Safety Data Sheet

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

1.1. Product identifier

E-US-GL10

UFI: QWUE-JWM6-7DKE-F1R1

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

Inkjet Printing

1.3. Details of the supplier of the safety data sheet

Manufacture's name: Roland DG Corporation

Address: 1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103

Phone: + 81-53-484-1224 FAX: + 81-53-484-1226

Supplier: ROLAND DG EMEA NV

Address: BELL-TELEPHONELAAN 2G
B-2440 GEEL
BELGIUM
Phone: +32 14575911

1.4. Emergency telephone

IE	
National Poisons Information Centre	+353 18 09 25 66
Poisons Information Centre of Ireland	+353 18 37 99 64 (medical professionals) +353 18 09 21 66 (public)

2. Hazard identification

2.1. Classification of the substance or mixture

This product is classified as hazardous according to CLP criteria.

Skin irritation---------- Category 2
Eye irritation---------- Category 2
Skin sensitiser---------- Category 1A
Reproductive toxicity---------- Category 2
Specific target organ toxicity — repeated exposure---------- Category 2
Long-term (chronic) aquatic hazard---------- Category 2

2.2. GHS label elements, including precautionary statements

Pictgram(s)

Signal Word: Warning

Hazard Statement:

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

Precautionary statements — Prevention:

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

Precautionary statements — Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation or rash occurs: Get medical advice/attention.
IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

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.	EC No.	EU regis-tration No.	% By Weight	Classification EC No.1272/2008
2-Propenoic acid, 2-phenoxyethyl ester	48145-04-6	256-360-6	N/A for the moment	30-60	Skin Sens. 1A: H317 Repr. 2: H361 Aquatic Chronic 2: H411
Cyclic trimethylolpropane formal acrylate	66492-51-1	266-380-7	N/A for the moment	10-30	Skin Irrit. 2: H315 Skin Sens. 1B: H317 Aquatic Chronic 2: H411
4-(1,1-dimethylethyl) cyclohexyl acrylate	84100-23-2	282-104-8	N/A for the moment	<10	Skin Irrit. 2: H315 Eye Irrit. 2A: H319 Skin Sens. 1A: H317 STOT Single Exp. 3: H335 Aquatic Acute 1: H400 Aquatic Chronic 2: H411
1-vinylhexahydro-2H-azepin-2-one	2235-00-9	218-787-6	01-2119977109-27	<10	Acute Tox. 4: H302 Acute Tox. 4: H312 Eye Irrit. 2A: H319 Skin Sens. 1B: H317 STOT Rep. Exp. 1: H372
Diphenyl(2,4,6-trimethylbenzoyl) phosphine oxide	75980-60-8	278-355-8	01-2119972295-29	<10	Repr. 2: H361
Neopentylglycol propoxylate diacrylate	84170-74-1	CBI	N/A for the moment	1-5	Skin Sens. 1B: H317 Aquatic Chronic 2: H411
2,6-Di-tert-butyl-4-methylphenol	128-37-0	CBI	N/A for the moment	<0.5	Aquatic Chronic 1: H410

† CBI: Confidential Business Information
‡ 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 clothingand 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 neededNo information

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)

— 2-Propenoic acid, 2-phenoxyethyl ester:

[Long term exposure] 12 mg/m³

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

— Cyclic trimethylolpropane formal acrylate:

[Long term exposure] no hazard identified

[Short term exposure] no hazard identified

— 4-(1,1-dimethylethyl)cyclohexyl acrylate:

[Long term exposure] 2.5 mg/m³

[Short term exposure] no hazard identified

— 1-vinylhexahydro-2H-azepin-2-one:

[Long term exposure] 4.9 mg/m³

[Short term exposure] no hazard identified

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

[Long term exposure] 0.822 mg/m³

[Short term exposure] no hazard identified

— Neopentylglycol propoxylate diacrylate :

[Long term exposure] 32.9 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:---------- Physical state: liquid Colour: clear
Odour:---------- Strong ester smell
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:---------- > 94 °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):---------- Water solubility: 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

9.2. Other information----------No data available

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:

1-vinylhexahydro-2H-azepin-2-one

LD50（oral）: 1114mg/kg, LD50 (dermal): 1700mg/kg, LD50 (Inhal.): no data available

Serious eye damage/eye irritation:

Causes serious eye irritation.

- 4-(1,1-dimethylethyl)cyclohexyl acrylate
- 1-vinylhexahydro-2H-azepin-2-one

Skin corrosion/irritation:

Causes skin irritation.

- Cyclic trimethylolpropane formal acrylate
- 4-(1,1-dimethylethyl)cyclohexyl acrylate

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

- 2-Propenoic acid, 2-phenoxyethyl ester
- Cyclic trimethylolpropane formal acrylate
- 4-(1,1-dimethylethyl)cyclohexyl acrylate
- 1-vinylhexahydro-2H-azepin-2-one
- Neopentylglycol propoxylate diacrylate

Germ cell mutagenicity:

no data available.

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

- 2-Propenoic acid, 2-phenoxyethyl ester
- Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

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):

Causes damage to organs through prolonged or repeated exposure.

- 1-vinylhexahydro-2H-azepin-2-one

Aspiration hazard:

no data available.

12. Ecological information

12.1. Toxicity:

Very toxic to aquatic life.

- 4-(1,1-dimethylethyl)cyclohexyl acrylate

Very toxic to aquatic life with long lasting effects.

- 2,6-Di-tert-butyl-4-methylphenol

Toxic to aquatic life with long lasting effects.

- 2-Propenoic acid, 2-phenoxyethyl ester
- Cyclic trimethylolpropane formal acrylate

• 4-(1,1-dimethylethyl)cyclohexyl acrylate
• Neopentylglycol propoxylate diacrylate

12.2. Persistence and degradability:

No data available

12.3. Bioaccumulative potential:

No data available

12.4. Mobility in soil:

No data available

12.5. Results of PBT and vPvB assessment:

Has not carried out PBT and vPvB assessment.

12.6. Other adverse effects:

No data available

13. Disposal considerations

13.1. Waste treatment methods

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

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

(EC) No 1907/2006 Authorisation:	Not regulated
(EC) No 1907/2006 SVHC:	1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-
(EC) No 1005/2009:	Not regulated
(EC) No 850/2004:	Not regulated
(EU) No 649/2012:	Not regulated

15.2. Chemical safety assessment

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

16. Other Information

List of relevant H-Statements:

List of relevant H-Statements:

— H302: Harmful if swallowed.

— H312: Harmful in contact with skin.

— H315: Causes skin irritation.

— H317: May cause an allergic skin reaction.

— H319: Causes serious eye irritation.

— H335: May cause respiratory irritation.

— H361: Suspected of damaging fertility or the unborn child.

— H372: Causes 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.