

Material Safety Data Sheet

1. Identification of The Substance/Mixture and of The Company/Undertaking

1.1. Identification of the mixture: Dye-based Ink, FDY-BK

1.2. Use of the substance/mixture: Inkjet Printing

1.3. Company/undertaking identification

Manufacturer/Distributor: 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
 Revision: 29 October 2009
 E-mail address:

1.4. Emergency telephone:

2. Hazard Identification

2.1 Emergency Overview:

This ink does not meet the criteria for dangerous classification according to EU Directive 1999/45/EC.
 Ink component is a black liquid that may cause eye irritation.

2.2 Potential Health Effects:

Eyes: Ink contact with eye may be mildly irritating.
 Skin: Ink contact with skin may cause irritation, swelling or redness.
 Inhalation: Intentional exposure to ink vapors (mist) will cause respiratory irritation.
 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.

3. Composition/Information on Ingredients

This is an aqueous ink formulation

Ink Composition	CAS No.	EC No.	EU registration No.	% By Weight	EU Symbols	EU R-phrase	EU OELs	Remarks
Azo dye	Trade secret	Trade secret	Not available for the moment	<5	Xn	R62	-	-
Colorants	Trade secret	Trade secret	Not available for the moment	1-5	-	-	-	-
Triethanol amine	102-71-6	203-049-8	Not available for the moment	<1	-	-	-	-
Diethylene glycol	111-46-6	203-872-2	Not available for the moment	1-5	Xn	R22	-	-
Proprietary organic materials	Trade secret	Trade secret	Not available for the moment	1-5	-	-	-	-
DEGBE	112-34-5	203-961-6	Not available for the moment	about10	Xi	R36	See sec.8	-
Glycerols	Trade secret	Trade secret	Not available for the moment	about10	-	-	-	-
Water	7732-18-5	231-791-2	Exemption	balance	-	-	-	-

4. First Aid Measures

- 4.1 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.
- 4.2 Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse.
- 4.3 Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- 4.4 Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

5. Fire Fighting Measures

- 5.1 Flammability: Not Flammable
Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
- 5.2 Extinguishing Media: Dry chemical or carbon dioxide
- 5.3 Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- 5.4 Unusual Fire and Explosion Hazards: None.

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: Dike spill. Prevent liquid from entering sewers, waterways or low areas.
- 6.3 Methods for cleaning up: Soak up with sand or earth. Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

7. Handling And Storage

- 7.1 Handling: Avoid contact with eyes, skin and clothing. Keep out of reach of children and do not drink ink. Do not dismantle cartridge.
- 7.2 Storage: Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not store cartridges with oxidizing agents or explosives. **Make sure cartridge is dry before insertion into printer housing.**
- 7.3 Specific use(s): Not specified

8. Exposure Controls and Personal Protection

8.1. Exposure limit values:

EU:

components	The threshold limit	STEL
DEGBE (CAS No.112-34-5)	67.5mg/m ³ , 10ppm	101.2mg/m ³ , 15ppm

US:

components	OSHA:PEL	ACGIH:TLV
Glycerols (mist)	15mg/m ³	10mg/m ³

Australia: OELs

components	TWA	STEL
Diethylene glycol (CAS No.111-46-6)	100mg/m ³ , 23ppm	Not applicable

8.2 Exposure controls:

- 8.2.1 Occupational exposure control Proper ventilation, in prevention
- 8.2.1.1 Respiratory protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.2 Hand protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.3 Eye protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.4 Skin protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.2 Environmental exposure control Not established

9. Physical and Chemical Properties of Ink Formulation

9.1 General information

Appearance: Black Liquid
 Odor: Slightly

9.2 Important health, safety and environmental information

pH: about 8.5 at 20°C/ 68 °F
 Boiling point: No data available
 Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
 Flammability (solid, gas): None
 Explosive properties: None
 Oxidizing properties: None
 Vapor pressure: No data available
 Relative density: 1.07 at 20°C
 Water Solubility: Complete
 Solubility: No data available
 Partition coefficient: :n-octanol/water: No data available
 Viscosity: Less than 5 mPa·s
 Evaporation rate: No data available
 Vapor density: No data available

9.3 Other information

Melting point: No data available

10. Stability and Reactivity

Stability: Stable under normal temperature
 Hazardous polymerization: No data available

10.1 Conditions to avoid: High and freezing temperatures

10.2 Materials to avoid: Oxidizers and explosives

10.3 Hazardous decomposition products: None under normal temperature

11. Toxicological Information

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

Acute Health Hazards:

Overexposure of eye surface to ink may be mildly irritating
 Overexposure of skin to ink contact may cause irritation and in some people swelling and redness
 Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
 Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards: None known
 Mutagenicity: Negative (Ames assay)

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen.

