Safety Data Sheet

1. Product and Company Identification

Product name:

ECO-SOL MAX, ESL3-CY
ECO-SOL MAX, ESL3-4CY

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:	21 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
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2
Toxic to reproduction	Category 1B

GHS label elements, incliding precautionary statements

Pictogram

Signal word(s): 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. 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. IF exposed or concerned: Get medical advice/attention.

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) may be harmful to the unborn child and at the risk of impaired fertility.
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

Composition	CAS No.	% By Weight	Classification HCS
Diethylene glycol diethyl ether	112-36-7	55-65	Skin Irrit. 2: H315
γ-butyrolactone	96-48-0	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
Tetraethylene glycol dimethyl ether	143-24-8	10-20	Repr. 1B: H360

*C.B.I.: Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye	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:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media:

Water spray, dry chemical, CO_2 or foam.

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 cartridge 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: DNEL

components	Long term exposure	Short term exposure
Tetraethylene glycol dimethyl ether	22mg/m^3	-
γ-butyrolactone	130mg/m^3	958mg/m^3

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-

8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Eye/face protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
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.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear protective clothing.
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 cartridge.
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:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	Explosive limits: 0.3-16.0v/v% as γ-Butyrolactone
Oxidizing properties:	None
Vapor pressure:	No data available
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
Volatile organic compounds (VOC) content:	950.0 gram/liter (maximum value)

10. Stability and Reactivity

10.1. Reactivity:	No data available
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:	No data available

11. Toxicological Information

Acute toxicity:

Oral LD50	>2500mg/kg(Rat)
Dermal LD50	>2000mg/kg(Rat)
Inhalant LC50	No data available

Skin corrosion/irritation:	Non-irritant (Rabbit, OECD404)
Serious eye damage/eye irritation:	Non-irritant (Rabbit, OECD405)
Respiratory or skin sensitisation:	Non-sensitizer (LLNA, OECD429)
Germ cell mutagenicity:	Negative (by Ames Test)
Reproductive toxicity:	No data available Suspected of damaging fertility or the unborn child.(Tetraethylene glycol dimethyl ether and a similar chemical)
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

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
DOT/ADR/ADG, IMDG, or IATA : Not regulated

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

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

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

14.5. Environmental hazards
DOT/ADR/ADG, 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

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.
Product contains Tetraethylene glycol dimethyl ether that is subject to TSCA Section 5 proposed 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)

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: 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:

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

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:	21 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
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2
Toxic to reproduction	Category 1B

GHS label elements, incliding precautionary statements

Pictogram

Signal word(s): 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. 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. IF exposed or concerned: Get medical advice/attention.

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) may be harmful to the unborn child and at the risk of impaired fertility.
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

Composition	CAS No.	% By Weight	Classification HCS
Diethylene glycol diethyl ether	112-36-7	55-65	Skin Irrit. 2: H315
γ-butyrolactone	96-48-0	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
Tetraethylene glycol dimethyl ether	143-24-8	10-20	Repr. 1B: H360

4. First Aid Measures

4.1. First aid procedures

Eye	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:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media:

Water spray, dry chemical, CO_2 or foam.

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 cartridge 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: DNEL

components	Long term exposure	Short term exposure
Tetraethylene glycol dimethyl ether	22mg/m^3	-
γ-butyrolactone	130mg/m^3	958mg/m^3

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-

8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Eye/face protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
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.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear protective clothing.
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 cartridge.
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:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	Explosive limits: 0.3-16.0v/v% as γ-Butyrolactone
Oxidizing properties:	None
Vapor pressure:	No data available
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
Volatile organic compounds (VOC) content:	950.0 gram/liter (maximum value)

10. Stability and Reactivity

10.1. Reactivity:	No data available
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:	No data available

11. Toxicological Information

Acute toxicity:

Oral LD50	>2500mg/kg(Rat)
Dermal LD50	>2000mg/kg(Rat)
Inhalant LC50	No data available

Skin corrosion/irritation:	Non-irritant (Rabbit, OECD404)
Serious eye damage/eye irritation:	Non-irritant (Rabbit, OECD405)
Respiratory or skin sensitisation:	Non-sensitizer (LLNA, OECD429)
Germ cell mutagenicity:	Negative (by Ames Test)
Reproductive toxicity:	No data available Suspected of damaging fertility or the unborn child.(Tetraethylene glycol dimethyl ether and a similar chemical)
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

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
DOT/ADR/ADG, IMDG, or IATA : Not regulated

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

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

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

14.5. Environmental hazards
DOT/ADR/ADG, 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

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.

