Safety Data Sheet

1. Product and Company Identification

Product name:
EJ INK, EJ-CY

Manufacture:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1226
Importer/Supplier:	Roland DGA Corporation
Address:	15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone:	949-727-2100
Fax:	949-727-2112
Emergency telephone:	949-727-2100
Use of the product:	Inkjet Printing
Date of issue:	28 December, 2015

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor: Cyan liquid and slight odor

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Skin corrosion/irritation	Category 2

GHS label elements, incliding precautionary statements

Pictogram

Signal word(s): Warning

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

Precautionary statement(s)

Prevention	Keep away from flames and hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Storage	Store in a well-ventilated place. Keep cool.

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

2.3. Potential health effects

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

See section 11 for more information.

3. Composition/Information on Ingredients

Composition	CAS No.	% By Weight	Classification HCS
Diethylene glycol diethyl ether	112-36-7	1-30	Skin Irrit. 2: H315
Glycol ether solvents	C.B.I.	45-80	Not classified as hazardous
ε-Caprolactone	502-44-3	<10	Eye Irrit. 2: H319

4. First Aid Measures

4.1. First aid procedures

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

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

5. Fire Fighting Measures

5.1. Flammable properties:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: 93 deg.C

5.2. Extinguishing media

Suitable extinguishing media:

Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:

No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

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

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

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

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:

EU:

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

DNEL

components	Long term exposure	Short term exposure
ε-Caprolactone	10.4mg/m^3	-
Diethylene glycol diethyl ether	50.05mg/m^3	-

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 606 mg/m^3 STEL: 150ppm, 909 mg/m^3

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 600 mg/m^3 STEL: 150ppm, 900 mg/m^3

Australia: OELs

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

8.2. Engineering controls

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

8.3. Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Cyan Liquid
Odor:	Slightly
pH:	No data available
Boiling point:	≧ 168 deg.C
Flash point:	93 deg.C
Flammability(solid,gas):	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Vapor pressure:	No data available
Specific Gravity	0.998 ± 0.05 (25℃)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.14 ± 0.5 cps(25℃)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available
Volatile organic compounds (VOC) content:	980 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

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

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether	
LD50 (oral-rat)	4790 mg/kg
LD50 (skin-rabbit)	6700 uL/kg

Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

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

14. Transport Information

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

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

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

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

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

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

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

15. Regulatory Information

EU Information:

Chemical Safety Assessment according to (EC)1907/2006:

This product has not carried out any Chemical Safety Assessment yet.

US Information:

Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.

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

California; Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)
Glycol ether solvents (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System

Health - 1 , 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:
EJ INK, EJ-MG

Manufacture:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1226
Importer/Supplier:	Roland DGA Corporation
Address:	15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone:	949-727-2100
Fax:	949-727-2112
Emergency telephone:	949-727-2100
Use of the product:	Inkjet Printing
Date of issue:	28 December, 2015

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor: Magenta liquid and slight odor

This product is classified as dangerous according to GHS.

Skin corrosion/irritation	Category 2
Eye damage/irritation	Category 2A

GHS label elements, including precautionary statements

Pictogram

Signal word(s): Warning

Hazard statement(s):
Causes skin irritation.
Causes serious eye irritation.

Precautionary statement(s)

Prevention	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 skin irritation occurs: Get medical advice/attention.
	If eye irritation persists: Get medical advice/attention.
	Take off contaminated clothing and wash before reuse.

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

2.3. Potential health effects

Likely route of exposure:	Eye, skin, inhalation or oral.
Eyes:	Causes severe eye injury which may persist for several days.
Skin:	Contact with skin may cause irritation, swelling or redness.
Inhalation:	Exposure to
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.