Toxicity Data:

Oral LD₅₀: >2500mg/kg (Rats)
 Dermal LD₅₀: >2000mg/kg (Rats)
 Inhalant LC₅₀: Not applicable
 Eye irritating: Minimal irritating (Rabbits, OECD 405)
 Skin irritating: Non-irritating (Rabbits, OECD 404)
 Skin sensitizing: Non-sensitizing (Guinea Pig, OECD 406)

12. Ecological Information

12.1 Ecotoxicity:	No data available on the adverse effects of this ink on the environment
12.2 Mobility:	No data available on the adverse effects of this ink on the environment
12.3 Persistence and degradability:	No data available on the adverse effects of this ink on the environment
12.4 Bioaccumulative potential:	No data available on the adverse effects of this ink on the environment
12.5 Result of PBT assessment	Has not carried out PBT assessment
12.6 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. Transportation Information

UN Class/UN Number: Not applicable
DOT, IMO, or IATA : Not hazardous classification

15. Regulatory Considerations

EU Information:

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

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

Symbols and indication according to 1999/45/EC:

This ink does not meet the criteria for classification as dangerous.

US Information:

Toxic Substances Control Act (TSCA): All components of this product are listed on the TSCA Inventory.

California Proposition 65: Not regulated

SARA TITLE III:

Section 313: DEGBE(Chemical Category N230)

Canada Information:

WHMIS Controlled Product: Not applicable (Manufactured article)

Australia Information:

Statement of Hazardous Nature: Not classified as hazardous according to criteria of NOHSC

16. Other Information

List of relevant R-phrases: R22 Harmful if swallowed.

R36 Irritating to eyes.

R62 Possible risk of impaired fertility.

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of **mixture**, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Identification of The Substance/Mixture and of The Company/Undertaking

1.1. Identification of the mixture: Dye-based Ink, FDY-YE

1.2. Use of the substance/mixture: Inkjet Printing

1.3. Company/undertaking identification

Manufacturer/Distributor: 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
 Revision: 29 October 2009
 E-mail address:

1.4. Emergency telephone:

2. Hazard Identification

2.1 Emergency Overview:

This ink does not meet the criteria for dangerous classification according to EU Directive 1999/45/EC.
 Ink component is a yellow liquid that may cause eye irritation.

2.2 Potential Health Effects:

Eyes: Ink contact with eye may be mildly irritating.
 Skin: Ink contact with skin may cause irritation, swelling or redness.
 Inhalation: Intentional exposure to ink vapors (mist) will cause respiratory irritation.
 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.

3. Composition/Information on Ingredients

This is an aqueous ink formulation

Ink Composition	CAS No.	EC No.	EU registration No.	% By Weight	EU Symbols	EU R-phrases	EU OELs	Remarks
Colorants	Trade secret	Trade secret	Not available for the moment	1-5	-	-	-	-
Diethylene glycol	111-46-6	203-872-2	Not available for the moment	10-15	Xn	R22	-	-
TEGBE	143-22-6	205-592-6	Not available for the moment	about10	Xi	R41	-	-
Triethanol amine	102-71-6	203-049-8	Not available for the moment	<1	-	-	-	-
Proprietary organic materials	Trade secret	Trade secret	Not available for the moment	<1	-	-	-	-
Glycerols	Trade secret	Trade secret	Not available for the moment	about10	-	-	-	-
Water	7732-18-5	231-791-2	Exemption	balance	-	-	-	-

4. First Aid Measures

- 4.1 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.
- 4.2 Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse.
- 4.3 Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- 4.4 Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

5. Fire Fighting Measures

- 5.1 Flammability: Not Flammable
Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
- 5.2 Extinguishing Media: Dry chemical or carbon dioxide
- 5.3 Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- 5.4 Unusual Fire and Explosion Hazards: None.

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: Dike spill. Prevent liquid from entering sewers, waterways or low areas.
- 6.3 Methods for cleaning up: Soak up with sand or earth. Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

7. Handling And Storage

- 7.1 Handling: Avoid contact with eyes, skin and clothing. Keep out of reach of children and do not drink ink. Do not dismantle cartridge.
- 7.2 Storage: Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not store cartridges with oxidizing agents or explosives. **Make sure cartridge is dry before insertion into printer housing.**
- 7.3 Specific use(s): Not specified

8. Exposure Controls and Personal Protection

8.1. Exposure limit values:

US:

components	OSHA:PEL	ACGIH:TLV
Glycerols (mist)	15mg/m ³	10mg/m ³

Australia: OELs

components	TWA	STEL
Diethylene glycol (CAS No.111-46-6)	100mg/m ³ , 23ppm	Not applicable

