D-UA-5CY
D-UAP-7CY
D-UAB-CY

Version G_1.0

2024/06/24

Safety Data Sheet

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

1.1. Product identifier

D-UA-5CY
D-UAP-7CY
D-UAB-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

Manufacturer's name: Roland DG Corporation
Address: 1-1-2 Shinmiyakoda, Hamana-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
Phone: + 81-53-484-1224 FAX: + 81-53-484-1226

E-mail:
Revised date: 24-June-2024

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as hazardous according to GHS.

Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Sensitisation (Skin)	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity (Repeated exposure)	Category 2
Hazardous to the aquatic environment (AcuteHazard)	Category 1
Hazardous to the aquatic environment (Chronic Hazard)	Category 1

2.2. GHS label elements, including precautionary statements

Pictgram(s)

Signal Word: Danger

Hazard Statement:

Harmful if swallowed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements — Prevention:

Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements — Response:

IF ON SKIN: Wash with plenty of soap and water.
IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Potential Health Effects:

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

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	% By Weight	GHS Classification
Phthalocyanine blue	147-14-8	1-5	Not classified as hazardous
Benzyl acrylate	2495-35-4	20-30	Skin Irrit. 2: H315 Skin Sens. 1B: H317 Aquatic Acute 1: H400 Aquatic Chronic 1: H410
Hexamethylene Diacrylate	13048-33-4	20-30	Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1: H317

Morpholine, 4-(1-oxo-2-propenyl)	5117-12-4	10-20	Acute Tox. 4: H302 STOT RE 2: H373 Eye Dam. 1: H318 Skin Sens. 1: H317
2-Propenoic acid, 2-phenoxyethyl ester	48145-04-6	5-10	Skin Sens. 1A: H317 Repr. 2: H361 Aquatic Chronic 2: H411
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	5-10	Aquatic Chronic 4: H413
2-Propenamide, N,N-dimethyl-	2680-03-7	5-10	Acute Tox. 3: H301 Acute Tox. 3: H311 Eye Damage 1: H318
2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester	7328-17-8	5-10	Acute Tox. 4: H302 Acute Tox. 3: H311 Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1A: H317 Aquatic Chronic 2: H411
Ethyl phenyl(2,4,6-trimethylbenzoyl) phosphinate	84434-11-7	1-5	Skin Sens. 1B: H317 Aquatic Chronic 2: H411
4-Methoxyphenol	150-76-5	<1	Acute Tox. 4: H302 Eye Irrit. 2: H319 Skin Sens. 1: H317

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

4. First aid measures

4.1. Description of first aid measures

Eyes: In case of contact, immediately flush eyes with plenty of water for several minutes. Hold eyelids open during flushing. Call a physician.

Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

Eyes: Causes severe eye injury which may persist for several days.

Skin: Contact with skin may cause irritation, swelling or redness, allergic sensitization.

Inhalation: Exposure to vapors (mist) may be harmful to the unborn child and at the risk of impaired fertility and irritate nose, throat/respiratory system.

Ingestion: May cause injury of mouth, throat, and stomach.

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

no information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

Water, High-pressure water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.
Flash Point: > 94deg.C

5.3. Advice for firefighters

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

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Sweep up material and dispose as waste following local regulations.

6.4. Reference to other sections

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

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s): Inkjet Printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

Derived No-Effect Level (DNEL)

— Hexamethylene Diacrylate:

[Long term exposure] 24.5 mg/m³

[Short term exposure] no hazard identified

— Morpholine, 4-(1-oxo-2-propenyl):

[Long term exposure] 132.24 mg/m³

[Short term exposure] 132.24 mg/m³

— 2-Propenoic acid, 2-phenoxyethyl ester:

[Long term exposure] 12 mg/m³

[Short term exposure] hazard unknown (no further information necessary)

— Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide:

[Long term exposure] 21 mg/m³

[Short term exposure] hazard unknown (no further information necessary)

— 2-Propenamide, N,N-dimethyl-:

[Long term exposure] 0.207 mg/m³

[Short term exposure] no hazard identified

— 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester:

[Long term exposure] 2.6 mg/m³

[Short term exposure] no hazard identified

— Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

[Long term exposure] 4.93 mg/m³

[Short term exposure] no hazard identified

8.2. Exposure controls

Appropriate engineering controls

Provide general and/or local exhaust ventilation.

Respiratory protection:

Not requiredwhen sufficient ventilation is provided. In case of inadequate ventilation and exposure limits are exceeded or if irritation or other symptoms are experienced, use a NIOSH/MSHA or European Standard EN149 approved respirator (with activated carbon layer for organic vapour).

Hand protection:

Employee must wear appropriate protective impervious gloves to prevent contact with the ink. Recommended Chemical Protective Gloves are EN420/374 approved ethylene vinyl alcohol (EVOH) Gloves and Laminate gloves. Laminate gloves are made by cutting and then heat-sealing patterns of various hand sizes from laminated sheets of EVOH sealed between layers of polyethylene.

Eye protection:

Not required under suitable use as setting the ink on the printer. However, in case of direct contact to the ink, wear EN166 approved safety glasses.

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Cyan Liquid
Odour:	Characteristic odour
Odour threshold:	Not defined
pH:	Not applicable
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	> 94deg.C
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.0-1.1
Solubility(ies):	Slightly soluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Volatile organic compounds (VOC) content:	0.047 g/L

9.2 Other information

No information.

10. Stability and reactivity

10.1 Reactivity:

High temperatures and UV light may cause rapid polymerization.

10.2 Chemical stability:

Stable under normal temperature.

10.3 Possibility of hazardous reactions:

Not expected.

10.4 Conditions to avoid:

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

10.5 Incompatible materials:

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

10.6 Hazardous decomposition products:

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

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity:

Morpholine, 4-(1-oxo-2-propenyl)

LD50（oral）: 588mg/kgbw, LD50 (dermal): >2000mg/kgbw, LD50 (Inhal.): no data available

2-Propenamide, N,N-dimethyl-

LD50（oral）: >215-<464mg/kgbw, LD50 (dermal): no data available, LD50 (Inhal.): no data available

2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

LD50（oral）: ca.1106mg/kgbw., LD50 (dermal): no data available, LD50 (Inhal.): no data available

4-Methoxyphenol

LD50（oral）: no data available, LD50 (dermal): no data available, LD50 (Inhal.): no data available

Serious eye damage/eye irritation:

Causes serious eye damage.

- Morpholine, 4-(1-oxo-2-propenyl)
- 2-Propenamide, N,N-dimethyl-

Causes serious eye irritation.

- Hexamethylene Diacrylate
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- 4-Methoxyphenol

Skin corrosion/irritation:

Causes skin irritation.

- Benzyl acrylate
- Hexamethylene Diacrylate

• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

• Benzyl acrylate
• Hexamethylene Diacrylate
• Morpholine, 4-(1-oxo-2-propenyl)
• 2-Propenoic acid, 2-phenoxyethyl ester
• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
• Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
• 4-Methoxyphenol

Germ cell mutagenicity:

no data available.

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

• 2-Propenoic acid, 2-phenoxyethyl ester

Carcinogenicity:

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

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

no data available.

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

May cause damage to organs through prolonged or repeated exposure.