3. Composition/Information on Ingredients

Composition	CAS No.	% By Weight	Classification HCS
Diethylene glycol diethyl ether	112-36-7	1-30	Skin Irrit. 2: H315
Glycol ether solvents	C.B.I.	45-80	Not classified as hazardous
ε-Caprolactone	502-44-3	1-15	Eye Irrit. 2: H319
Propylene carbonate	108-32-7	1-10	Eye Irrit. 2: H319

4. First Aid Measures

4.1. First aid procedures

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

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

5. Fire Fighting Measures

5.1. Flammable properties:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: 96 deg.C

5.2. Extinguishing media

Suitable extinguishing media:

Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:

No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

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

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

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

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:

EU:

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

DNEL

components	Long term exposure	Short term exposure
ε-Caprolactone	10.4mg/m^3	-
Propylene carbonate	70.56 mg/m^3	-
Diethylene glycol diethyl ether	50.05mg/m^3	-

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 606 mg/m^3 STEL: 150ppm, 909 mg/m^3

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 600 mg/m^3 STEL: 150ppm, 900 mg/m^3

Australia: OELs

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

8.2. Engineering controls

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

8.3. Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Magenta Liquid
Odor:	Slightly
pH:	No data available
Boiling point:	≧ 168 deg.C
Flash point:	96 deg.C
Flammability(solid,gas):	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Vapor pressure:	No data available
Specific Gravity	1.00 ± 0.05 (25℃)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.66 ± 0.5 cps(25℃)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available
Volatile organic compounds (VOC) content:	980 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

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

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether	
LD50 (oral-rat)	4790 mg/kg
LD50 (skin-rabbit)	6700 uL/kg
Propylene carbonate	
LD50 (oral-rat)	>5000 mg/kg
LD50 (dermal-rabbit)	>2000 mg/kg

Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available Causes serious eye irritation. (Propylene carbonate)
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

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

14. Transport Information

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

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

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

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

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

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

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

15. Regulatory Information

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

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

California; Proposition 65: Not regulated

SARA TITLE III:
Section 313:
Diethylene glycol diethyl ether (Chemical Category N230)
Glycol ether solvents (Chemical Category N230)

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

16. Other Information

NFPA 704: Hazard Rating System

Health - 1 , Flammable - 1 , 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:
EJ INK, EJ-YE

Manufacture:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1226
Importer/Supplier:	Roland DGA Corporation
Address:	15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone:	949-727-2100
Fax:	949-727-2112
Emergency telephone:	949-727-2100
Use of the product:	Inkjet Printing
Date of issue:	28 December, 2015

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor: Yellow liquid and slight odor

This product is classified as dangerous according to GHS.

Skin corrosion/irritation	Category 2
Eye damage/irritation	Category 2A

GHS label elements, including precautionary statements

Pictogram

Signal word(s): Warning

Hazard statement(s):
Causes skin irritation.
Causes serious eye irritation.

Precautionary statement(s)

Prevention	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 skin irritation occurs: Get medical advice/attention.
	If eye irritation persists: Get medical advice/attention.
	Take off contaminated clothing and wash before reuse.

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

2.3. Potential health effects

Likely route of exposure:	Eye, skin, inhalation or oral.
Eyes:	Causes severe eye injury which may persist for several days.
Skin:	Contact with skin may cause irritation, swelling or redness.
Inhalation:	Exposure to
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.

3. Composition/Information on Ingredients

Composition	CAS No.	% By Weight	Classification HCS
Colorant	C.B.I.	1-5	Not classified as hazardous
Diethylene glycol diethyl ether	112-36-7	1-30	Skin Irrit. 2: H315
Glycol ether solvents	C.B.I.	45-80	Not classified as hazardous
ε-Caprolactone	502-44-3	1-15	Eye Irrit. 2: H319
Propylene carbonate	108-32-7	1-10	Eye Irrit. 2: H319

4. First Aid Measures

4.1. First aid procedures

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

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

5. Fire Fighting Measures

5.1. Flammable properties:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: 97 deg.C

5.2. Extinguishing media

Suitable extinguishing media:

Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:

No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

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

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

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

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:

EU:

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

DNEL

components	Long term exposure	Short term exposure
ε-Caprolactone	10.4mg/m^3	-
Propylene carbonate	70.56 mg/m^3	-
Diethylene glycol diethyl ether	50.05mg/m^3	-

