:        | None of the ingredients in this ink is listed by IARC as a carcinogen. (1, 2A and 2B)                                                            |
| Others:                 | No information.                                                                                                                                  |

**3. Composition/information on ingredients**

Chemical nature: mixture

| Composition                          | CAS No.   | EC No.    | EU registration No. | % By Weight | Classification<br>EC No.1272/2008        |
|--------------------------------------|-----------|-----------|---------------------|-------------|------------------------------------------|
| Colorant                             | C. B. I.  | C. B. I.  | N/A for the moment  | 1-5         | Not classified as hazardous              |
| Diethylene glycol diethyl ether      | 112-36-7  | 203-963-7 | 01-2119969946-13    | 55-65       | Skin Irrit. 2: H315                      |
| gamma-butyrolactone                  | 96-48-0   | 202-509-5 | 01-2119471839-21    | <20         | Acute Tox. 4: H302<br>Eye Damage 1: H318 |
| Tetraethylene glycol dimethyl ether  | 143-24-8  | 205-594-7 | 01-2119958965-16    | 10-20       | Repr. 1B: H360                           |
| Tetraethylene glycol monobutyl ether | 1559-34-8 | 216-322-1 | 01-2120768763-41    | 1-5         | Eye Irrit. 2: H319                       |

† C. B. I. : Confidential Business Information

‡ 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 several 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:** Causes severe eye injury which may persist for several days.
- Skin:** Contact with skin may cause irritation, swelling or redness, allergic sensitization.
- Inhalation:** Exposure to vapors (mist) may be harmful to the unborn child and at the risk of impaired fertility and irritate nose, throat/respiratory system.
- Ingestion:** May cause injury of mouth, throat, and 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:

Dry chemical, Foam, Carbon dioxide, Dry sand, Loaded stream in spray.

Unsuitable extinguishing media:

Water, High-pressure water jet.

#### **5.2. Special hazards arising from the substance or mixture**

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.

Flash Point: approximately 71deg.C (closed Cup)

#### **5.3. Advice for firefighters**

Wear special chemical protective clothing and positive pressure self-contained breathing apparatus (SCBA). Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Decontaminate or discard any clothing that may contain chemical residues. Applying direct water may be dangerous because fire may expand to surroundings.

### **6. Accidental release measures**

#### **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.

### 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.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed. Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product with metals, amines, free radical initiators, oxidising agents.

### 7.3 Specific end use(s): Inkjet Printing

## 8. Exposure controls/ personal protection

### 8.1. Control parameters

Occupational Exposure Limits:

Derived No-Effect Level (DNEL)

Diethylene glycol diethyl ether:

[Long term exposure] 50.05 mg/m<sup>3</sup>

[Short term exposure] no hazard identified

gamma-butyrolactone:

[Long term exposure] 130 mg/m<sup>3</sup>

[Short term exposure] 958 mg/m<sup>3</sup>

Tetraethylene glycol dimethyl ether:

[Long term exposure] 22 mg/m<sup>3</sup>

[Short term exposure] no hazard identified

### 8.2. Exposure controls

Appropriate engineering controls

Provide general and/or local exhaust ventilation.

Respiratory protection:

In case ventilation is insufficient, employee must use NIOSH approved air purifying respiratory equipment. Use a half facepiece respirator (with goggles) or full face-piece respirator (without goggles) filtered with organic vapor cartridge. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self contained air supply. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Hand protection:**

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

**Eye protection:**

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

**Skin protection:**

Not required under suitable use as setting the ink on the printer. However, in case of direct contact to the ink, 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

|                                               |                                                           |
|-----------------------------------------------|-----------------------------------------------------------|
| Appearance:                                   | Magenta Liquid                                            |
| Odour:                                        | Slightly odour                                            |
| Odour threshold:                              | No data available                                         |
| pH:                                           | Not applicable                                            |
| Melting point/freezing point:                 | No data available                                         |
| Initial boiling point and boiling range:      | No data available                                         |
| Flash point:                                  | approximately 71deg.C (closed Cup)                        |
| Evaporation rate:                             | No data available                                         |
| Flammability (solid, gas)                     | Not applicable                                            |
| Upper/lower flammability or explosive limits: | Explosive limits: 0.3-16.0v/v% as $\gamma$ -Butyrolactone |
| Vapor pressure:                               | No data available                                         |
| Vapor density:                                | >1                                                        |
| Relative density:                             | 0.9-1.0                                                   |
| Solubility(ies):                              | soluble                                                   |
| Partition coefficient: n-octanol/water:       | No data available                                         |
| Auto-ignition temperature:                    | No data available                                         |
| Decomposition temperature:                    | No data available                                         |
| Viscosity:                                    | No data available                                         |
| Explosive properties:                         | No data available                                         |
| Oxidizing properties:                         | No data available                                         |
| Volatile organic compounds (VOC) content:     | 950 grams/liter                                           |

## 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:

Elevated temperatures/heat, UV light, when not in use.

### 10.5 Incompatible materials:

Avoid contact with acids, amines, free radical initiators, oxidizing agents.

### 10.6 Hazardous decomposition products:

Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.

## 11. Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity:

LD50 (Oral) >2500mg/kg(Rat)

LD50 (Dermal) >2000mg/kg(Rat)

#### Serious eye damage/eye irritation:

Causes serious eye damage.

- gamma-butyrolactone

Causes serious eye irritation.

- Tetraethylene glycol monobutyl ether

#### Skin corrosion/irritation:

Causes skin irritation.

- Diethylene glycol diethyl ether

#### Respiratory or skin sensitisation:

Non-sensitizer (LLNA, OECD429)

**Germ cell mutagenicity:**

Negative (by Ames Test)

**Reproductive toxicity:**

May damage fertility or the unborn child.

- Tetraethylene glycol dimethyl ether

**Carcinogenicity:**

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

**Specific target organ toxicity - single exposure, (STOT-SE):**

May cause drowsiness or dizziness.

- gamma-butyrolactone

**Specific target organ toxicity - repeat exposure, (STOT-RE):**

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

ADR/ADG/DOT, IMDG, or IATA : 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.

Australia Information:

Hazardous statement: Not 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:

(Reference for Section 3. "Composition/information on ingredients")

- H302: Harmful if swallowed.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H319: Causes serious eye irritation.
- H336: May cause drowsiness or dizziness.
- H360: May damage fertility or the unborn child.

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.