• Morpholine, 4-(1-oxo-2-propenyl)

Aspiration hazard:

no data available.

12. Ecological information

12.1. Toxicity:

Very toxic to aquatic life.

• Benzyl acrylate

Very toxic to aquatic life with long lasting effects.

• Benzyl acrylate

Toxic to aquatic life with long lasting effects.

• 2-Propenoic acid, 2-phenoxyethyl ester
• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
• Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

May cause long lasting harmful effects to aquatic life.

• Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

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. Endocrine disrupting properties:

No data available

12.7. Other adverse effects:

No data available

13. Disposal considerations

13.1. Waste treatment methods

Product:	Dispose as hazardous waste. Packaging with product residues must be disposed of under the same conditions as the product itself.
Recommended waste code:	08 03 12* (waste ink containing dangerous substances)
Uncleaned packaging:	15 01 10* (packaging, the residues of dangerous substances or hazardous waste contain or are contaminated by dangerous substances or special wastes)
Recommendation:	Uncontaminated packaging can be recycled. Non-cleanable packaging must be disposed of in the same way as the substance.

14. Transport information

14.1 UN Class/UN Number

ADR/ADG/DOT, IMDG, or IATA : 3082

14.2 UN proper shipping name

ADR/ADG/DOT, IMDG, or IATA : Environmentall hazardous substance, liquid, n.o.s.

14.3 Transport hazard class(es)

ADR/ADG/DOT, IMDG, or IATA : 9

14.4 Packing group

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

14.5 Environmental hazards

ADR/ADG/DOT, IMDG, or IATA : Environmentally hazardous substance, liquid, n.o.s.

14.6. Special precautions for user

ADR/ADG/DOT, IMDG, or IATA : Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

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

15. Regulatory information

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

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

International Information:

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

16. Other information

List of relevant H-Statements:

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

— H301: Toxic if swallowed.
— H302: Harmful if swallowed.
— H311: Toxic in contact with skin.
— H315: Causes skin irritation.
— H317: May cause an allergic skin reaction.
— H318: Causes serious eye damage.
— H319: Causes serious eye irritation.
— H361: Suspected of damaging fertility or the unborn child.
— H373: May cause damage to organs through prolonged or repeated exposure.
— H400: Very toxic to aquatic life.
— H410: Very toxic to aquatic life with long lasting effects.
— H411: Toxic to aquatic life with long lasting effects.
— H413: May cause long lasting harmful effects to aquatic life.

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

D-UA-5MG
D-UAP-7MG
D-UAB-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

Manufacturer's name: Roland DG Corporation
Address: 1-1-2 Shinmiyakoda, Hamana-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
Phone: + 81-53-484-1224 FAX: + 81-53-484-1226

E-mail:
Revised date: 24-June-2024

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as hazardous according to GHS.

Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Sensitisation (Skin)	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity (Repeated exposure)	Category 2
Hazardous to the aquatic environment (AcuteHazard)	Category 1
Hazardous to the aquatic environment (Chronic Hazard)	Category 1

2.2. GHS label elements, including precautionary statements

Pictgram(s)

Signal Word: Danger

Hazard Statement:

Harmful if swallowed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements — Prevention:

Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements — Response:

IF ON SKIN: Wash with plenty of soap and water.
IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Potential Health Effects:

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

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	% By Weight	GHS Classification
Benzyl acrylate	2495-35-4	20-30	Skin Irrit. 2: H315 Skin Sens. 1B: H317 Aquatic Acute 1: H400 Aquatic Chronic 1: H410
Hexamethylene Diacrylate	13048-33-4	20-30	Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1: H317
Morpholine, 4-(1-oxo-2-propenyl)	5117-12-4	10-20	Acute Tox. 4: H302 STOT RE 2: H373 Eye Dam. 1: H318 Skin Sens. 1: H317
2-Propenoic acid, 2-phenoxyethyl ester	48145-04-6	5-10	Skin Sens. 1A: H317 Repr. 2: H361 Aquatic Chronic 2: H411
2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester	7328-17-8	5-10	Acute Tox. 4: H302 Acute Tox. 3: H311 Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1A: H317 Aquatic Chronic 2: H411
2-Propenamide, N,N-dimethyl-	2680-03-7	5-10	Acute Tox. 3: H301 Acute Tox. 3: H311 Eye Damage 1: H318
Ethyl phenyl(2,4,6-trimethylbenzoyl) phosphinate	84434-11-7	1-5	Skin Sens. 1B: H317 Aquatic Chronic 2: H411
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	1-5	Aquatic Chronic 4: H413
4-Methoxyphenol	150-76-5	<1	Acute Tox. 4: H302 Eye Irrit. 2: H319 Skin Sens. 1: H317

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

4. First aid measures

4.1. Description of first aid measures

Eyes: In case of contact, immediately flush eyes with plenty of water for several minutes. Hold eyelids open during flushing. Call a physician.

Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

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

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

no information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

Water, High-pressure water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.
Flash Point: > 94deg.C

5.3. Advice for firefighters

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

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Sweep up material and dispose as waste following local regulations.

6.4. Reference to other sections

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

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s): Inkjet Printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

Derived No-Effect Level (DNEL)

— Hexamethylene Diacrylate:

[Long term exposure] 24.5 mg/m³

[Short term exposure] no hazard identified

— Morpholine, 4-(1-oxo-2-propenyl):

[Long term exposure] 132.24 mg/m³

[Short term exposure] 132.24 mg/m³

— 2-Propenoic acid, 2-phenoxyethyl ester:

[Long term exposure] 12 mg/m³

[Short term exposure] hazard unknown (no further information necessary)

— 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester:

[Long term exposure] 2.6 mg/m³

[Short term exposure] no hazard identified

— 2-Propenamide, N,N-dimethyl-:

[Long term exposure] 0.207 mg/m³

[Short term exposure] no hazard identified

— Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

[Long term exposure] 4.93 mg/m³

[Short term exposure] no hazard identified

— Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide:

[Long term exposure] 21 mg/m³

[Short term exposure] hazard unknown (no further information necessary)

8.2. Exposure controls

Appropriate engineering controls

Provide general and/or local exhaust ventilation.

Respiratory protection:

Not requiredwhen sufficient ventilation is provided. In case of inadequate ventilation and exposure limits are exceeded or if irritation or other symptoms are experienced, use a NIOSH/MSHA or European Standard EN149 approved respirator (with activated carbon layer for organic vapour).

Hand protection:

Employee must wear appropriate protective impervious gloves to prevent contact with the ink. Recommended Chemical Protective Gloves are EN420/374 approved ethylene vinyl alcohol (EVOH) Gloves and Laminate gloves. Laminate gloves are made by cutting and then heat-sealing patterns of various hand sizes from laminated sheets of EVOH sealed between layers of polyethylene.

Eye protection:

Not required under suitable use as setting the ink on the printer. However, in case of direct contact to the ink, wear EN166 approved safety glasses.

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Magenta Liquid
Odour:	Characteristic odour
Odour threshold:	Not defined
pH:	Not applicable
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	> 94deg.C
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.0-1.1
Solubility(ies):	Slightly soluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available

Decomposition temperature:	No data available
Viscosity:	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Volatile organic compounds (VOC) content:	0.047 g/L

9.2 Other information

No information.