8.2 Exposure controls:

- 8.2.1 Occupational exposure control
- 8.2.1.1 Respiratory protection: Proper ventilation, in prevention
Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.2 Hand protection: Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.3 Eye protection: Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.4 Skin protection: Not required under suitable use as setting the cartridge on the printer.
- 8.2.2 Environmental exposure control: Not established

9. Physical and Chemical Properties of Ink Formulation

9.1 General information

Appearance: Yellow Liquid
 Odor: Slightly

9.2 Important health, safety and environmental information

pH: about 9.1 at 20°C / 68 °F
 Boiling point: No data available
 Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
 Flammability (solid, gas): None
 Explosive properties: None
 Oxidizing properties: None
 Vapor pressure: No data available
 Relative density: 1.06 at 20°C / 68 °F
 Water Solubility: Complete
 Solubility: No data available
 Partition coefficient: :n-octanol/water: No data available
 Viscosity: Less than 5 mPa·s
 Evaporation rate: No data available
 Vapor density: No data available

9.3 Other information

Melting point: No data available

10. Stability and Reactivity

Stability: Stable under normal temperature
 Hazardous polymerization: No data available

10.1 Conditions to avoid: High and freezing temperatures
 10.2 Materials to avoid: Oxidizers and explosives
 10.3 Hazardous decomposition products: None under normal temperature

11. Toxicological Information

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

Acute Health Hazards:

Overexposure of eye surface to ink may be mildly irritating
 Overexposure of skin to ink contact may cause irritation and in some people swelling and redness
 Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
 Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards: None known
 Mutagenicity: Negative (by Ames Test)

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen.

Toxicity Data:

Oral LD₅₀: >5000mg/kg (Rats)
 Dermal LD₅₀: >2000mg/kg (Rats)
 Inhalant LC₅₀: Not applicable
 Eye irritating: Mild irritating (Rabbits, OECD 405)
 Skin irritating: Non-irritating (Rabbits, OECD 404)
 Skin sensitizing: Non-sensitizing (Guinea Pig, OECD 406)

12. Ecological Information

12.1 Ecotoxicity:	No data available on the adverse effects of this ink on the environment
12.2 Mobility:	No data available on the adverse effects of this ink on the environment
12.3 Persistence and degradability:	No data available on the adverse effects of this ink on the environment
12.4 Bioaccumulative potential:	No data available on the adverse effects of this ink on the environment
12.5 Result of PBT assessment	Has not carried out PBT assessment
12.6 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. Transportation Information

UN Class/UN Number: Not applicable
DOT, IMO, or IATA : Not hazardous classification

15. Regulatory Considerations

EU Information:

Chemical Safety Assessment according to (EC)1907/2006:
This ink has not carried out any Chemical Safety Assessment yet.
Symbols and indication according to 1999/45/EC:
This ink does not meet the criteria for classification as dangerous.

US Information:

Toxic Substances Control Act (TSCA): All components of this product are listed on the TSCA Inventory.
California Proposition 65: Not regulated

SARA TITLE III:

Section 313: TEGBE(Chemical Category N230)

Canada Information:

WHMIS Controlled Product: Not applicable (Manufactured article)

Australia Information:

Statement of Hazardous Nature: Not classified as hazardous according to criteria of NOHSC

16. Other Information

List of relevant R-phrases: R22 Harmful if swallowed.
R41 Risk of serious damage to eyes.

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of **mixture**, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Identification of The Substance/Mixture and of The Company/Undertaking

1.1. Identification of the mixture: Dye-based Ink, FDY-CY

1.2. Use of the substance/mixture: Inkjet Printing

1.3. Company/undertaking identification

Manufacturer/Distributor: 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
 Revision: 29 October 2009
 E-mail address:

1.4. Emergency telephone:

2. Hazard Identification

2.1 Emergency Overview:

This ink does not meet the criteria for dangerous classification according to EU Directive 1999/45/EC.
 Ink component is a cyan liquid that may cause eye irritation.

2.2 Potential Health Effects:

Eyes: Ink contact with eye may be mildly irritating.
 Skin: Ink contact with skin may cause irritation, swelling or redness.
 Inhalation: Intentional exposure to ink vapors (mist) will cause respiratory irritation.
 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.

3. Composition/Information on Ingredients

This is an aqueous ink formulation

Ink Composition	CAS No.	EC No.	EU registration No.	% By Weight	EU Symbols	EU R-phrases	EU OELs	Remarks
Colorants	Trade secret	Trade secret	Not available for the moment	1-5	-	-	-	-
Diethylene glycol	111-46-6	203-872-2	Not available for the moment	10-15	Xn	R22	-	-
TEGBE	143-22-6	205-592-6	Not available for the moment	about10	Xi	R41	-	-
Triethanol amine	102-71-6	203-049-8	Not available for the moment	<1	-	-	-	-
Proprietary organic materials	Trade secret	Trade secret	Not available for the moment	1-5	-	-	-	-
Glycerols	Trade secret	Trade secret	Not available for the moment	about10	-	-	-	-
Water	7732-18-5	231-791-2	Exemption	balance	-	-	-	-

4. First Aid Measures

- 4.1 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.
- 4.2 Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse.
- 4.3 Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- 4.4 Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

5. Fire Fighting Measures

- 5.1 Flammability: Not Flammable
Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
- 5.2 Extinguishing Media: Dry chemical or carbon dioxide
- 5.3 Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- 5.4 Unusual Fire and Explosion Hazards: None.

