

Safety Data Sheet

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

1.1. Product identifier:

EJ INK, EJ-CY

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

Inkjet Printing

1.3. Details of the supplier of the safety data sheet

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

E-mail Address:

Revision: 8 September, 2015

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids Category 4
Skin corrosion/irritation Category 2

2.2. GHS label elements, including precautionary statements

Pictogram



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.

Storage

Take off contaminated clothing and wash before reuse.
Store in a well-ventilated place. Keep cool.

2.3. Other hazards

Potential Health Effects:

Eyes: Contact with eye may be mildly irritating.
Skin: Contact with skin may cause irritation, swelling or redness.
Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion: May cause upset stomach.
Chronic Health Hazards: None Known.
Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	EC No.	EU registration No.	% By Weight	Classification EC No. 1272/2008
Colorant	C.B.I.	C.B.I.	N/A for the moment	1-5	Not classified as hazardous
Diethylene glycol diethyl ether	112-36-7	203-963-7	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	<10	Eye Irrit. 2: H319
Resin	C.B.I.	C.B.I.	N/A for the moment	1-5	Not classified as hazardous

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

4. First aid measures

4.1. Description of first aid measures

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

4.2. Most important symptoms and effects, both acute and delayed

Eyes: Contact with eye may be mildly irritating.
Skin: Contact with skin may cause irritation, swelling or redness.
Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion: May cause upset stomach.

4.3. Indication of any immediate medical attention and special treatment needed

No information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

No information

5.2. Special hazards arising from the substance or mixture

Combustible liquid under Hazard Communication Standard (HCS, U.S.A)

Flash Point: about 93 deg.C

5.3. Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental release measures

General:

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

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

Refer to "Section 8 Exposure controls/ personal protection" and "Section 13 Disposal consideration" as appropriate.

7. Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s):

Inkjet printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

EU:

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

Australia: OELs

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

8.2. Exposure controls:

Occupational exposure control:

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

Personal protective equipment:

Respiratory protection:

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

Hand protection:

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

Eye protection:

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

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

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°C)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.14 ± 0.5 cps(25°C)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

9.2. Other information: No information

10. Stability and reactivity

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

11. Toxicological information

11.1. Information on toxicological effects

Routes Of Overexposure:	Eye, skin, inhalation, and oral
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

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

13. Disposal considerations

13.1. Waste treatment methods:

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

14. Transport information

- 14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 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 applicable

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.**International Information:**

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

16. Other Information

List of relevant H-Statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

Safety Data Sheet

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

1.1. Product identifier:

EJ INK, EJ-MG

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

Inkjet Printing

1.3. Details of the supplier of the safety data sheet

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

E-mail Address:

Revision: 8 September, 2015

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

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

2.2. 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

Response

Wear protective gloves/protective clothing/eye protection/face protection.
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.

2.3. Other hazards

Potential Health Effects:

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

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	EC No.	EU registration No.	% By Weight	Classification EC No. 1272/2008
Colorant	C.B.I.	C.B.I.	N/A for the moment	1-5	Not classified as hazardous
Diethylene glycol diethyl ether	112-36-7	203-963-7	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
Resin	C.B.I.	C.B.I.	N/A for the moment	1-5	Not classified as hazardous

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

4. First aid measures

4.1. Description of first aid measures

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

4.2. Most important symptoms and effects, both acute and delayed

Eyes: 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.

- 4.3. Indication of any immediate medical attention and special treatment needed
No information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

No information

5.2. Special hazards arising from the substance or mixture

Combustible liquid under Hazard Communication Standard (HCS, U.S.A)

Flash Point: about 96 deg.C

5.3. Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental release measures

General:

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

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

Refer to "Section 8 Exposure controls/ personal protection" and "Section 13 Disposal consideration" as appropriate.

7. Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s):

Inkjet printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

EU:

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

Australia: OELs

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

8.2. Exposure controls:

Occupational exposure control:

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

Personal protective equipment:

Respiratory protection:

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

Hand protection:

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

Eye protection:

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

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

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°C)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.66 ± 0.5 cps(25°C)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

9.2. Other information: No information

10. Stability and reactivity

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

11. Toxicological information

11.1. Information on toxicological effects

Routes Of Overexposure:	Eye, skin, inhalation, and oral		
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

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

13. Disposal considerations**13.1. Waste treatment methods:**

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

14. Transport information**14.1. UN Class/UN Number:**

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

14.2. UN proper shipping name:

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

14.3. Transport hazard class(es):

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

14.4. Packing group:

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

14.5. Environmental hazards:

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

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 applicable

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.

International Information:

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

16. Other Information**List of relevant H-Statements:**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

Safety Data Sheet

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

1.1. Product identifier:

EJ INK, EJ-YE

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

Inkjet Printing

1.3. Details of the supplier of the safety data sheet

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

E-mail Address:

Revision: 8 September, 2015

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

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

2.2. 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

Response

Wear protective gloves/protective clothing/eye protection/face protection.
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.

2.3. Other hazards

Potential Health Effects:

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

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	EC No.	EU registration No.	% By Weight	Classification EC No. 1272/2008
Colorant	C.B.I.	C.B.I.	N/A for the moment	1-5	Not classified as hazardous
Diethylene glycol diethyl ether	112-36-7	203-963-7	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
Resin	C.B.I.	C.B.I.	N/A for the moment	1-5	Not classified as hazardous

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

4. First aid measures

4.1. Description of first aid measures

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

4.2. Most important symptoms and effects, both acute and delayed

Eyes: 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.

- 4.3. Indication of any immediate medical attention and special treatment needed
No information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

No information

5.2. Special hazards arising from the substance or mixture

Combustible liquid under Hazard Communication Standard (HCS, U.S.A)

Flash Point: about 97 deg.C

5.3. Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental release measures

General:

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

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

Refer to "Section 8 Exposure controls/ personal protection" and "Section 13 Disposal consideration" as appropriate.

7. Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s):

Inkjet printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

EU:

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	-

Australia: OELs

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

8.2. Exposure controls:

Occupational exposure control:

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

Personal protective equipment:

Respiratory protection:

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

Hand protection:

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

Eye protection:

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

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

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°C)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.52 ± 0.5 cps(25°C)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

9.2. Other information: No information

10. Stability and reactivity

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

11. Toxicological information

11.1. Information on toxicological effects

Routes Of Overexposure:	Eye, skin, inhalation, and oral		
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

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

13. Disposal considerations

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

14. Transport information

- | | |
|---|---|
| 14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA : | Not applicable |
| 14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA : | Not applicable |
| 14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA : | Not applicable |
| 14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA : | Not applicable |
| 14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA : | Not applicable |
| 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 applicable |

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.

International Information:

The product contains Nickel compounds.

IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).

16. Other Information

List of relevant H-Statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

Safety Data Sheet

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

1.1. Product identifier:

EJ INK, EJ-BK

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

Inkjet Printing

1.3. Details of the supplier of the safety data sheet

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

E-mail Address:

Revision: 8 September, 2015

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

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

2.2. 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.

2.3. Other hazards

Potential Health Effects:

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

3. Composition/information on ingredients

Chemical nature: mixture

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
Resin	C.B.I.	C.B.I.	N/A for the moment	1-5	Not classified as hazardous

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

4. First aid measures

4.1. Description of first aid measures

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

4.2. Most important symptoms and effects, both acute and delayed

Eyes:	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.