10. Stability and reactivity

10.1 Reactivity:

High temperatures and UV light may cause rapid polymerization.

10.2 Chemical stability:

Stable under normal temperature.

10.3 Possibility of hazardous reactions:

Not expected.

10.4 Conditions to avoid:

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

10.5 Incompatible materials:

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

10.6 Hazardous decomposition products:

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

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity:

Morpholine, 4-(1-oxo-2-propenyl)

LD50（oral）: 588mg/kgbw, LD50 (dermal): >2000mg/kgbw, LD50 (Inhal.): no data available

2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

LD50（oral）: ca.1106mg/kgbw., LD50 (dermal): no data available, LD50 (Inhal.): no data available

2-Propenamide, N,N-dimethyl-

LD50（oral）: >215-<464mg/kgbw, LD50 (dermal): no data available, LD50 (Inhal.): no data available

4-Methoxyphenol

LD50（oral）: no data available, LD50 (dermal): no data available, LD50 (Inhal.): no data available

Serious eye damage/eye irritation:

Causes serious eye damage.

• Morpholine, 4-(1-oxo-2-propenyl)
• 2-Propenamide, N,N-dimethyl-

Causes serious eye irritation.

• Hexamethylene Diacrylate
• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
• 4-Methoxyphenol

Skin corrosion/irritation:

Causes skin irritation.

• Benzyl acrylate
• Hexamethylene Diacrylate
• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

• Benzyl acrylate
• Hexamethylene Diacrylate
• Morpholine, 4-(1-oxo-2-propenyl)
• 2-Propenoic acid, 2-phenoxyethyl ester
• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
• Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
• 4-Methoxyphenol

Germ cell mutagenicity:

no data available.

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

• 2-Propenoic acid, 2-phenoxyethyl ester

Carcinogenicity:

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

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

no data available.

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

May cause damage to organs through prolonged or repeated exposure.

• Morpholine, 4-(1-oxo-2-propenyl)

Aspiration hazard:

no data available.

12. Ecological information

12.1. Toxicity:

Very toxic to aquatic life.

- Benzyl acrylate

Very toxic to aquatic life with long lasting effects.

- Benzyl acrylate

Toxic to aquatic life with long lasting effects.

- 2-Propenoic acid, 2-phenoxyethyl ester
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

May cause long lasting harmful effects to aquatic life.

- Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

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. Endocrine disrupting properties:

No data available

12.7. Other adverse effects:

No data available

13. Disposal considerations

13.1. Waste treatment methods

Product:	Dispose as hazardous waste. Packaging with product residues must be disposed of under the same conditions as the product itself.
Recommended waste code:	08 03 12* (waste ink containing dangerous substances)
Uncleaned packaging:	15 01 10* (packaging, the residues of dangerous substances or hazardous waste contain or are contaminated by dangerous substances or special wastes)
Recommendation:	Uncontaminated packaging can be recycled. Non-cleanable packaging must be disposed of in the same way as the substance.

14. Transport information

14.1 UN Class/UN Number

ADR/ADG/DOT, IMDG, or IATA : 3082

14.2 UN proper shipping name

ADR/ADG/DOT, IMDG, or IATA : Environmentall hazardous substance, liquid, n.o.s.

14.3 Transport hazard class(es)

ADR/ADG/DOT, IMDG, or IATA : 9

14.4 Packing group

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

14.5 Environmental hazards

ADR/ADG/DOT, IMDG, or IATA : Environmentally hazardous substance, liquid, n.o.s.

14.6. Special precautions for user

ADR/ADG/DOT, IMDG, or IATA : Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

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

15. Regulatory information

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

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

International Information:

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

16. Other information

List of relevant H-Statements:

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

— H301: Toxic if swallowed.
— H302: Harmful if swallowed.
— H311: Toxic in contact with skin.
— H315: Causes skin irritation.
— H317: May cause an allergic skin reaction.
— H318: Causes serious eye damage.
— H319: Causes serious eye irritation.
— H361: Suspected of damaging fertility or the unborn child.
— H373: May cause damage to organs through prolonged or repeated exposure.

— H400: Very toxic to aquatic life.
— H410: Very toxic to aquatic life with long lasting effects.
— H411: Toxic to aquatic life with long lasting effects.
— H413: May cause long lasting harmful effects to aquatic life.

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.

D-UA-5YE
D-UAP-7YE
D-UAB-YE

Version G_1.0

2024/06/24

Safety Data Sheet

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

1.1. Product identifier

D-UA-5YE
D-UAP-7YE
D-UAB-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

Manufacturer's name: Roland DG Corporation
Address: 1-1-2 Shinmiyakoda, Hamana-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
Phone: + 81-53-484-1224 FAX: + 81-53-484-1226

E-mail:
Revised date: 24-June-2024

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as hazardous according to GHS.

Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Sensitisation (Skin)	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity (Repeated exposure)	Category 2
Hazardous to the aquatic environment (AcuteHazard)	Category 1
Hazardous to the aquatic environment (Chronic Hazard)	Category 1

2.2. GHS label elements, including precautionary statements

Pictgram(s)

Signal Word: Danger

Hazard Statement:

Harmful if swallowed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements — Prevention:

Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements — Response:

IF ON SKIN: Wash with plenty of soap and water.
IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Potential Health Effects:

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

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	% By Weight	GHS Classification
Benzyl acrylate	2495-35-4	20-30	Skin Irrit. 2: H315 Skin Sens. 1B: H317 Aquatic Acute 1: H400 Aquatic Chronic 1: H410
Hexamethylene Diacrylate	13048-33-4	20-30	Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1: H317
Morpholine, 4-(1-oxo-2-propenyl)	5117-12-4	10-20	Acute Tox. 4: H302 STOT RE 2: H373 Eye Dam. 1: H318 Skin Sens. 1: H317
2-Propenoic acid, 2-phenoxyethyl ester	48145-04-6	5-10	Skin Sens. 1A: H317 Repr. 2: H361 Aquatic Chronic 2: H411
2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester	7328-17-8	5-10	Acute Tox. 4: H302 Acute Tox. 3: H311 Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1A: H317 Aquatic Chronic 2: H411
2-Propenamide, N,N-dimethyl-	2680-03-7	5-10	Acute Tox. 3: H301 Acute Tox. 3: H311 Eye Damage 1: H318
Ethyl phenyl(2,4,6-trimethylbenzoyl) phosphinate	84434-11-7	1-5	Skin Sens. 1B: H317 Aquatic Chronic 2: H411
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	1-5	Aquatic Chronic 4: H413
4-Methoxyphenol	150-76-5	<1	Acute Tox. 4: H302 Eye Irrit. 2: H319 Skin Sens. 1: H317

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

4. First aid measures

4.1. Description of first aid measures

Eyes: In case of contact, immediately flush eyes with plenty of water for several minutes. Hold eyelids open during flushing. Call a physician.

Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

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

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

no information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

Water, High-pressure water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.
Flash Point: > 94deg.C

5.3. Advice for firefighters

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

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Sweep up material and dispose as waste following local regulations.

