

Safety Data Sheet

1. Identification of the Substance/mixture and the Company/ Undertaking

Product Code : TR2RO Cyan

Manufacturer : REDGiant, Inc

Address: 37 MTV 27-ro, 58 beon-gil, Jeowang-dong, Siheung-si, Gyeonggi-do, 15118 , Korea

Tel : 82-2-837-0329 Fax : 82-31-311-0130

Use of the product: Inkjet Printing

2. Hazards Identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Acute toxicity -oral	Category 5
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Precautionary statement(s)

Prevention	Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention.

2.2. OSHA regulatory status

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

2.3. Potential health effects

Likely route of exposure: Eye, skin, inhalation or oral.

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

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

Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia..

Ingestion: May cause upset stomach.

Chronic Health Hazards: None Known.

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

2.4. Potential environmental effects

See section 12 for Ecological information.

3. Composition / Information on Hazardous Ingredients

Chemical nature: mixture

Composition	C.A.S No.	EC No.	% by Weight	Classification EC No. 1272/2008
Diethylene glycol diethyl ether	112-36-7	203-963-7	50-65	Skin Irrit. 2: H315
Butyrolactone	96-48-0	202-509-2	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
2-(2-Ethoxyethoxy)ethyl acetate	112-15-2	203-940-1	5-15	Eye Irrit. 2: H319
Synthetic resin	C.B.I	C.B.I	1-10	Not classified as hazardous
Colorant	C.B.I	C.B.I	1-5	Not classified as hazardous

* C.B.I : Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
Hold eyelids open during flushing. Call a physician.

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

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

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

Eyes: Non-corrosive but causes irreversible eye effects.

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

Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.

Ingestion: May cause upset stomach.

4.3. Indication of immediate medical attention and special treatment needed

No information.

5. Fire Fighting Measures

5.1. Flammable properties:

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

Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media: Water spray, dry chemical, CO₂ or foam.

Unsuitable extinguishing media: No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

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

Protective equipment and precautions for firefighters

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

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

Dike spill. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

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

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure cartridge is dry before insertion into printer housing.

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:-

EU:

DNEL(Derived No Effect Level)

Components	Long term exposure	Short term exposure
Diethylene glycol diethyl ether	50.05mg/m ³	-
γ-butyrolactone	130mg/m ³	958mg/m ³

REACH Toxicological Information (Workers - Hazard via inhalation route)

8.2. Exposure Controls

Occupational exposure control: Provide general and/or local exhaust ventilation.

Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Cyan Liquid
Odor:	Slightly
pH:	Not applicable

Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	No data available
Oxidizing properties:	None
Vapor pressure:	No data available
Relative density:	No data available
Solubility:	No data available
Water Solubility:	Lightly Soluble
Partition coefficient:n-octanol/water:	No data available
Viscosity:	No data available
Vapor density:	Greater than 1 (air=1)
Evaporation rate:	No data available
Melting point:	No data available

10. Stability and Reactivity

10.1. Reactivity:	Stable under normal temperature
10.2. Possibility of hazardous reactions:	Not expected
10.3. Chemical stability:	Stable under normal temperature
10.4. Conditions to avoid:	High and freezing temperatures
10.5. Incompatible materials:	Oxidizers and explosives
10.6. Hazardous decomposition products:	No data available

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether
LD50 (oral-rat) 4790 mg/kg
LD50 (skin-rat) No data available
 γ -butyrolactone
LD50 (oral-rat) 1580 mg/kg
LD50 (skin-marmot) 5600 mg/kg
2-(2-Ethoxyethoxy)ethyl acetate
LD50 (oral-rat) 11000 mg/kg
LD50 (oral-rabbit) 4400 mg/kg

Skin corrosion/irritation:	No data available	Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available	Causes serious eye damage. (γ -butyrolactone)
Respiratory or skin sensitisation:	No data available	

Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen.
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

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

15. Regulatory Information

EU Information:

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

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

US Information:

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

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

California Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

International Information:

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

16. Other information

List of relevant H-Statements:

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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. REDGiant, Inc does not warrant the completeness or accuracy of the information contained herein. None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

Safety Data Sheet

1. Identification of the Substance/mixture and the Company/ Undertaking

Product Code : **TR2RO Magenta**

Manufacturer : REDGiant, Inc

Address: 37 MTV 27-ro, 58 beon-gil, Jeowang-dong, Siheung-si, Gyeonggi-do, 15118 , Korea

Tel : 82-2-837-0329 Fax : 82-31-311-0130

Use of the product: Inkjet Printing

2. Hazards Identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Acute toxicity -oral	Category 5
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Precautionary statement(s)

Prevention	Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention.

2.3. OSHA regulatory status

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

2.4. Potential health effects

Likely route of exposure: Eye, skin, inhalation or oral.

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

2.5. Potential environmental effects

See section 12 for Ecological information.