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: Dike spill. Prevent liquid from entering sewers, waterways or low areas.
- 6.3 Methods for cleaning up: Soak up with sand or earth. Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

7. Handling And Storage

- 7.1 Handling: Avoid contact with eyes, skin and clothing. Keep out of reach of children and do not drink ink. Do not dismantle cartridge.
- 7.2 Storage: Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not store cartridges with oxidizing agents or explosives. **Make sure cartridge is dry before insertion into printer housing.**
- 7.3 Specific use(s): Not specified

8. Exposure Controls and Personal Protection

8.1. Exposure limit values:

US:

components	OSHA:PEL	ACGIH:TLV
Glycerols (mist)	15mg/m ³	10mg/m ³

Australia: OELs

components	TWA	STEL
Diethylene glycol (CAS No.111-46-6)	100mg/m ³ , 23ppm	Not applicable

8.2 Exposure controls:

- 8.2.1 Occupational exposure control Proper ventilation, in prevention
- 8.2.1.1 Respiratory protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.2 Hand protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.3 Eye protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.4 Skin protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.2 Environmental exposure control Not established

9. Physical and Chemical Properties of Ink Formulation

9.1 General information

Appearance: Cyan Liquid
 Odor: Slightly

9.2 Important health, safety and environmental information

pH: about 9.3 at 20°C / 68 °F
 Boiling point: No data available
 Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
 Flammability (solid, gas): None
 Explosive properties: None
 Oxidizing properties: None
 Vapor pressure: No data available
 Relative density: 1.07 at 20°C / 68 °F
 Water Solubility: Complete
 Solubility: No data available
 Partition coefficient: :n-octanol/water: No data available
 Viscosity: Less than 5 mPa·s
 Evaporation rate: No data available
 Vapor density: No data available

9.3 Other information

Melting point: No data available

10. Stability and Reactivity

Stability: Stable under normal temperature
 Hazardous polymerization: No data available

10.1 Conditions to avoid: High and freezing temperatures

10.2 Materials to avoid: Oxidizers and explosives

10.3 Hazardous decomposition products: None under normal temperature

11. Toxicological Information

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

Acute Health Hazards:

Overexposure of eye surface to ink may be mildly irritating
 Overexposure of skin to ink contact may cause irritation and in some people swelling and redness
 Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
 Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards: None known
 Mutagenicity: Negative (by Ames Test)

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen.

Toxicity Data:

Oral LD₅₀: >5000mg/kg (Rats)
 Dermal LD₅₀: >2000mg/kg (Rats)
 Inhalant LC₅₀: Not applicable
 Eye irritating: Mild irritating (Rabbits, OECD 405)
 Skin irritating: Non-irritating (Rabbits, OECD 404)
 Skin sensitizing: Non-sensitizing (Guinea Pig, OECD 406)

12. Ecological Information

12.1 Ecotoxicity:	No data available on the adverse effects of this ink on the environment
12.2 Mobility:	No data available on the adverse effects of this ink on the environment
12.3 Persistence and degradability:	No data available on the adverse effects of this ink on the environment
12.4 Bioaccumulative potential:	No data available on the adverse effects of this ink on the environment
12.5 Result of PBT assessment	Has not carried out PBT assessment
12.6 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. Transportation Information

UN Class/UN Number: Not applicable
DOT, IMO, or IATA : Not hazardous classification

15. Regulatory Considerations

EU Information:

Chemical Safety Assessment according to (EC)1907/2006:
This ink has not carried out any Chemical Safety Assessment yet.
Symbols and indication according to 1999/45/EC:
This ink does not meet the criteria for classification as dangerous.

US Information:

Toxic Substances Control Act (TSCA): All components of this product are listed on the TSCA Inventory.
California Proposition 65: Not regulated

SARA TITLE III:

Section 313: TEGBE(Chemical Category N230)

Canada Information:

WHMIS Controlled Product: Not applicable (Manufactured article)

Australia Information:

Statement of Hazardous Nature: Not classified as hazardous according to criteria of NOHSC

16. Other Information

List of relevant R-phrases: R22 Harmful if swallowed.
R41 Risk of serious damage to eyes.