6.4. Reference to other sections

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

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s): Inkjet Printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

Derived No-Effect Level (DNEL)

— Hexamethylene Diacrylate:
[Long term exposure] 24.5 mg/m³
[Short term exposure] no hazard identified

— Morpholine, 4-(1-oxo-2-propenyl):
[Long term exposure] 132.24 mg/m³
[Short term exposure] 132.24 mg/m³

— 2-Propenoic acid, 2-phenoxyethyl ester:
[Long term exposure] 12 mg/m³
[Short term exposure] hazard unknown (no further information necessary)

— 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester:
[Long term exposure] 2.6 mg/m³
[Short term exposure] no hazard identified

— 2-Propenamide, N,N-dimethyl-:
[Long term exposure] 0.207 mg/m³
[Short term exposure] no hazard identified

— Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:
[Long term exposure] 4.93 mg/m³
[Short term exposure] no hazard identified

— Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide:
[Long term exposure] 21 mg/m³
[Short term exposure] hazard unknown (no further information necessary)

8.2. Exposure controls

Appropriate engineering controls

Provide general and/or local exhaust ventilation.

Respiratory protection:

Not requiredwhen sufficient ventilation is provided. In case of inadequate ventilation and exposure limits are exceeded or if irritation or other symptoms are experienced, use a NIOSH/MSHA or European Standard EN149 approved respirator (with activated carbon layer for organic vapour).

Hand protection:

Employee must wear appropriate protective impervious gloves to prevent contact with the ink. Recommended Chemical Protective Gloves are EN420/374 approved ethylene vinyl alcohol (EVOH) Gloves and Laminate gloves. Laminate gloves are made by cutting and then heat-sealing patterns of various hand sizes from laminated sheets of EVOH sealed between layers of polyethylene.

Eye protection:

Not required under suitable use as setting the ink on the printer. However, in case of direct contact to the ink, wear EN166 approved safety glasses.

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Yellow Liquid
Odour:	Characteristic odour
Odour threshold:	Not defined
pH:	Not applicable
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	> 94deg.C
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.0-1.1
Solubility(ies):	Slightly soluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available

Decomposition temperature:	No data available
Viscosity:	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Volatile organic compounds (VOC) content:	0.047 g/L

9.2 Other information

No information.

10. Stability and reactivity

10.1 Reactivity:

High temperatures and UV light may cause rapid polymerization.

10.2 Chemical stability:

Stable under normal temperature.

10.3 Possibility of hazardous reactions:

Not expected.

10.4 Conditions to avoid:

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

10.5 Incompatible materials:

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

10.6 Hazardous decomposition products:

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

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity:

Morpholine, 4-(1-oxo-2-propenyl)

LD50（oral）: 588mg/kgbw, LD50 (dermal): >2000mg/kgbw, LD50 (Inhal.): no data available

2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

LD50（oral）: ca.1106mg/kgbw., LD50 (dermal): no data available, LD50 (Inhal.): no data available

2-Propenamide, N,N-dimethyl-

LD50（oral）: >215-<464mg/kgbw, LD50 (dermal): no data available, LD50 (Inhal.): no data available

4-Methoxyphenol

LD50（oral）: no data available, LD50 (dermal): no data available, LD50 (Inhal.): no data available

Serious eye damage/eye irritation:

Causes serious eye damage.

• Morpholine, 4-(1-oxo-2-propenyl)
• 2-Propenamide, N,N-dimethyl-

Causes serious eye irritation.

• Hexamethylene Diacrylate
• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
• 4-Methoxyphenol

Skin corrosion/irritation:

Causes skin irritation.

• Benzyl acrylate
• Hexamethylene Diacrylate
• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

• Benzyl acrylate
• Hexamethylene Diacrylate
• Morpholine, 4-(1-oxo-2-propenyl)
• 2-Propenoic acid, 2-phenoxyethyl ester
• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
• Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
• 4-Methoxyphenol

Germ cell mutagenicity:

no data available.

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

• 2-Propenoic acid, 2-phenoxyethyl ester

Carcinogenicity:

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

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

no data available.

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

May cause damage to organs through prolonged or repeated exposure.

• Morpholine, 4-(1-oxo-2-propenyl)

Aspiration hazard:

no data available.

12. Ecological information

12.1. Toxicity:

Very toxic to aquatic life.

- Benzyl acrylate

Very toxic to aquatic life with long lasting effects.

- Benzyl acrylate

Toxic to aquatic life with long lasting effects.

- 2-Propenoic acid, 2-phenoxyethyl ester
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

May cause long lasting harmful effects to aquatic life.

- Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

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. Endocrine disrupting properties:

No data available

12.7. Other adverse effects:

No data available

13. Disposal considerations

13.1. Waste treatment methods

Product:	Dispose as hazardous waste. Packaging with product residues must be disposed of under the same conditions as the product itself.
Recommended waste code:	08 03 12* (waste ink containing dangerous substances)
Uncleaned packaging:	15 01 10* (packaging, the residues of dangerous substances or hazardous waste contain or are contaminated by dangerous substances or special wastes)
Recommendation:	Uncontaminated packaging can be recycled. Non-cleanable packaging must be disposed of in the same way as the substance.

14. Transport information

14.1 UN Class/UN Number

ADR/ADG/DOT, IMDG, or IATA : 3082

14.2 UN proper shipping name

ADR/ADG/DOT, IMDG, or IATA : Environmentall hazardous substance, liquid, n.o.s.

14.3 Transport hazard class(es)

ADR/ADG/DOT, IMDG, or IATA : 9

14.4 Packing group

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

14.5 Environmental hazards

ADR/ADG/DOT, IMDG, or IATA : Environmentally hazardous substance, liquid, n.o.s.

14.6. Special precautions for user

ADR/ADG/DOT, IMDG, or IATA : Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

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

15. Regulatory information

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

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

International Information:

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

16. Other information

List of relevant H-Statements:

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

— H301: Toxic if swallowed.
— H302: Harmful if swallowed.
— H311: Toxic in contact with skin.
— H315: Causes skin irritation.
— H317: May cause an allergic skin reaction.
— H318: Causes serious eye damage.
— H319: Causes serious eye irritation.
— H361: Suspected of damaging fertility or the unborn child.
— H373: May cause damage to organs through prolonged or repeated exposure.

— H400: Very toxic to aquatic life.
— H410: Very toxic to aquatic life with long lasting effects.
— H411: Toxic to aquatic life with long lasting effects.
— H413: May cause long lasting harmful effects to aquatic life.

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.

D-UA-5BK
D-UAP-7BK
D-UAB-BK

Version G_1.0

2024/06/24

Safety Data Sheet

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

1.1. Product identifier

D-UA-5BK
D-UAP-7BK
D-UAB-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

Manufacturer's name: Roland DG Corporation
Address: 1-1-2 Shinmiyakoda, Hamana-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
Phone: + 81-53-484-1224 FAX: + 81-53-484-1226

E-mail:
Revised date: 24-June-2024

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as hazardous according to GHS.

Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Sensitisation (Skin)	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity (Repeated exposure)	Category 2
Hazardous to the aquatic environment (AcuteHazard)	Category 1
Hazardous to the aquatic environment (Chronic Hazard)	Category 1

2.2. GHS label elements, including precautionary statements

Pictgram(s)

Signal Word: Danger

Hazard Statement:

Harmful if swallowed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements — Prevention:

Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements — Response:

IF ON SKIN: Wash with plenty of soap and water.
IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Potential Health Effects:

Eyes:	Causes severe eye injury which may persist for several days.
Skin:	Contact with skin may cause irritation, swelling or redness, allergic sensitization.
Inhalation:	Exposure to vapors (mist) may be harmful to the unborn child and at the risk of impaired fertility and irritate nose, throat/respiratory system.
Ingestion:	May cause injury of mouth, throat, and stomach.
Chronic Health Hazards:	Repeated skin contact may cause a persistent irritation or dermatitis.
Carcinogenicity:	This product contains Carbon black.IARC evaluated printing ink as a Group 3.(IARC Group 3: Not classifiable as to carcinogenicity to humans)
Others:	No information.

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	% By Weight	GHS Classification
Carbon Black	1333-86-4	1-5	Not classified as hazardous
Benzyl acrylate	2495-35-4	20-30	Skin Irrit. 2: H315 Skin Sens. 1B: H317 Aquatic Acute 1: H400 Aquatic Chronic 1: H410
Hexamethylene Diacrylate	13048-33-4	20-30	Skin Irrit. 2: H315 Eye Irrit. 2: H319

			Skin Sens. 1: H317
Morpholine, 4-(1-oxo-2-propenyl)	5117-12-4	10-20	Acute Tox. 4: H302 STOT RE 2: H373 Eye Dam. 1: H318 Skin Sens. 1: H317
2-Propenoic acid, 2-phenoxyethyl ester	48145-04-6	5-10	Skin Sens. 1A: H317 Repr. 2: H361 Aquatic Chronic 2: H411
2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester	7328-17-8	5-10	Acute Tox. 4: H302 Acute Tox. 3: H311 Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1A: H317 Aquatic Chronic 2: H411
2-Propenamide, N,N-dimethyl-	2680-03-7	5-10	Acute Tox. 3: H301 Acute Tox. 3: H311 Eye Damage 1: H318
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	5-10	Aquatic Chronic 4: H413
Ethyl phenyl(2,4,6-trimethylbenzoyl) phosphinate	84434-11-7	1-5	Skin Sens. 1B: H317 Aquatic Chronic 2: H411
4-Methoxyphenol	150-76-5	<1	Acute Tox. 4: H302 Eye Irrit. 2: H319 Skin Sens. 1: H317

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

4. First aid measures

4.1. Description of first aid measures

Eyes: In case of contact, immediately flush eyes with plenty of water for several minutes. Hold eyelids open during flushing. Call a physician.

Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

Eyes: Causes severe eye injury which may persist for several days.

Skin: Contact with skin may cause irritation, swelling or redness, allergic sensitization.

Inhalation: Exposure to vapors (mist) may be harmful to the unborn child and at the risk of impaired fertility and irritate nose, throat/respiratory system.

Ingestion: May cause injury of mouth, throat, and stomach.

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

no information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

Water, High-pressure water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.
Flash Point: > 94deg.C

5.3. Advice for firefighters

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

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Sweep up material and dispose as waste following local regulations.

6.4. Reference to other sections

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

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s): Inkjet Printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

Derived No-Effect Level (DNEL)

— Carbon Black:

[Long term exposure] no hazard identified

[Short term exposure] no hazard identified

— Hexamethylene Diacrylate:

[Long term exposure] 24.5 mg/m³

[Short term exposure] no hazard identified

— Morpholine, 4-(1-oxo-2-propenyl):

[Long term exposure] 132.24 mg/m³

[Short term exposure] 132.24 mg/m³

— 2-Propenoic acid, 2-phenoxyethyl ester:

[Long term exposure] 12 mg/m³

[Short term exposure] hazard unknown (no further information necessary)

— 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester:

[Long term exposure] 2.6 mg/m³

[Short term exposure] no hazard identified

— 2-Propenamide, N,N-dimethyl-:

[Long term exposure] 0.207 mg/m³

[Short term exposure] no hazard identified

— Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide:

[Long term exposure] 21 mg/m³

[Short term exposure] hazard unknown (no further information necessary)

— Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

[Long term exposure] 4.93 mg/m³

[Short term exposure] no hazard identified

8.2. Exposure controls

Appropriate engineering controls

Provide general and/or local exhaust ventilation.

Respiratory protection:

Not requiredwhen sufficient ventilation is provided. In case of inadequate ventilation and exposure limits are exceeded or if irritation or other symptoms are experienced, use a NIOSH/MSHA or European Standard EN149 approved respirator (with activated carbon layer for organic vapour).

Hand protection:

Employee must wear appropriate protective impervious gloves to prevent contact with the ink.
Recommended Chemical Protective Gloves are EN420/374 approved ethylene vinyl alcohol (EVOH) Gloves

and Laminate gloves. Laminate gloves are made by cutting and then heat-sealing patterns of various hand sizes from laminated sheets of EVOH sealed between layers of polyethylene.

Eye protection:

Not required under suitable use as setting the ink on the printer. However, in case of direct contact to the ink, wear EN166 approved safety glasses.

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Black Liquid
Odour:	Characteristic odour
Odour threshold:	Not defined
pH:	Not applicable
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	> 94deg.C
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.0-1.1
Solubility(ies):	Slightly soluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Volatile organic compounds (VOC) content:	0.047 g/L

9.2 Other information

No information.

10. Stability and reactivity

10.1 Reactivity:

High temperatures and UV light may cause rapid polymerization.

10.2 Chemical stability:

Stable under normal temperature.

10.3 Possibility of hazardous reactions:

Not expected.

10.4 Conditions to avoid:

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

10.5 Incompatible materials:

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

10.6 Hazardous decomposition products:

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

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity:

Morpholine, 4-(1-oxo-2-propenyl)

LD50（oral）: 588mg/kgbw, LD50 (dermal): >2000mg/kgbw, LD50 (Inhal.): no data available

2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

LD50（oral）: ca.1106mg/kgbw., LD50 (dermal): no data available, LD50 (Inhal.): no data available

2-Propenamide, N,N-dimethyl-

LD50（oral）: >215-<464mg/kgbw, LD50 (dermal): no data available, LD50 (Inhal.): no data available

4-Methoxyphenol

LD50（oral）: no data available, LD50 (dermal): no data available, LD50 (Inhal.): no data available

Serious eye damage/eye irritation:

Causes serious eye damage.

- Morpholine, 4-(1-oxo-2-propenyl)
- 2-Propenamide, N,N-dimethyl-

Causes serious eye irritation.

- Hexamethylene Diacrylate
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- 4-Methoxyphenol

Skin corrosion/irritation:

Causes skin irritation.

- Benzyl acrylate
- Hexamethylene Diacrylate
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

- Benzyl acrylate
- Hexamethylene Diacrylate
- Morpholine, 4-(1-oxo-2-propenyl)
- 2-Propenoic acid, 2-phenoxyethyl ester
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
- 4-Methoxyphenol

Germ cell mutagenicity:

no data available.

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

- 2-Propenoic acid, 2-phenoxyethyl ester

Carcinogenicity:

This product contains Carbon black.

IARC evaluated printing ink as a Group 3.

(IARC Group 3: Not classifiable as to carcinogenicity to humans)

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

no data available.

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

May cause damage to organs through prolonged or repeated exposure.