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 606 mg/m^3 STEL: 150ppm, 909 mg/m^3
Nickel, metal and insoluble compounds (as Ni)	TWA: 1mg/m^3	-

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 600 mg/m^3 STEL: 150ppm, 900 mg/m^3
Nickel, insoluble compounds, as Ni	0.1mg/m^3	-

Australia: OELs

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

8.2. Engineering controls

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

8.3. Personal protective equipment (PPE)

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

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

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

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

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

9. Physical and Chemical Properties

Appearance:	Yellow Liquid
Odor:	Slightly
pH:	No data available
Boiling point:	≧ 168 deg.C
Flash point:	97 deg.C
Flammability(solid,gas):	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Vapor pressure:	No data available
Specific Gravity	0.995 ± 0.05 (25℃)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.52 ± 0.5 cps(25℃)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available
Volatile organic compounds (VOC) content:	980 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

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

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether	
LD50 (oral-rat)	4790 mg/kg
LD50 (skin-rabbit)	6700 uL/kg
Propylene carbonate	
LD50 (oral-rat)	>5000 mg/kg
LD50 (dermal-rabbit)	>2000 mg/kg

Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available Causes serious eye irritation. (Propylene carbonate)
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	The product contains Nickel compounds. IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).

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

12. Ecological Information

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

13. Disposal Considerations

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

14. Transport Information

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

15. Regulatory Information

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

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

California; Proposition 65: Nickel compounds
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)
Glycol ether solvents (Chemical Category N230)
Nickel compounds (Category Code N495)

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

16. Other Information

NFPA 704: Hazard Rating System

Health - 1 , Flammable - 1 , 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:
EJ INK, EJ-BK

Manufacture:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1226
Importer/Supplier:	Roland DGA Corporation
Address:	15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone:	949-727-2100
Fax:	949-727-2112
Emergency telephone:	949-727-2100
Use of the product:	Inkjet Printing
Date of issue:	28 December, 2015

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor:	Black liquid and slight odor

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Skin corrosion/irritation	Category 2
Eye damage/irritation	Category 2A

GHS label elements, including precautionary statements

Pictogram

Signal word(s)	Warning
Hazard statement(s)	Combustible liquid. Causes skin irritation. Causes serious eye irritation.

Precautionary statement(s)

Prevention	Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: 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. Other hazards

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

See section 11 for more information.

3. Composition/Information on Ingredients

Composition	CAS No.	EC No.	EU registration No.	% By Weight	Classification EC No. 1272/2008
Carbon black	C.B.I.	C.B.I.	N/A for the moment	1-5	Not classified as hazardous
Diethylene glycol diethyl ether	112-36-7	203-963-7	N/A for the moment	1-30	Skin Irrit. 2: H315
Glycol ether solvents	C.B.I.	C.B.I.	N/A for the moment	45-80	Not classified as hazardous
ε-Caprolactone	502-44-3	-	N/A for the moment	1-15	Eye Irrit. 2: H319
Propylene carbonate	108-32-7	-	N/A for the moment	1-10	Eye Irrit. 2: H319

4. First Aid Measures

4.1. First aid procedures

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

4.2. Note to physicians

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

5. Fire Fighting Measures

5.1. Flammable properties:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: 89 deg.C

5.2. Extinguishing media

Suitable extinguishing media:

Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:

No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

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

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

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

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:

EU:

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

DNEL

components	Long term exposure	Short term exposure
ε-Caprolactone	10.4mg/m^3	-
Propylene carbonate	70.56 mg/m^3	-
Diethylene glycol diethyl ether	50.05mg/m^3	-

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 606 mg/m^3 STEL: 150ppm, 909 mg/m^3
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
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 600 mg/m^3 STEL: 150ppm, 900 mg/m^3
Carbon black	3.5mg/m^3	3.5mg/m^3

Australia: OELs

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm
Carbon black	3mg/m^3

8.2. Engineering controls

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

8.3. Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Black Liquid
Odor:	Slightly
pH:	No data available
Boiling point:	≧ 168 deg.C
Flash point:	89 deg.C
Flammability(solid,gas):	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Vapor pressure:	No data available
Specific Gravity	1.00 ± 0.05 (25℃)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.51 ± 0.5 cps(25℃)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available
Volatile organic compounds (VOC) content:	980 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