Product contains Tetraethylene glycol dimethyl ether that is subject to TSCA Section 5 proposed 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)

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: 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:
ECO-SOL MAX, ESL3-YE
ECO-SOL MAX, ESL3-4YE

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:	21 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
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2
Toxic to reproduction	Category 1B

GHS label elements, incliding precautionary statements

Pictogram

Signal word(s): 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. 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. IF exposed or concerned: Get medical advice/attention.

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) may be harmful to the unborn child and at the risk of impaired fertility.
Ingestion:	May cause upset stomach.
Chronic Health Hazards:	None Known.
Carcinogenicity:	The product contains Nickel compounds. 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

Composition	CAS No.	% By Weight	Classification HCS
Colorant (Nickel Compound)	C.B.I.	1-5	Not classified as hazardous
Diethylene glycol diethyl ether	112-36-7	55-65	Skin Irrit. 2: H315
γ-butyrolactone	96-48-0	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
Tetraethylene glycol dimethyl ether	143-24-8	10-20	Repr. 1B: H360

*C.B.I.: Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye	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:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media:

Water spray, dry chemical, CO_2 or foam.

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 cartridge 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: DNEL

components	Long term exposure	Short term exposure
Tetraethylene glycol dimethyl ether	22mg/m^3	-
γ-butyrolactone	130mg/m^3	958mg/m^3

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Nickel, metal and insoluble compounds (as Ni)	1mg/m^3	-

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

components	PEL
Nickel, insoluble compounds, as Ni	0.1mg/m^3
Diethylene glycol diethyl ether	5ppm, 33mg/m^3

8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Eye/face protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
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.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear protective clothing.
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 cartridge.
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:	Yellow Liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	Explosive limits: 0.3-16.0v/v% as γ-Butyrolactone
Oxidizing properties:	None
Vapor pressure:	No data available
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
Volatile organic compounds (VOC) content:	950.0 gram/liter (maximum value)

10. Stability and Reactivity

10.1. Reactivity:	No data available
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:	No data available

11. Toxicological Information

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:	Corrosive effects (Rabbit, OECD405)
Respiratory or skin sensitisation:	Non-sensitizer (LLNA, OECD429)
Germ cell mutagenicity:	Negative (by Ames Test)
Reproductive toxicity:	No data available Suspected of damaging fertility or the unborn child.(Tetraethylene glycol dimethyl ether and a similar chemical)
Carcinogenicity:	The product contains Nickel compounds. IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).
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

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
DOT/ADR/ADG, IMDG, or IATA : Not regulated

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

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

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

14.5. Environmental hazards
DOT/ADR/ADG, 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

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.

Product contains Tetraethylene glycol dimethyl ether that is subject to TSCA Section 5 proposed SNUR and to TSCA Section 12(b) export notification requirements.

California Proposition 65: Nickel Compounds

Wording of Risk and Safety Phrase: "WARNING: This product contains a chemical known to the State of California to cause cancer"

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)

Nickel compounds (Category Code N495)

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: 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:
ECO-SOL MAX, ESL3-BK
ECO-SOL MAX, ESL3-4BK

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:	21 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
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2
Toxic to reproduction	Category 1B

GHS label elements, incliding precautionary statements

Pictogram

Signal word(s): 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. 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. IF exposed or concerned: Get medical advice/attention.

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) may be harmful to the unborn child and at the risk of impaired fertility.
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

Composition	CAS No.	% By Weight	Classification HCS
Carbon black	1333-86-4	1-5	Not classified as hazardous
Diethylene glycol diethyl ether	112-36-7	55-65	Skin Irrit. 2: H315
γ-butyrolactone	96-48-0	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
Tetraethylene glycol dimethyl ether	143-24-8	10-20	Repr. 1B: H360

4. First Aid Measures

4.1. First aid procedures

Eye	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:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media:

Water spray, dry chemical, CO_2 or foam.