4.3. Indication of any immediate medical attention and special treatment needed

No information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

No information

5.2. Special hazards arising from the substance or mixture

Combustible liquid under Hazard Communication Standard (HCS, U.S.A)

Flash Point: 89 deg.C

5.3. Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental release measures

General:

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

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

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

7. Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s): Inkjet printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

EU:

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

Australia: OELs

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

8.2. Exposure controls:

Occupational exposure control:

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

Personal protective equipment:

Respiratory protection:

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

Hand protection:

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

Eye protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of bottle container, wear safety glasses or chemical splash goggles.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of bottle container, wear protective clothing.
Hygiene measures:	Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.
Environmental exposure control:	Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

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°C)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.51 ± 0.5 cps(25°C)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

9.2. Other information: No information

10. Stability and reactivity

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

11. Toxicological information

11.1. Information on toxicological effects

Routes Of Overexposure:	Eye, skin, inhalation, and oral	
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

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

13. Disposal considerations

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

14. Transport information

14.1. UN Class/UN Number: ADR/ADG/DOT, IMDG, or IATA :	Not applicable
14.2. UN proper shipping name: ADR/ADG/DOT, IMDG, or IATA :	Not applicable
14.3. Transport hazard class(es): ADR/ADG/DOT, IMDG, or IATA :	Not applicable
14.4. Packing group: ADR/ADG/DOT, IMDG, or IATA :	Not applicable
14.5. Environmental hazards: ADR/ADG/DOT, IMDG, or IATA :	Not applicable
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 applicable

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.

International Information:

The product contains Carbon black.

IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).

16. Other Information

List of relevant H-Statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

Safety Data Sheet

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

1.1. Product identifier:

EJ INK, EJ-LC

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

Inkjet Printing

1.3. Details of the supplier of the safety data sheet

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

E-mail Address:

Revision: 8 September, 2015

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids Category 4

Skin corrosion/irritation Category 2

2.2. GHS label elements, including precautionary statements

Pictogram



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.

Storage

Take off contaminated clothing and wash before reuse.
Store in a well-ventilated place. Keep cool.

2.3. Other hazards

Potential Health Effects:

Eyes: Contact with eye may be mildly irritating.
Skin: Contact with skin may cause irritation, swelling or redness.
Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion: May cause upset stomach.
Chronic Health Hazards: None Known.
Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	EC No.	EU registration No.	% By Weight	Classification EC No. 1272/2008
Colorant	C.B.I.	C.B.I.	N/A for the moment	0.1-2	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	<10	Eye Irrit. 2: H319
Resin	C.B.I.	C.B.I.	N/A for the moment	2-8	Not classified as hazardous

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

4. First aid measures

4.1. Description of first aid measures

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

4.2. Most important symptoms and effects, both acute and delayed

Eyes: Contact with eye may be mildly irritating.
Skin: Contact with skin may cause irritation, swelling or redness.
Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion: May cause upset stomach.

4.3. Indication of any immediate medical attention and special treatment needed

No information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

No information

5.2. Special hazards arising from the substance or mixture

Combustible liquid under Hazard Communication Standard (HCS, U.S.A)

Flash Point: about 86 deg.C

5.3. Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental release measures

General:

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

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

Refer to "Section 8 Exposure controls/ personal protection" and "Section 13 Disposal consideration" as appropriate.

7. Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s):

Inkjet printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

EU:

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

Australia: OELs

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

8.2. Exposure controls:

Occupational exposure control:

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

Personal protective equipment:

Respiratory protection:

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

Hand protection:

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

Eye protection:

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

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

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°C)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.22 ± 0.5 cps(25°C)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

9.2. Other information: No information

10. Stability and reactivity

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

11. Toxicological information

11.1. Information on toxicological effects

Routes Of Overexposure:	Eye, skin, inhalation, and oral	
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

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

13. Disposal considerations

13.1. Waste treatment methods:

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

14. Transport information

- 14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 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 applicable

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.**International Information:**

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

16. Other Information

List of relevant H-Statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

Safety Data Sheet

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

1.1. Product identifier:

EJ INK, EJ-LM

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

Inkjet Printing

1.3. Details of the supplier of the safety data sheet

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

E-mail Address:

Revision: 8 September, 2015

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

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

2.2. 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

Response

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

2.3. Other hazards

Potential Health Effects:

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

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	EC No.	EU registration No.	% By Weight	Classification EC No. 1272/2008
Colorant	C.B.I.	C.B.I.	N/A for the moment	0.1-2	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
Resin	C.B.I.	C.B.I.	N/A for the moment	2-8	Not classified as hazardous

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

4. First aid measures

4.1. Description of first aid measures

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

4.2. Most important symptoms and effects, both acute and delayed

Eyes: 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.