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

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether	
LD50 (oral-rat)	4790 mg/kg
LD50 (skin-rabbit)	6700 uL/kg
Propylene carbonate	
LD50 (oral-rat)	>5000 mg/kg
LD50 (dermal-rabbit)	>2000 mg/kg

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

Serious eye damage/eye irritation: No data available
Causes serious eye irritation. (Propylene carbonate)

Respiratory or skin sensitisation: No data available

Germ cell mutagenicity: No data available

Reproductive toxicity: No data available

Carcinogenicity: The product contains Carbon black.
IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).

STOT-single exposure: No data available

STOT-repeated exposure: No data available

Aspiration hazard: No data available

12. Ecological Information

Ecotoxicity: No data available

Persistence/Degradability: No data available

Bioaccumulation/Accumulation: No data available

Mobility in environment media: No data available

Other adverse effects: No data available

13. Disposal Considerations

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

14. Transport Information

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

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

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

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

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

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

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

15. Regulatory Information

EU Information:

Chemical Safety Assessment according to (EC)1907/2006:

This product has not carried out any Chemical Safety Assessment yet.

US Information:

Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.

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

California; Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)
Glycol ether solvents (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System

Health - 1 , 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:
EJ INK, EJ-LC

Manufacture:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1226
Importer/Supplier:	Roland DGA Corporation
Address:	15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone:	949-727-2100
Fax:	949-727-2112
Emergency telephone:	949-727-2100
Use of the product:	Inkjet Printing
Date of issue:	28 December, 2015

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor:	Cyan liquid and slight odor

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Skin corrosion/irritation	Category 2

GHS label elements, including precautionary statements

Pictogram

Signal word(s)	Warning
Hazard statement(s)	Combustible liquid. Causes skin irritation.

Precautionary statement(s)

Prevention	Keep away from flames and hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Storage	Store in a well-ventilated place. Keep cool.

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

2.3. Other hazards

Likely route of exposure:	Eye, skin, inhalation or oral.
Eyes:	Causes severe eye injury which may persist for several days.
Skin:	Contact with skin may cause irritation, swelling or redness.
Inhalation:	Exposure to
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.

3. Composition/Information on Ingredients

Composition	CAS No.	% By Weight	Classification HCS
Diethylene glycol diethyl ether	112-36-7	1-30	Skin Irrit. 2: H315
Glycol ether solvents	C.B.I.	45-80	Not classified as hazardous
ε-Caprolactone	502-44-3	<10	Eye Irrit. 2: H319

4. First Aid Measures

4.1. First aid procedures

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

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

5. Fire Fighting Measures

5.1. Flammable properties:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: 86 deg.C

5.2. Extinguishing media

Suitable extinguishing media:

Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:

No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

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

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

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

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:

EU:

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

DNEL

components	Long term exposure	Short term exposure
2-Oxepanone	10.4mg/m^3	-
Diethylene glycol diethyl ether	50.05mg/m^3	-

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 606 mg/m^3 STEL: 150ppm, 909 mg/m^3

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 600 mg/m^3 STEL: 150ppm, 900 mg/m^3

Australia: OELs

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

8.2. Engineering controls

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

8.3. Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Cyan Liquid
Odor:	Slightly
pH:	No data available
Boiling point:	≧ 168 deg.C
Flash point:	86 deg.C
Flammability(solid,gas):	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Vapor pressure:	No data available
Specific Gravity	0.985 ± 0.05 (25℃)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.22 ± 0.5 cps(25℃)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available
Volatile organic compounds (VOC) content:	980 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

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

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether	
LD50 (oral-rat)	4790 mg/kg
LD50 (skin-rabbit)	6700 uL/kg

Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

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

14. Transport Information

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

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

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

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

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

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

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

15. Regulatory Information

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

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

California; Proposition 65: Not regulated

SARA TITLE III:
Section 313:
Diethylene glycol diethyl ether (Chemical Category N230)
Glycol ether solvents (Chemical Category N230)

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

16. Other Information

NFPA 704: Hazard Rating System

Health - 1 , 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:
EJ INK, EJ-LM

Manufacture:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1226
Importer/Supplier:	Roland DGA Corporation
Address:	15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone:	949-727-2100
Fax:	949-727-2112
Emergency telephone:	949-727-2100
Use of the product:	Inkjet Printing
Date of issue:	28 December, 2015

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor: Magenta liquid and slight odor

This product is classified as dangerous according to GHS.