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 cartridge 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: DNEL

components	Long term exposure	Short term exposure
Tetraethylene glycol dimethyl ether	22mg/m^3	-
γ-butyrolactone	130mg/m^3	958mg/m^3

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Carbon black	3.5mg/m^3	3.5mg/m^3

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

components	PEL	STEL
Carbon black	3.5mg/m^3	-
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-

Australia: OELs

components	TWA	STEL
Carbon black	3mg/m^3	-

8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Eye/face protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
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.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear protective clothing.
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 cartridge.
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:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	Explosive limits: 0.3-16.0v/v% as γ-Butyrolactone
Oxidizing properties:	None
Vapor pressure:	No data available
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
Volatile organic compounds (VOC) content:	950.0 gram/liter (maximum value)

10. Stability and Reactivity

10.1. Reactivity:	No data available
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:	No data available

11. Toxicological Information

Acute toxicity:

Oral LD50	>2500mg/kg(Rat)
Dermal LD50	>2000mg/kg(Rat)
Inhalant LC50	No data available

Skin corrosion/irritation:	Non-irritant (Rabbit, OECD404)
Serious eye damage/eye irritation:	Moderate irritant (Rabbit, OECD405)
Respiratory or skin sensitisation:	Non-sensitizer (LLNA, OECD429)
Germ cell mutagenicity:	Negative (by Ames Test)
Reproductive toxicity:	No data available Suspected of damaging fertility or the unborn child.(Tetraethylene glycol dimethyl ether and a similar chemical)
Carcinogenicity:	The product contains Carbon black. IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).
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

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
DOT/ADR/ADG, IMDG, or IATA : Not regulated

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

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

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

14.5. Environmental hazards
DOT/ADR/ADG, 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

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.

Product contains Tetraethylene glycol dimethyl ether that is subject to TSCA Section 5 proposed 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)

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: 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:

ECO-SOL MAX, ESL3-LC
ECO-SOL MAX, ESL3-4LC

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:	21 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
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2
Toxic to reproduction	Category 1B

GHS label elements, incliding precautionary statements

Pictogram

Signal word(s): 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. 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. IF exposed or concerned: Get medical advice/attention.

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) may be harmful to the unborn child and at the risk of impaired fertility.
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

Composition	CAS No.	% By Weight	Classification HCS
Diethylene glycol diethyl ether	112-36-7	55-65	Skin Irrit. 2: H315
γ-butyrolactone	96-48-0	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
Tetraethylene glycol dimethyl ether	143-24-8	10-20	Repr. 1B: H360

4. First Aid Measures

4.1. First aid procedures

Eye	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:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media:

Water spray, dry chemical, CO_2 or foam.

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 cartridge 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: DNEL

components	Long term exposure	Short term exposure
Tetraethylene glycol dimethyl ether	22mg/m^3	-
γ-butyrolactone	130mg/m^3	958mg/m^3

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-

8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Eye/face protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
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.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear protective clothing.
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 cartridge.
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:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	Explosive limits: 0.3-16.0v/v% as γ-Butyrolactone
Oxidizing properties:	None
Vapor pressure:	No data available
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
Volatile organic compounds (VOC) content:	950.0 gram/liter (maximum value)

10. Stability and Reactivity

10.1. Reactivity:	No data available
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:	No data available

11. Toxicological Information

Acute toxicity:

Oral LD50	>2500mg/kg(Rat)
Dermal LD50	>2000mg/kg(Rat)
Inhalant LC50	No data available

Skin corrosion/irritation:	Non-irritant (Rabbit, OECD404)
Serious eye damage/eye irritation:	Non-irritant (Rabbit, OECD405)
Respiratory or skin sensitisation:	Non-sensitizer (LLNA, OECD429)
Germ cell mutagenicity:	Negative (by Ames Test)
Reproductive toxicity:	No data available Suspected of damaging fertility or the unborn child.(Tetraethylene glycol dimethyl ether and a similar chemical)
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

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
DOT/ADR/ADG, IMDG, or IATA : Not regulated

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

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

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

14.5. Environmental hazards
DOT/ADR/ADG, 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

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.