- 4.3. Indication of any immediate medical attention and special treatment needed
No information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

No information

5.2. Special hazards arising from the substance or mixture

Combustible liquid under Hazard Communication Standard (HCS, U.S.A)

Flash Point: about 90 deg.C

5.3. Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental release measures

General:

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

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

Refer to "Section 8 Exposure controls/ personal protection" and "Section 13 Disposal consideration" as appropriate.

7. Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s):

Inkjet printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

EU:

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

Australia: OELs

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

8.2. Exposure controls:

Occupational exposure control:

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

Personal protective equipment:

Respiratory protection:

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

Hand protection:

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

Eye protection:

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

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

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°C)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.37 ± 0.5 cps(25°C)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

9.2. Other information: No information

10. Stability and reactivity

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

11. Toxicological information

11.1. Information on toxicological effects

Routes Of Overexposure:	Eye, skin, inhalation, and oral		
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

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

13. Disposal considerations**13.1. Waste treatment methods:**

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

14. Transport information**14.1. UN Class/UN Number:**

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

14.2. UN proper shipping name:

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

14.3. Transport hazard class(es):

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

14.4. Packing group:

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

14.5. Environmental hazards:

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

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 applicable

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.

International Information:

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

16. Other Information**List of relevant H-Statements:**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

Safety Data Sheet

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

1.1. Product identifier:

EJ INK, EJ-LK

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

Inkjet Printing

1.3. Details of the supplier of the safety data sheet

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

E-mail Address:

Revision: 8 September, 2015

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

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

2.2. 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.

2.3. Other hazards

Potential Health Effects:

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

3. Composition/information on ingredients

Chemical nature: mixture

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	0.1-1.5	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
Resin	C.B.I.	C.B.I.	N/A for the moment	2-8	Not classified as hazardous

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

4. First aid measures

4.1. Description of first aid measures

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

4.2. Most important symptoms and effects, both acute and delayed

- | | |
|-------------|---|
| Eyes: | 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. |

4.3. Indication of any immediate medical attention and special treatment needed

No information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

No information

5.2. Special hazards arising from the substance or mixture

Combustible liquid under Hazard Communication Standard (HCS, U.S.A)

Flash Point: 91 deg.C

5.3. Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental release measures

General:

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

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

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

7. Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s): Inkjet printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

EU:

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

Australia: OELs

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

8.2. Exposure controls:

Occupational exposure control:	Control the airborne concentrations below the exposure limits. Use only with adequate ventilation.
Personal protective equipment:	
Respiratory protection:	In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with gollges) or full face-piece respirator (without goggles) filtered with organic vapor cartridge.
Hand protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of direct contact to ink, use protective gloves. Recommended impervious gloves is butyl rubber glove.
Eye protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of bottle container, wear safety glasses or chemical splash goggles.
Skin protection:	Not required under suitable use as setting the cartridge on the printer. However, in case of bottle container, wear protective clothing.
Hygiene measures:	Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.
Environmental exposure control:	Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

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°C)
Solubility:	No data available
Water Solubility:	Soluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	3.27 ± 0.5 cps(25°C)
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

9.2. Other information: No information

10. Stability and reactivity

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

11. Toxicological information**11.1. Information on toxicological effects**

Routes Of Overexposure:	Eye, skin, inhalation, and oral	
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

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

13. Disposal considerations**13.1. Waste treatment methods:**

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

14. Transport information

- 14.1. UN Class/UN Number:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.2. UN proper shipping name:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.3. Transport hazard class(es):
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.4. Packing group:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 14.5. Environmental hazards:
ADR/ADG/DOT, IMDG, or IATA : Not applicable
- 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 applicable

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.**International Information:**

The product contains Carbon black.

IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).

16. Other Information

List of relevant H-Statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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