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of mixture, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Identification of The Substance/Mixture and of The Company/Undertaking

1.1. Identification of the mixture: Dye-based Ink, FDY-MG

1.2. Use of the substance/mixture: Inkjet Printing

1.3. Company/undertaking identification

Manufacturer/Distributor: 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
 Revision: 29 October 2009
 E-mail address:

1.4. Emergency telephone:

2. Hazard Identification

2.1 Emergency Overview:

This ink does not meet the criteria for dangerous classification according to EU Directive 1999/45/EC.
 Ink component is a magenta liquid that may cause eye irritation.

2.2 Potential Health Effects:

Eyes: Ink contact with eye may be mildly irritating.
 Skin: Ink contact with skin may cause irritation, swelling or redness.
 Inhalation: Intentional exposure to ink vapors (mist) will cause respiratory irritation.
 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.

3. Composition/Information on Ingredients

This is an aqueous ink formulation

Ink Composition	CAS No.	EC No.	EU registration No.	% By Weight	EU Symbols	EU R-phrase	EU OELs	Remarks
Azo dye	Trade secret	Trade secret	Not available for the moment	1-5	Xi	R36 R52/53	-	-
Triethanol amine	102-71-6	203-049-8	Not available for the moment	<1	-	-	-	-
Proprietary organic materials	Trade secret	Trade secret	Not available for the moment	1-5	-	-	-	-
Diethylene glycol	111-46-6	203-872-2	Not available for the moment	5-10	Xn	R22	-	-
TEGBE	143-22-6	205-592-6	Not available for the moment	about10	Xi	R41	-	-
Glycerols	Trade secret	Trade secret	Not available for the moment	about10	-	-	-	-
Water	7732-18-5	231-791-2	Exemption	balance	-	-	-	-

4. First Aid Measures

- 4.1 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.
- 4.2 Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse.
- 4.3 Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- 4.4 Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

5. Fire Fighting Measures

- 5.1 Flammability: Not Flammable
Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
- 5.2 Extinguishing Media: Dry chemical or carbon dioxide
- 5.3 Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- 5.4 Unusual Fire and Explosion Hazards: None.

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: Dike spill. Prevent liquid from entering sewers, waterways or low areas.
- 6.3 Methods for cleaning up: Soak up with sand or earth. Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

7. Handling And Storage

- 7.1 Handling: Avoid contact with eyes, skin and clothing. Keep out of reach of children and do not drink ink. Do not dismantle cartridge.
- 7.2 Storage: Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not store cartridges with oxidizing agents or explosives. **Make sure cartridge is dry before insertion into printer housing.**
- 7.3 Specific use(s): Not specified

8. Exposure Controls and Personal Protection

8.1. Exposure limit values:

US:

components	OSHA:PEL	ACGIH:TLV
Glycerols (mist)	15mg/m ³	10mg/m ³

Australia: OELs

components	TWA	STEL
Diethylene glycol (CAS No.111-46-6)	100mg/m ³ , 23ppm	Not applicable

8.2 Exposure controls:

- 8.2.1 Occupational exposure control Proper ventilation, in prevention
- 8.2.1.1 Respiratory protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.2 Hand protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.3 Eye protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.4 Skin protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.2 Environmental exposure control Not established

9. Physical and Chemical Properties of Ink Formulation

9.1 General information

Appearance: Magenta Liquid
 Odor: Slightly

9.2 Important health, safety and environmental information

pH: about 9.1 at 20°C / 68 °F
 Boiling point: No data available
 Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
 Flammability (solid, gas): None
 Explosive properties: None
 Oxidizing properties: None
 Vapor pressure: No data available
 Relative density: 1.08 at 20°C / 68 °F
 Water Solubility: Complete
 Solubility: No data available
 Partition coefficient: :n-octanol/water: No data available
 Viscosity: Less than 5 mPa·s
 Evaporation rate: No data available
 Vapor density: No data available

9.3 Other information

Melting point: No data available

10. Stability and Reactivity

Stability: Stable under normal temperature
 Hazardous polymerization: No data available

10.1 Conditions to avoid: High and freezing temperatures
 10.2 Materials to avoid: Oxidizers and explosives
 10.3 Hazardous decomposition products: None under normal temperature

11. Toxicological Information

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

Acute Health Hazards:

Overexposure of eye surface to ink may be mildly irritating
 Overexposure of skin to ink contact may cause irritation and in some people swelling and redness
 Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
 Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards: None known
 Mutagenicity: Negative (by Ames Test)

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen.