- Morpholine, 4-(1-oxo-2-propenyl)

Aspiration hazard:

no data available.

12. Ecological information

12.1. Toxicity:

Very toxic to aquatic life.

- Benzyl acrylate

Very toxic to aquatic life with long lasting effects.

• Benzyl acrylate

Toxic to aquatic life with long lasting effects.

• 2-Propenoic acid, 2-phenoxyethyl ester
• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
• Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

May cause long lasting harmful effects to aquatic life.

• Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

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. Endocrine disrupting properties:

No data available

12.7. Other adverse effects:

No data available

13. Disposal considerations

13.1. Waste treatment methods

Product:	Dispose as hazardous waste. Packaging with product residues must be disposed of under the same conditions as the product itself.
Recommended waste code:	08 03 12* (waste ink containing dangerous substances)
Uncleaned packaging:	15 01 10* (packaging, the residues of dangerous substances or hazardous waste contain or are contaminated by dangerous substances or special wastes)
Recommendation:	Uncontaminated packaging can be recycled. Non-cleanable packaging must be disposed of in the same way as the substance.

14. Transport information

14.1 UN Class/UN Number

ADR/ADG/DOT, IMDG, or IATA : 3082

14.2 UN proper shipping name

ADR/ADG/DOT, IMDG, or IATA : Environmentall hazardous substance, liquid, n.o.s.

14.3 Transport hazard class(es)

ADR/ADG/DOT, IMDG, or IATA : 9

14.4 Packing group

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

14.5 Environmental hazards

ADR/ADG/DOT, IMDG, or IATA : Environmentally hazardous substance, liquid, n.o.s.

14.6. Special precautions for user

ADR/ADG/DOT, IMDG, or IATA : Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

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

15. Regulatory information

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

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

International Information:

This product contains Carbon black.

IARC evaluated printing ink as a Group 3.

(IARC Group 3: Not classifiable as to carcinogenicity to humans

16. Other information

List of relevant H-Statements:

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

— H301: Toxic if swallowed.
— H302: Harmful if swallowed.
— H311: Toxic in contact with skin.
— H315: Causes skin irritation.
— H317: May cause an allergic skin reaction.
— H318: Causes serious eye damage.
— H319: Causes serious eye irritation.
— H361: Suspected of damaging fertility or the unborn child.
— H373: May cause damage to organs through prolonged or repeated exposure.
— H400: Very toxic to aquatic life.
— H410: Very toxic to aquatic life with long lasting effects.
— H411: Toxic to aquatic life with long lasting effects.

— H413: May cause long lasting harmful effects to aquatic life.

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.

D-UA-WH
D-UAP-7WH
D-UAB-WH

Version G_1.0

2024/06/24

Safety Data Sheet

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

1.1. Product identifier

D-UA-WH
D-UAP-7WH
D-UAB-WH

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

Manufacturer's name: Roland DG Corporation
Address: 1-1-2 Shinmiyakoda, Hamana-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
Phone: + 81-53-484-1224 FAX: + 81-53-484-1226

E-mail:
Revised date: 24-June-2024

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as hazardous according to GHS.

Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Sensitisation (Skin)	Category 1A
Specific target organ toxicity (Repeated exposure)	Category 2
Hazardous to the aquatic environment (AcuteHazard)	Category 1
Hazardous to the aquatic environment (Chronic Hazard)	Category 1

2.2. GHS label elements, including precautionary statements

Pictgram(s)

Signal Word: Danger

Hazard Statement:

Harmful if swallowed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements — Prevention:

Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements — Response:

IF ON SKIN: Wash with plenty of soap and water.
IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Potential Health Effects:

Eyes:	Causes severe eye injury which may persist for several days.
Skin:	Contact with skin may cause irritation, swelling or redness, allergic sensitization.
Inhalation:	Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion:	May cause injury of mouth, throat, and stomach.
Chronic Health Hazards:	Repeated skin contact may cause a persistent irritation or dermatitis.
Carcinogenicity:	This product contains Titanium dioxide.IARC evaluated printing ink as a Group 3.(IARC Group 3: Not classifiable as to carcinogenicity to humans)
Others:	No information.

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	% By Weight	GHS Classification
Titanium dioxide	13463-67-7	10-20	Not classified as hazardous
Benzyl acrylate	2495-35-4	30-40	Skin Irrit. 2: H315 Skin Sens. 1B: H317 Aquatic Acute 1: H400 Aquatic Chronic 1: H410
Morpholine, 4-(1-oxo-2-propenyl)	5117-12-4	10-20	Acute Tox. 4: H302 STOT RE 2: H373 Eye Dam. 1: H318 Skin Sens. 1: H317
Hexamethylene Diacrylate	13048-33-4	10-20	Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1: H317
Ethyl phenyl(2,4,6-trimethylbenzoyl) phosphinate	84434-11-7	10-20	Skin Sens. 1B: H317 Aquatic Chronic 2: H411
2-Propenamide, N,N-dimethyl-	2680-03-7	10-20	Acute Tox. 3: H301 Acute Tox. 3: H311 Eye Damage 1: H318
2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester	7328-17-8	1-5	Acute Tox. 4: H302 Acute Tox. 3: H311 Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1A: H317 Aquatic Chronic 2: H411
4-Methoxyphenol	150-76-5	<1	Acute Tox. 4: H302 Eye Irrit. 2: H319 Skin Sens. 1: H317

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

4. First aid measures

4.1. Description of first aid measures

Eyes: In case of contact, immediately flush eyes with plenty of water for several minutes. Hold eyelids open during flushing. Call a physician.

Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

Eyes: Causes severe eye injury which may persist for several days.

Skin:	Contact with skin may cause irritation, swelling or redness, allergic sensitization.
Inhalation:	Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion:	May cause injury of mouth, throat, and stomach.

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

no information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

Water, High-pressure water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.
Flash Point: > 94deg.C

5.3. Advice for firefighters

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

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Sweep up material and dispose as waste following local regulations.

6.4. Reference to other sections

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

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Put protection

wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s): Inkjet Printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

Derived No-Effect Level (DNEL)

— Titanium dioxide:

[Long term exposure] no hazard identified

[Short term exposure] no hazard identified

— Morpholine, 4-(1-oxo-2-propenyl):

[Long term exposure] 132.24 mg/m³

[Short term exposure] 132.24 mg/m³

— Hexamethylene Diacrylate:

[Long term exposure] 24.5 mg/m³

[Short term exposure] no hazard identified

— Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

[Long term exposure] 4.93 mg/m³

[Short term exposure] no hazard identified

— 2-Propenamide, N,N-dimethyl-:

[Long term exposure] 0.207 mg/m³

[Short term exposure] no hazard identified

— 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester:

[Long term exposure] 2.6 mg/m³

[Short term exposure] no hazard identified

8.2. Exposure controls

Appropriate engineering controls

Provide general and/or local exhaust ventilation.

Respiratory protection:

Not requiredwhen sufficient ventilation is provided. In case of inadequate ventilation and exposure limits are exceeded or if irritation or other symptoms are experienced, use a NIOSH/MSHA or European Standard EN149 approved respirator (with activated carbon layer for organic vapour).