Product contains Tetraethylene glycol dimethyl ether that is subject to TSCA Section 5 proposed 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)

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: 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:

ECO-SOL MAX, ESL3-LM
ECO-SOL MAX, ESL3-4LM

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:	21 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
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2
Toxic to reproduction	Category 1B

GHS label elements, incliding precautionary statements

Pictogram

Signal word(s): 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. 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. IF exposed or concerned: Get medical advice/attention.

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) may be harmful to the unborn child and at the risk of impaired fertility.
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

Composition	CAS No.	% By Weight	Classification HCS
Diethylene glycol diethyl ether	112-36-7	55-65	Skin Irrit. 2: H315
γ-butyrolactone	96-48-0	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
Tetraethylene glycol dimethyl ether	143-24-8	10-20	Repr. 1B: H360

*C.B.I.: Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye	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:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media:

Water spray, dry chemical, CO_2 or foam.

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 cartridge 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: DNEL

components	Long term exposure	Short term exposure
Tetraethylene glycol dimethyl ether	22mg/m^3	-
γ-butyrolactone	130mg/m^3	958mg/m^3

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-

8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Eye/face protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
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.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear protective clothing.
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 cartridge.
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:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	Explosive limits: 0.3-16.0v/v% as γ-Butyrolactone
Oxidizing properties:	None
Vapor pressure:	No data available
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
Volatile organic compounds (VOC) content:	950.0 gram/liter (maximum value)

10. Stability and Reactivity

10.1. Reactivity:	No data available
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:	No data available

11. Toxicological Information

Acute toxicity:

Oral LD50	>2500mg/kg(Rat)
Dermal LD50	>2000mg/kg(Rat)
Inhalant LC50	No data available

Skin corrosion/irritation:	Non-irritant (Rabbit, OECD404)
Serious eye damage/eye irritation:	Non-irritant (Rabbit, OECD405)
Respiratory or skin sensitisation:	Non-sensitizer (LLNA, OECD429)
Germ cell mutagenicity:	Negative (by Ames Test)
Reproductive toxicity:	No data available Suspected of damaging fertility or the unborn child.(Tetraethylene glycol dimethyl ether and a similar chemical)
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

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
DOT/ADR/ADG, IMDG, or IATA : Not regulated

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

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

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

14.5. Environmental hazards
DOT/ADR/ADG, 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

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.

Product contains Tetraethylene glycol dimethyl ether that is subject to TSCA Section 5 proposed 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)

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: 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:
ECO-SOL MAX, ESL3-WH

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:	21 December, 2015

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor:	White liquid and slight odor

This product is classified as dangerous according to GHS.

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

GHS label elements, incliding precautionary statements

Pictogram

Signal word(s): 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. 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. IF exposed or concerned: Get medical advice/attention.

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) may be harmful to the unborn child and at the risk of impaired fertility.
Ingestion:	May cause upset stomach.
Chronic Health Hazards:	None Known.
Carcinogenicity:	The product contains Titanium dioxide. 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

Composition	CAS No.	% By Weight	Classification HCS
Titanium dioxide	13463-67-7	5 – 15	Not classified as hazardous
Diethylene glycol diethyl ether	112-36-7	45-55	Skin Irrit. 2: H315
γ-butyrolactone	96-48-0	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
Tetraethylene glycol dimethyl ether	143-24-8	10-20	Repr. 1B: H360

4. First Aid Measures

4.1. First aid procedures

Eye	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:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media:

Water spray, dry chemical, CO_2 or foam.