Toxicity Data:

Oral LD₅₀: >5000mg/kg (Rats)
 Dermal LD₅₀: >2000mg/kg (Rats)
 Inhalant LC₅₀: Not applicable
 Eye irritating: Mild irritating (Rabbits, OECD 405)
 Skin irritating: Non-irritating (Rabbits, OECD 404)
 Skin sensitizing: Non-sensitizing (Guinea Pig, OECD 406)

12. Ecological Information

12.1 Ecotoxicity:	No data available on the adverse effects of this ink on the environment
12.2 Mobility:	No data available on the adverse effects of this ink on the environment
12.3 Persistence and degradability:	No data available on the adverse effects of this ink on the environment
12.4 Bioaccumulative potential:	No data available on the adverse effects of this ink on the environment
12.5 Result of PBT assessment	Has not carried out PBT assessment
12.6 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. Transportation Information

UN Class/UN Number: Not applicable
DOT, IMO, or IATA : Not hazardous classification

15. Regulatory Considerations

EU Information:

Chemical Safety Assessment according to (EC)1907/2006:
This ink has not carried out any Chemical Safety Assessment yet.
Symbols and indication according to 1999/45/EC:
This ink does not meet the criteria for classification as dangerous.

US Information:

Toxic Substances Control Act (TSCA): All components of this product are listed on the TSCA Inventory.
California Proposition 65: Not regulated

SARA TITLE III:

Section 313: TEGBE(Chemical Category N230)

Canada Information:

WHMIS Controlled Product: Not applicable (Manufactured article)

Australia Information:

Statement of Hazardous Nature: Not classified as hazardous according to criteria of NOHSC

16. Other Information

List of relevant R-phrases: R22 Harmful if swallowed.
R36 Irritating to eyes.
R41 Risk of serious damage to eyes.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of mixture, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Identification of The Substance/Mixture and of The Company/Undertaking

1.1. Identification of the mixture: Dye-based Ink, FDY-LC

1.2. Use of the substance/mixture: Inkjet Printing

1.3. Company/undertaking identification

Manufacturer/Distributor: 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
 Revision: 29 October 2009
 E-mail address:

1.4. Emergency telephone:

2. Hazard Identification

2.1 Emergency Overview:

This ink does not meet the criteria for dangerous classification according to EU Directive 1999/45/EC.
 Ink component is a cyan liquid that may cause eye irritation.

2.2 Potential Health Effects:

Eyes: Ink contact with eye may be mildly irritating.
 Skin: Ink contact with skin may cause irritation, swelling or redness.
 Inhalation: Intentional exposure to ink vapors (mist) will cause respiratory irritation.
 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.

3. Composition/Information on Ingredients

This is an aqueous ink formulation

Ink Composition	CAS No.	EC No.	EU registration No.	% By Weight	EU Symbols	EU R-phrases	EU OELs	Remarks
Colorants	Trade secret	Trade secret	Not available for the moment	<1	-	-	-	-
Diethylene glycol	111-46-6	203-872-2	Not available for the moment	about 15	Xn	R22	-	-
TEGBE	143-22-6	205-592-6	Not available for the moment	about 10	Xi	R41	-	-
Triethanol amine	102-71-6	203-049-8	Not available for the moment	<1	-	-	-	-
Proprietary organic materials	Trade secret	Trade secret	Not available for the moment	<1	-	-	-	-
Glycerols	Trade secret	Trade secret	Not available for the moment	about 10	-	-	-	-
Water	7732-18-5	231-791-2	Exemption	balance	-	-	-	-

4. First Aid Measures

- 4.1 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.
- 4.2 Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse.
- 4.3 Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- 4.4 Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

5. Fire Fighting Measures

- 5.1 Flammability: Not Flammable
Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
- 5.2 Extinguishing Media: Dry chemical or carbon dioxide
- 5.3 Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- 5.4 Unusual Fire and Explosion Hazards: None.

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: Dike spill. Prevent liquid from entering sewers, waterways or low areas.
- 6.3 Methods for cleaning up: Soak up with sand or earth. Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

7. Handling And Storage

- 7.1 Handling: Avoid contact with eyes, skin and clothing. Keep out of reach of children and do not drink ink. Do not dismantle cartridge.
- 7.2 Storage: Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not store cartridges with oxidizing agents or explosives. **Make sure cartridge is dry before insertion into printer housing.**
- 7.3 Specific use(s): Not specified

8. Exposure Controls and Personal Protection

8.1. Exposure limit values:

US:

components	OSHA:PEL	ACGIH:TLV
Glycerols (mist)	15mg/m ³	10mg/m ³

Australia: OELs

components	TWA	STEL
Diethylene glycol (CAS No.111-46-6)	100mg/m ³ , 23ppm	Not applicable

8.2 Exposure controls:

- 8.2.1 Occupational exposure control Proper ventilation, in prevention
- 8.2.1.1 Respiratory protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.2 Hand protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.3 Eye protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.4 Skin protection Not required under suitable use as setting the cartridge on the printer.
- 8.2.2 Environmental exposure control Not established