Skin corrosion/irritation	Category 2
Eye damage/irritation	Category 2A

GHS label elements, including precautionary statements

Pictogram

Signal word(s): Warning

Hazard statement(s):
Combustible liquid.
Causes skin irritation.
Causes serious eye irritation.

Precautionary statement(s)

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

Response:
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: 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. Other hazards

Likely route of exposure:	Eye, skin, inhalation or oral.
Eyes:	Causes severe eye injury which may persist for several days.
Skin:	Contact with skin may cause irritation, swelling or redness.
Inhalation:	Exposure to
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.

3. Composition/Information on Ingredients

Composition	CAS No.	% By Weight	Classification HCS
Diethylene glycol diethyl ether	112-36-7	1-30	Skin Irrit. 2: H315
Glycol ether solvents	C.B.I.	45-80	Not classified as hazardous
ε-Caprolactone	502-44-3	1-15	Eye Irrit. 2: H319
Propylene carbonate	108-32-7	1-10	Eye Irrit. 2: H319

4. First Aid Measures

4.1. First aid procedures

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

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

5. Fire Fighting Measures

5.1. Flammable properties:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: 90 deg.C

5.2. Extinguishing media

Suitable extinguishing media:

Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:

No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

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

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:

EU:

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

DNEL

components	Long term exposure	Short term exposure
ε-Caprolactone	10.4mg/m^3	-
Propylene carbonate	70.56 mg/m³	-
Diethylene glycol diethyl ether	50.05mg/m^3	-

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 606 mg/m^3 STEL: 150ppm, 909 mg/m^3

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

components	PEL	STEL
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 600 mg/m^3 STEL: 150ppm, 900 mg/m^3

Australia: OELs

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

8.2. Engineering controls

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

8.3. Personal protective equipment (PPE)

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

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

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

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

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

9. Physical and Chemical Properties

Appearance:	Magenta Liquid
Odor:	Slightly
pH:	No data available
Boiling point:	≧ 168 deg.C
Flash point:	90 deg.C
Flammability(solid,gas):	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Vapor pressure:	No data available
Specific Gravity	0.996 ± 0.05 (25℃)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.37 ± 0.5 cps(25℃)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available
Volatile organic compounds (VOC) content:	980 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

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

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether	
LD50 (oral-rat)	4790 mg/kg
LD50 (skin-rabbit)	6700 uL/kg
Propylene carbonate	
LD50 (oral-rat)	>5000 mg/kg
LD50 (dermal-rabbit)	>2000 mg/kg

Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available Causes serious eye irritation. (Propylene carbonate)
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

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

14. Transport Information

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

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

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

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

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

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

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

15. Regulatory Information

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

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

California; Proposition 65: Not regulated

SARA TITLE III:
Section 313:
Diethylene glycol diethyl ether (Chemical Category N230)
Glycol ether solvents (Chemical Category N230)

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

16. Other Information

NFPA 704: Hazard Rating System

Health - 1 , 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:
EJ INK, EJ-LK

Manufacture:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1226
Importer/Supplier:	Roland DGA Corporation
Address:	15363 Barranca Parkway Irvine, CA 92618-2201 U.S.A.
Phone:	949-727-2100
Fax:	949-727-2112
Emergency telephone:	949-727-2100
Use of the product:	Inkjet Printing
Date of issue:	28 December, 2015

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor:	Black liquid and slight odor

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Skin corrosion/irritation	Category 2
Eye damage/irritation	Category 2A

GHS label elements, including precautionary statements

Pictogram

Signal word(s)	Warning
Hazard statement(s)	Combustible liquid. Causes skin irritation. Causes serious eye irritation.