Hand protection:

Employee must wear appropriate protective impervious gloves to prevent contact with the ink. Recommended Chemical Protective Gloves are EN420/374 approved ethylene vinyl alcohol (EVOH) Gloves and Laminate gloves. Laminate gloves are made by cutting and then heat-sealing patterns of various

hand sizes from laminated sheets of EVOH sealed between layers of polyethylene.

Eye protection:

Not required under suitable use as setting the ink on the printer. However, in case of direct contact to the ink, wear EN166 approved safety glasses.

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	White Liquid
Odour:	Characteristic odour
Odour threshold:	Not defined
pH:	Not applicable
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	> 94deg.C
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.1-1.2
Solubility(ies):	Slightly soluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Volatile organic compounds (VOC) content:	0.047 g/L

9.2 Other information

No information.

10. Stability and reactivity

10.1 Reactivity:

High temperatures and UV light may cause rapid polymerization.

10.2 Chemical stability:

Stable under normal temperature.

10.3 Possibility of hazardous reactions:

Not expected.

10.4 Conditions to avoid:

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

10.5 Incompatible materials:

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

10.6 Hazardous decomposition products:

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

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity:

Morpholine, 4-(1-oxo-2-propenyl)

LD50（oral）: 588mg/kgbw, LD50 (dermal): >2000mg/kgbw, LD50 (Inhal.): no data available

2-Propenamide, N,N-dimethyl-

LD50（oral）: >215-<464mg/kgbw, LD50 (dermal): no data available, LD50 (Inhal.): no data available

2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

LD50（oral）: ca.1106mg/kgbw., LD50 (dermal): no data available, LD50 (Inhal.): no data available

4-Methoxyphenol

LD50（oral）: no data available, LD50 (dermal): no data available, LD50 (Inhal.): no data available

Serious eye damage/eye irritation:

Causes serious eye damage.

- Morpholine, 4-(1-oxo-2-propenyl)
- 2-Propenamide, N,N-dimethyl-

Causes serious eye irritation.

- Hexamethylene Diacrylate
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- 4-Methoxyphenol

Skin corrosion/irritation:

Causes skin irritation.

- Benzyl acrylate
- Hexamethylene Diacrylate
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

- Benzyl acrylate
- Morpholine, 4-(1-oxo-2-propenyl)
- Hexamethylene Diacrylate
- Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- 4-Methoxyphenol

Germ cell mutagenicity:

no data available.

Reproductive toxicity:

no data available.

Carcinogenicity:

This product contains Titanium dioxide.

IARC evaluated printing ink as a Group 3.

(IARC Group 3: Not classifiable as to carcinogenicity to humans)

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

no data available.

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

May cause damage to organs through prolonged or repeated exposure.

- Morpholine, 4-(1-oxo-2-propenyl)

Aspiration hazard:

no data available.

12. Ecological information

12.1. Toxicity:

Very toxic to aquatic life.

- Benzyl acrylate

Very toxic to aquatic life with long lasting effects.

- Benzyl acrylate

Toxic to aquatic life with long lasting effects.

- Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

• 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

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. Endocrine disrupting properties:

No data available

12.7. Other adverse effects:

No data available

13. Disposal considerations

13.1. Waste treatment methods

Product:	Dispose as hazardous waste. Packaging with product residues must be disposed of under the same conditions as the product itself.
Recommended waste code:	08 03 12* (waste ink containing dangerous substances)
Uncleaned packaging:	15 01 10* (packaging, the residues of dangerous substances or hazardous waste contain or are contaminated by dangerous substances or special wastes)
Recommendation:	Uncontaminated packaging can be recycled. Non-cleanable packaging must be disposed of in the same way as the substance.

14. Transport information

14.1 UN Class/UN Number

ADR/ADG/DOT, IMDG, or IATA : 3082

14.2 UN proper shipping name

ADR/ADG/DOT, IMDG, or IATA : Environmentall hazardous substance, liquid, n.o.s.

14.3 Transport hazard class(es)

ADR/ADG/DOT, IMDG, or IATA : 9

14.4 Packing group

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

14.5 Environmental hazards

ADR/ADG/DOT, IMDG, or IATA : Environmentally hazardous substance, liquid, n.o.s.

14.6. Special precautions for user

ADR/ADG/DOT, IMDG, or IATA : Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

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

15. Regulatory information

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

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

International Information:

This product contains Titanium dioxide.

IARC evaluated printing ink as a Group 3.

(IARC Group 3: Not classifiable as to carcinogenicity to humans

16. Other information

List of relevant H-Statements:

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

— H301: Toxic if swallowed.
— H302: Harmful if swallowed.
— H311: Toxic in contact with skin.
— H315: Causes skin irritation.
— H317: May cause an allergic skin reaction.
— H318: Causes serious eye damage.
— H319: Causes serious eye irritation.
— H373: May cause damage to organs through prolonged or repeated exposure.
— H400: Very toxic to aquatic life.
— H410: Very toxic to aquatic life with long lasting effects.
— H411: Toxic to aquatic life with long lasting effects.

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.

D-UA-5GL
D-UAP-7GL
D-UAB-GL

Version G_1.0

2024/06/24

Safety Data Sheet

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

1.1. Product identifier

D-UA-5GL
D-UAP-7GL
D-UAB-GL

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

Manufacturer's name: Roland DG Corporation
Address: 1-1-2 Shinmiyakoda, Hamana-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103
Phone: + 81-53-484-1224 FAX: + 81-53-484-1226

E-mail:
Revised date: 24-June-2024

1.4. Emergency telephone:

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as hazardous according to GHS.

Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Sensitisation (Skin)	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity (Repeated exposure)	Category 2
Hazardous to the aquatic environment (AcuteHazard)	Category 1
Hazardous to the aquatic environment (Chronic Hazard)	Category 1

2.2. GHS label elements, including precautionary statements

Pictgram(s)

Signal Word: Danger

Hazard Statement:

Harmful if swallowed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements — Prevention:

Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements — Response:

IF ON SKIN: Wash with plenty of soap and water.
IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Potential Health Effects:

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

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	% By Weight	GHS Classification
Benzyl acrylate	2495-35-4	20-30	Skin Irrit. 2: H315 Skin Sens. 1B: H317 Aquatic Acute 1: H400 Aquatic Chronic 1: H410
Hexamethylene Diacrylate	13048-33-4	20-30	Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1: H317
Morpholine, 4-(1-oxo-2-propenyl)	5117-12-4	10-20	Acute Tox. 4: H302 STOT RE 2: H373 Eye Dam. 1: H318 Skin Sens. 1: H317
2-Propenoic acid, 2-phenoxyethyl ester	48145-04-6	5-10	Skin Sens. 1A: H317 Repr. 2: H361 Aquatic Chronic 2: H411
2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester	7328-17-8	5-10	Acute Tox. 4: H302 Acute Tox. 3: H311 Skin Irrit. 2: H315 Eye Irrit. 2: H319 Skin Sens. 1A: H317 Aquatic Chronic 2: H411
2-Propenamide, N,N-dimethyl-	2680-03-7	5-10	Acute Tox. 3: H301 Acute Tox. 3: H311 Eye Damage 1: H318
Ethyl phenyl(2,4,6-trimethylbenzoyl) phosphinate	84434-11-7	1-5	Skin Sens. 1B: H317 Aquatic Chronic 2: H411
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	1-5	Aquatic Chronic 4: H413
4-Methoxyphenol	150-76-5	<1	Acute Tox. 4: H302 Eye Irrit. 2: H319 Skin Sens. 1: H317

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

4. First aid measures

4.1. Description of first aid measures

Eyes: In case of contact, immediately flush eyes with plenty of water for several minutes. Hold eyelids open during flushing. Call a physician.

Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

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

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

no information

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

Water, High-pressure water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.
Flash Point: > 94deg.C

5.3. Advice for firefighters

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

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Sweep up material and dispose as waste following local regulations.

6.4. Reference to other sections

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

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s): Inkjet Printing

8. Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits:

Derived No-Effect Level (DNEL)

— Hexamethylene Diacrylate:

[Long term exposure] 24.5 mg/m³

[Short term exposure] no hazard identified

— Morpholine, 4-(1-oxo-2-propenyl):

[Long term exposure] 132.24 mg/m³

[Short term exposure] 132.24 mg/m³

— 2-Propenoic acid, 2-phenoxyethyl ester:

[Long term exposure] 12 mg/m³

[Short term exposure] hazard unknown (no further information necessary)

— 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester:

[Long term exposure] 2.6 mg/m³

[Short term exposure] no hazard identified

— 2-Propenamide, N,N-dimethyl-:

[Long term exposure] 0.207 mg/m³

[Short term exposure] no hazard identified

— Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

[Long term exposure] 4.93 mg/m³

[Short term exposure] no hazard identified

— Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide:

[Long term exposure] 21 mg/m³

[Short term exposure] hazard unknown (no further information necessary)

8.2. Exposure controls

Appropriate engineering controls

Provide general and/or local exhaust ventilation.

Respiratory protection:

Not requiredwhen sufficient ventilation is provided. In case of inadequate ventilation and exposure limits are exceeded or if irritation or other symptoms are experienced, use a NIOSH/MSHA or European

Standard EN149 approved respirator (with activated carbon layer for organic vapour).

Hand protection:

Employee must wear appropriate protective impervious gloves to prevent contact with the ink. Recommended Chemical Protective Gloves are EN420/374 approved ethylene vinyl alcohol (EVOH) Gloves and Laminate gloves. Laminate gloves are made by cutting and then heat-sealing patterns of various hand sizes from laminated sheets of EVOH sealed between layers of polyethylene.

Eye protection:

Not required under suitable use as setting the ink on the printer. However, in case of direct contact to the ink, wear EN166 approved safety glasses.

Skin protection:

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

Hygiene measures:

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

Environmental exposure control:

Avoid release to the environment.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Clear Liquid
Odour:	Characteristic odour
Odour threshold:	Not defined
pH:	Not applicable
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	> 94deg.C
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.0-1.1
Solubility(ies):	Slightly soluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

Explosive properties:	No data available
Oxidizing properties:	No data available
Volatile organic compounds (VOC) content:	0.047 g/L

9.2 Other information

No information.

10. Stability and reactivity

10.1 Reactivity:

High temperatures and UV light may cause rapid polymerization.

10.2 Chemical stability:

Stable under normal temperature.

10.3 Possibility of hazardous reactions:

Not expected.

10.4 Conditions to avoid:

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

10.5 Incompatible materials:

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

10.6 Hazardous decomposition products:

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

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity:

Morpholine, 4-(1-oxo-2-propenyl)

LD50（oral）: 588mg/kgbw, LD50 (dermal): >2000mg/kgbw, LD50 (Inhal.): no data available

2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

LD50（oral）: ca.1106mg/kgbw., LD50 (dermal): no data available, LD50 (Inhal.): no data available

2-Propenamide, N,N-dimethyl-

LD50（oral）: >215-<464mg/kgbw, LD50 (dermal): no data available, LD50 (Inhal.): no data available

4-Methoxyphenol

LD50（oral）: no data available, LD50 (dermal): no data available, LD50 (Inhal.): no data available

Serious eye damage/eye irritation:

Causes serious eye damage.

- Morpholine, 4-(1-oxo-2-propenyl)
- 2-Propenamide, N,N-dimethyl-

Causes serious eye irritation.

- Hexamethylene Diacrylate
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- 4-Methoxyphenol

Skin corrosion/irritation:

Causes skin irritation.

- Benzyl acrylate
- Hexamethylene Diacrylate
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

- Benzyl acrylate
- Hexamethylene Diacrylate
- Morpholine, 4-(1-oxo-2-propenyl)
- 2-Propenoic acid, 2-phenoxyethyl ester
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
- 4-Methoxyphenol

Germ cell mutagenicity:

no data available.

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

- 2-Propenoic acid, 2-phenoxyethyl ester

Carcinogenicity:

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

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

no data available.

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

May cause damage to organs through prolonged or repeated exposure.

- Morpholine, 4-(1-oxo-2-propenyl)

Aspiration hazard:

no data available.

12. Ecological information

12.1. Toxicity:

Very toxic to aquatic life.
- Benzyl acrylate

Very toxic to aquatic life with long lasting effects.
- Benzyl acrylate

Toxic to aquatic life with long lasting effects.
- 2-Propenoic acid, 2-phenoxyethyl ester
- 2-Propenoic acid, 2-(2-ethoxyethoxy)ethyl ester
- Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

May cause long lasting harmful effects to aquatic life.
- Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

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. Endocrine disrupting properties:

No data available

12.7. Other adverse effects:

No data available

13. Disposal considerations

13.1. Waste treatment methods

Product:	Dispose as hazardous waste. Packaging with product residues must be disposed of under the same conditions as the product itself.
Recommended waste code:	08 03 12* (waste ink containing dangerous substances)
Uncleaned packaging:	15 01 10* (packaging, the residues of dangerous substances or hazardous waste contain or are contaminated by dangerous substances or special wastes)
Recommendation:	Uncontaminated packaging can be recycled. Non-cleanable packaging must be disposed of in the same way as the substance.

14. Transport information

14.1 UN Class/UN Number

ADR/ADG/DOT, IMDG, or IATA : 3082

14.2 UN proper shipping name

ADR/ADG/DOT, IMDG, or IATA : Environmentall hazardous substance, liquid, n.o.s.

14.3 Transport hazard class(es)

ADR/ADG/DOT, IMDG, or IATA : 9

14.4 Packing group

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

14.5 Environmental hazards

ADR/ADG/DOT, IMDG, or IATA : Environmentally hazardous substance, liquid, n.o.s.

14.6. Special precautions for user

ADR/ADG/DOT, IMDG, or IATA : Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

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

15. Regulatory information

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

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

International Information:

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

16. Other information

List of relevant H-Statements:

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

— H301: Toxic if swallowed.
— H302: Harmful if swallowed.
— H311: Toxic in contact with skin.
— H315: Causes skin irritation.
— H317: May cause an allergic skin reaction.
— H318: Causes serious eye damage.
— H319: Causes serious eye irritation.
— H361: Suspected of damaging fertility or the unborn child.
— H373: May cause damage to organs through prolonged or repeated exposure.
— H400: Very toxic to aquatic life.
— H410: Very toxic to aquatic life with long lasting effects.

— H411: Toxic to aquatic life with long lasting effects.
— H413: May cause long lasting harmful effects to aquatic life.

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.