9. Physical and Chemical Properties of Ink Formulation

9.1 General information

Appearance: Cyan Liquid
 Odor: Slightly

9.2 Important health, safety and environmental information

pH: about 9.4 at 20°C / 68 °F
 Boiling point: No data available
 Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
 Flammability (solid, gas): None
 Explosive properties: None
 Oxidizing properties: None
 Vapor pressure: No data available
 Relative density: 1.06 at 20°C / 68 °F
 Water Solubility: Complete
 Solubility: No data available
 Partition coefficient: :n-octanol/water: No data available
 Viscosity: Less than 5 mPa·s
 Evaporation rate: No data available
 Vapor density: No data available

9.3 Other information

Melting point: No data available

10. Stability and Reactivity

Stability: Stable under normal temperature
 Hazardous polymerization: No data available

10.1 Conditions to avoid: High and freezing temperatures

10.2 Materials to avoid: Oxidizers and explosives

10.3 Hazardous decomposition products: None under normal temperature

11. Toxicological Information

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

Acute Health Hazards:

Overexposure of eye surface to ink may be mildly irritating
 Overexposure of skin to ink contact may cause irritation and in some people swelling and redness
 Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
 Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards: None known
 Mutagenicity: Negative (by Ames Test)

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen.

Toxicity Data:

Oral LD₅₀: >5000mg/kg (Rats)
 Dermal LD₅₀: >2000mg/kg (Rats)
 Inhalant LC₅₀: Not applicable
 Eye irritating: Mild irritating (Rabbits, OECD 405)
 Skin irritating: Non-irritating (Rabbits, OECD 404)
 Skin sensitizing: Non-sensitizing (Guinea Pig, OECD 406)

12. Ecological Information

12.1 Ecotoxicity:	No data available on the adverse effects of this ink on the environment
12.2 Mobility:	No data available on the adverse effects of this ink on the environment
12.3 Persistence and degradability:	No data available on the adverse effects of this ink on the environment
12.4 Bioaccumulative potential:	No data available on the adverse effects of this ink on the environment
12.5 Result of PBT assessment	Has not carried out PBT assessment
12.6 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. Transportation Information

UN Class/UN Number: Not applicable
DOT, IMO, or IATA : Not hazardous classification

15. Regulatory Considerations

EU Information:

Chemical Safety Assessment according to (EC)1907/2006:
This ink has not carried out any Chemical Safety Assessment yet.
Symbols and indication according to 1999/45/EC:
This ink does not meet the criteria for classification as dangerous.

US Information:

Toxic Substances Control Act (TSCA): All components of this product are listed on the TSCA Inventory.
California Proposition 65: Not regulated

SARA TITLE III:

Section 313: TEGBE(Chemical Category N230)

Canada Information:

WHMIS Controlled Product: Not applicable (Manufactured article)

Australia Information:

Statement of Hazardous Nature: Not classified as hazardous according to criteria of NOHSC

16. Other Information

List of relevant R-phrases: R22 Harmful if swallowed.
R41 Risk of serious damage to eyes.

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of **mixture**, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Identification of The Substance/Mixture and of The Company/Undertaking

1.1. Identification of the mixture: Dye-based Ink, FDY-LM

1.2. Use of the substance/mixture: Inkjet Printing

1.3. Company/undertaking identification

Manufacturer/Distributor:	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
Revision:	29 October 2009
E-mail address:	

1.4. Emergency telephone:

2. Hazard Identification

2.1 Emergency Overview:

This ink does not meet the criteria for dangerous classification according to EU Directive 1999/45/EC.
 Ink component is a magenta liquid that may cause eye irritation.

2.2 Potential Health Effects:

Eyes:	Ink contact with eye may be mildly irritating.
Skin:	Ink contact with skin may cause irritation, swelling or redness.
Inhalation:	Intentional exposure to ink vapors (mist) will cause respiratory irritation.
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.

3. Composition/Information on Ingredients

This is an aqueous ink formulation

Ink Composition	CAS No.	EC No.	EU registration No.	% By Weight	EU Symbols	EU R-phrases	EU OELs	Remarks
Colorants	Trade secret	Trade secret	Not available for the moment	<1	-	-	-	-
TEGBE	143-22-6	205-592-6	Not available for the moment	about10	Xi	R41	-	-
Diethylene glycol	111-46-6	203-872-2	Not available for the moment	10-15	Xn	R22	-	-
Triethanol amine	102-71-6	203-049-8	Not available for the moment	<1	-	-	-	-
Proprietary organic materials	Trade secret	Trade secret	Not available for the moment	5-10	-	-	-	-
Glycerols	Trade secret	Trade secret	Not available for the moment	about10	-	-	-	-
Water	7732-18-5	231-791-2	Exemption	balance	-	-	-	-

4. First Aid Measures

- 4.1 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.
- 4.2 Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse.
- 4.3 Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- 4.4 Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

5. Fire Fighting Measures

- 5.1 Flammability: Not Flammable
Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
- 5.2 Extinguishing Media: Dry chemical or carbon dioxide
- 5.3 Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and full protective equipment.
- 5.4 Unusual Fire and Explosion Hazards: None.