Precautionary statement(s)

Prevention	Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: 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. Other hazards

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

See section 11 for more information.

3. Composition/Information on Ingredients

Composition	CAS No.	% By Weight	Classification HCS
Carbon black	C.B.I.	0.1-1.5	Not classified as hazardous
Diethylene glycol diethyl ether	112-36-7	1-30	Skin Irrit. 2: H315
Glycol ether solvents	C.B.I.	45-80	Not classified as hazardous
ε-Caprolactone	502-44-3	1-15	Eye Irrit. 2: H319
Propylene carbonate	108-32-7	1-10	Eye Irrit. 2: H319

4. First Aid Measures

4.1. First aid procedures

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

4.2. Note to physicians

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

5. Fire Fighting Measures

5.1. Flammable properties:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: 91 deg.C

5.2. Extinguishing media

Suitable extinguishing media:

Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:

No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

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

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.5. Other information

No information

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

7. Handling And Storage

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

7.2. Conditions for safe storage, including any incompatibilities
Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product with oxidizing agents or explosives.

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines
Occupational Exposure Limits:

EU:

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm

DNEL

components	Long term exposure	Short term exposure
ε-Caprolactone	10.4mg/m^3	-
Propylene carbonate	70.56 mg/m^3	-
Diethylene glycol diethyl ether	50.05mg/m^3	-

REACH Toxicological Information (Workers - Hazard via inhalation route)

US:

components	OSHA:PEL	ACGIH:TLV
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 606 mg/m^3 STEL: 150ppm, 909 mg/m^3
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
Diethylene glycol diethyl ether	5ppm, 33mg/m^3	-
Glycol ether solvents	TWA: 600mg/m^3, 100ppm	TWA: 100ppm, 600 mg/m^3 STEL: 150ppm, 900 mg/m^3
Carbon black	3.5mg/m^3	3.5mg/m^3

Australia: OELs

components	TWA
Glycol ether solvents	308mg/m^3, 50ppm
Carbon black	3mg/m^3

8.2. Engineering controls
Control the airborne concentrations below the exposure limits. Use only with adequate ventilation.

8.3. Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Black Liquid
Odor:	Slightly
pH:	No data available
Boiling point:	≧ 168 deg.C
Flash point:	91 deg.C
Flammability(solid,gas):	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Vapor pressure:	No data available
Specific Gravity	0.99 ± 0.05 (25℃)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.27 ± 0.5 cps(25℃)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available
Volatile organic compounds (VOC) content:	980 gram/liter (maximum value)

9.2. Other information: No information

10. Stability and Reactivity

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

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether	
LD50 (oral-rat)	4790 mg/kg
LD50 (skin-rabbit)	6700 uL/kg
Propylene carbonate	
LD50 (oral-rat)	>5000 mg/kg
LD50 (dermal-rabbit)	>2000 mg/kg

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

Serious eye damage/eye irritation: No data available
Causes serious eye irritation. (Propylene carbonate)

Respiratory or skin sensitisation: No data available

Germ cell mutagenicity: No data available

Reproductive toxicity: No data available

Carcinogenicity: The product contains Carbon black.
IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).

STOT-single exposure: No data available

STOT-repeated exposure: No data available

Aspiration hazard: No data available

12. Ecological Information

Ecotoxicity: No data available

Persistence/Degradability: No data available

Bioaccumulation/Accumulation: No data available

Mobility in environment media: No data available

Other adverse effects: No data available

13. Disposal Considerations

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

14. Transport Information

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

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

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

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

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

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

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

15. Regulatory Information

EU Information:

Chemical Safety Assessment according to (EC)1907/2006:

This product has not carried out any Chemical Safety Assessment yet.

US Information:

Toxic Substances Control Act (TSCA): All ingredients are listed on the TSCA Inventory.

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

California; Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)
Glycol ether solvents (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System

Health - 1 , 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.