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 cartridge 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: DNEL

components	Long term exposure	Short term exposure
Tetraethylene glycol dimethyl ether	22mg/m^3	-
γ-butyrolactone	130mg/m^3	958mg/m^3

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Titanium dioxide	15mg/m^3 * *for total dust	10mg/m^3

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

components	TWA
Diethylene glycol diethyl ether	5ppm, 33mg/m^3

Australia: OELs

components	TWA	STEL
Titanium dioxide	10mg/m^3	-

8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Eye/face protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
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.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear protective clothing.
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 cartridge.
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:	White Liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	Explosive limits: 0.3-16.0v/v% as γ-Butyrolactone
Oxidizing properties:	None
Vapor pressure:	No data available
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
Volatile organic compounds (VOC) content:	1000.0 gram/liter (maximum value)

10. Stability and Reactivity

10.1. Reactivity:	No data available
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:	No data available

11. Toxicological Information

*Based on toxicology data of chemically similar material

Acute toxicity:

Oral LD50	>2500mg/kg(Rat)*
Dermal LD50	>2000mg/kg(Rat)*
Inhalant LC50	No data available

Skin corrosion/irritation:	Non-irritant (Rabbit, OECD404)*
Serious eye damage/eye irritation:	Non-irritant (Rabbit, OECD405)*
Respiratory or skin sensitisation:	Non-sensitizer (LLNA, OECD429)*
Germ cell mutagenicity:	Negative (by Ames Test)*
Reproductive toxicity:	No data available Suspected of damaging fertility or the unborn child.(Tetraethylene glycol dimethyl ether and a similar chemical)
Carcinogenicity:	The product contains Titanium dioxide. IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).
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

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
DOT/ADR/ADG, IMDG, or IATA : Not regulated

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

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

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

14.5. Environmental hazards
DOT/ADR/ADG, 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

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.

Product contains Tetraethylene glycol dimethyl ether that is subject to TSCA Section 5 proposed 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)

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: 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:
ECO-SOL MAX, ESL3-MT

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:	21 December, 2015

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor:	Silver liquid and slight odor

This product is classified as dangerous according to GHS.

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

GHS label elements, incliding precautionary statements

Pictogram

Signal word(s): 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. 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. IF exposed or concerned: Get medical advice/attention.

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) may be harmful to the unborn child and at the risk of impaired fertility.
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

Composition	CAS No.	% By Weight	Classification HCS
Diethylene glycol diethyl ether	112-36-7	65-75	Skin Irrit. 2: H315
Tetraethylene glycol dimethyl ether	143-24-8	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
γ-butyrolactone	96-48-0	5-15	Repr. 1B: H360

4. First Aid Measures

4.1. First aid procedures

Eye	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. Call a physician. Wash contaminated clothing before reuse.
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:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media:

Water spray, dry chemical, CO_2 or foam.

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 cartridge 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: DNEL

components	Long term exposure	Short term exposure
Tetraethylene glycol dimethyl ether	22mg/m^3	-
γ-butyrolactone	130mg/m^3	958mg/m^3

REACH Toxicological Information (Workers - Hazard via inhalation route)

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-

8.2. Engineering controls
Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Eye/face protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
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.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, wear protective clothing.
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 cartridge.
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:	Silver Liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	Explosive limits: 0.3-16.0v/v% as γ-Butyrolactone
Oxidizing properties:	None
Vapor pressure:	No data available
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
Volatile organic compounds (VOC) content:	950.0 gram/liter (maximum value)

10. Stability and Reactivity

10.1. Reactivity:	No data available
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:	No data available

11. Toxicological Information

*Based on toxicology data of chemically similar material

Acute toxicity:

Oral LD50	>2500mg/kg(Rat)*
Dermal LD50	>2000mg/kg(Rat)*
Inhalant LC50	No data available

Skin corrosion/irritation:	Non-irritant (Rabbit, OECD404)*
Serious eye damage/eye irritation:	Non-irritant (Rabbit, OECD405)*
Respiratory or skin sensitisation:	Non-sensitizer (LLNA, OECD429)*
Germ cell mutagenicity:	Negative (by Ames Test)*
Reproductive toxicity:	No data available Suspected of damaging fertility or the unborn child.(Tetraethylene glycol dimethyl ether and a similar chemical)
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

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
DOT/ADR/ADG, IMDG, or IATA : Not regulated

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

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

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

14.5. Environmental hazards
DOT/ADR/ADG, 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

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.
Product contains Tetraethylene glycol dimethyl ether that is subject to TSCA Section 5 proposed 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)

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: 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.