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: Dike spill. Prevent liquid from entering sewers, waterways or low areas.
- 6.3 Methods for cleaning up: Soak up with sand or earth. Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

7. Handling And Storage

- 7.1 Handling: Avoid contact with eyes, skin and clothing. Keep out of reach of children and do not drink ink. Do not dismantle cartridge.
- 7.2 Storage: Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not store cartridges with oxidizing agents or explosives. **Make sure cartridge is dry before insertion into printer housing.**
- 7.3 Specific use(s): Not specified

8. Exposure Controls and Personal Protection

8.1. Exposure limit values:

US:

components	OSHA:PEL	ACGIH:TLV
Glycerols (mist)	15mg/m ³	10mg/m ³

Australia: OELs

components	TWA	STEL
Diethylene glycol (CAS No.111-46-6)	100mg/m ³ , 23ppm	Not applicable

8.2 Exposure controls:

- 8.2.1 Occupational exposure control
- 8.2.1.1 Respiratory protection: Proper ventilation, in prevention
Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.2 Hand protection: Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.3 Eye protection: Not required under suitable use as setting the cartridge on the printer.
- 8.2.1.4 Skin protection: Not required under suitable use as setting the cartridge on the printer.
- 8.2.2 Environmental exposure control: Not established

9. Physical and Chemical Properties of Ink Formulation

9.1 General information

Appearance: Magenta Liquid
 Odor: Slightly

9.2 Important health, safety and environmental information

pH: about 9.1 at 20°C / 68 °F
 Boiling point: No data available
 Flash point: Not detected until 110°C/230°F (closed cup, ASTM D3278)
 Flammability (solid, gas): None
 Explosive properties: None
 Oxidizing properties: None
 Vapor pressure: No data available
 Relative density: 1.08 at 20°C / 68 °F
 Water Solubility: Complete
 Solubility: No data available
 Partition coefficient: :n-octanol/water: No data available
 Viscosity: Less than 5 mPa·s
 Evaporation rate: No data available
 Vapor density: Greater than 1 (air = 1)

9.3 Other information

Melting point: No data available

10. Stability and Reactivity

Stability: Stable under normal temperature
 Hazardous polymerization: No data available

10.1 Conditions to avoid: High and freezing temperatures
 10.2 Materials to avoid: Oxidizers and explosives
 10.3 Hazardous decomposition products: None under normal temperature

11. Toxicological Information

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

Acute Health Hazards:

Overexposure of eye surface to ink may be mildly irritating
 Overexposure of skin to ink contact may cause irritation and in some people swelling and redness
 Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
 Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards: None known
 Mutagenicity: Negative (by Ames Test)

Carcinogenicity: None of the ingredients in this ink is listed by IARC as a carcinogen.

Toxicity Data:

Oral LD₅₀: >5000mg/kg (Rats)
 Dermal LD₅₀: >2000mg/kg (Rats)
 Inhalant LC₅₀: Not applicable
 Eye irritating: Mild irritating (Rabbits, OECD 405)
 Skin irritating: Non-irritating (Rabbits, OECD 404)
 Skin sensitizing: Non-sensitizing (Guinea Pig, OECD 406)

12. Ecological Information

12.1 Ecotoxicity:	No data available on the adverse effects of this ink on the environment
12.2 Mobility:	No data available on the adverse effects of this ink on the environment
12.3 Persistence and degradability:	No data available on the adverse effects of this ink on the environment
12.4 Bioaccumulative potential:	No data available on the adverse effects of this ink on the environment
12.5 Result of PBT assessment	Has not carried out PBT assessment
12.6 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. Transportation Information

UN Class/UN Number: Not applicable
DOT, IMO, or IATA : Not hazardous classification

15. Regulatory Considerations

EU Information:

Chemical Safety Assessment according to (EC)1907/2006:
This ink has not carried out any Chemical Safety Assessment yet.
Symbols and indication according to 1999/45/EC:
This ink does not meet the criteria for classification as dangerous.

US Information:

Toxic Substances Control Act (TSCA): All components of this product are listed on the TSCA Inventory.
California Proposition 65: Not regulated

SARA TITLE III:

Section 313: TEGBE(Chemical Category N230)

Canada Information:

WHMIS Controlled Product: Not applicable (Manufactured article)

Australia Information:

Statement of Hazardous Nature: Not classified as hazardous according to criteria of NOHSC

16. Other Information

List of relevant R-phrases: R22 Harmful if swallowed.
R41 Risk of serious damage to eyes.

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of **mixture**, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.