3. Composition / Information on Hazardous Ingredients

Chemical nature: mixture

Composition	C.A.S No.	EC No.	% by Weight	Classification EC No. 1272/2008
Diethylene glycol diethyl ether	112-36-7	203-963-7	50-65	Skin Irrit. 2: H315
Butyrolactone	96-48-0	202-509-2	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
2-(2-Ethoxyethoxy)ethyl acetate	112-15-2	203-940-1	5-15	Eye Irrit. 2: H319
Synthetic resin	C.B.I	C.B.I	1-10	Not classified as hazardous
Colorant	C.B.I	C.B.I	1-5	Not classified as hazardous

* C.B.I : Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
Skin	In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.. If swelling or redness occurs, call a physician.
Inhalation	If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

Eyes:	Non-corrosive but causes irreversible eye effects.
Skin:	Contact with skin may cause irritation, swelling or redness.
Inhalation:	Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion:	May cause upset stomach.

4.3. Indication of immediate medical attention and special treatment needed

No information.

5. Fire Fighting Measures

5.1. Flammable properties:

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

Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media: Water spray, dry chemical, CO₂ or foam.

Unsuitable extinguishing media: No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

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

Protective equipment and precautions for firefighters

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

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

Dike spill. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

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

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure cartridge is dry before insertion into printer housing.

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:-

EU:

DNEL(Derived No Effect Level)

components	Long term exposure	Short term exposure
Diethylene glycol diethyl ether	50.05mg/m ³	-
γ-butyrolactone	130mg/m ³	958mg/m ³

REACH Toxicological Information (Workers - Hazard via inhalation route)

8.2. Exposure Controls

Occupational exposure control: Provide general and/or local exhaust ventilation.

Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Magenta Liquid
Odor:	Slightly

pH:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	No data available
Oxidizing properties:	None
Vapor pressure:	No data available
Relative density:	No data available
Solubility:	No data available
Water Solubility:	Lightly Soluble
Partition coefficient:n-octanol/water:	No data available
Viscosity:	No data available
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

10. Stability and Reactivity

10.1. Reactivity:	Stable under normal temperature
10.2. Possibility of hazardous reactions:	Not expected
10.3. Chemical stability:	Stable under normal temperature
10.4. Conditions to avoid:	High and freezing temperatures
10.5. Incompatible materials:	Oxidizers and explosives
10.6. Hazardous decomposition products:	No data available

11. Toxicological Information

Acute toxicity:	Diethylene glycol diethyl ether LD50 (oral-rat) 4790 mg/kg LD50 (skin-rat) No data available γ -butyrolactone LD50 (oral-rat) 1580 mg/kg LD50 (skin-marmot) 5600 mg/kg 2-(2-Ethoxyethoxy)ethyl acetate LD50 (oral-rat) 11000 mg/kg LD50 (oral-rabbit) 4400 mg/kg
Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available Causes serious eye damage. (γ -butyrolactone)

Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen.
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

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

15. Regulatory Information

EU Information:

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

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

US Information:

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

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

California Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

International Information:

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

16. Other information

List of relevant H-Statements:

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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. REDGiant, Inc does not warrant the completeness or accuracy of the information contained herein. None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

Safety Data Sheet

1. Identification of the Substance/mixture and the Company/ Undertaking

Product Code : TR2RO Yellow

Manufacturer : REDGiant, Inc

Address: 37 MTV 27-ro, 58 beon-gil, Jeowang-dong, Siheung-si, Gyeonggi-do, 15118 , Korea

Tel : 82-2-837-0329 Fax : 82-31-311-0130

Use of the product: Inkjet Printing

2. Hazards Identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Acute toxicity -oral	Category 5
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Precautionary statement(s)

Prevention	Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention.

2.3. OSHA regulatory status

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

2.3. Potential health effects

Likely route of exposure: Eye, skin, inhalation or oral.

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

2.5. Potential environmental effects

See section 12 for Ecological information.

3. Composition / Information on Hazardous Ingredients

Chemical nature: mixture

Composition	C.A.S No.	EC No.	% by Weight	Classification EC No. 1272/2008
Diethylene glycol diethyl ether	112-36-7	203-963-7	50-65	Skin Irrit. 2: H315
Butyrolactone	96-48-0	202-509-2	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
2-(2-Ethoxyethoxy)ethyl acetate	112-15-2	203-940-1	5-15	Eye Irrit. 2: H319
Synthetic resin	C.B.I	C.B.I	1-10	Not classified as hazardous
Colorant	C.B.I	C.B.I	1-5	Not classified as hazardous

* C.B.I : Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
Skin	In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.. If swelling or redness occurs, call a physician.
Inhalation	If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

Eyes:	Non-corrosive but causes irreversible eye effects.
Skin:	Contact with skin may cause irritation, swelling or redness.
Inhalation:	Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion:	May cause upset stomach.

4.3. Indication of immediate medical attention and special treatment needed

No information.

5. Fire Fighting Measures

5.1. Flammable properties:

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

Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media: Water spray, dry chemical, CO₂ or foam.

Unsuitable extinguishing media: No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

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

Protective equipment and precautions for firefighters

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

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

Dike spill. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

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

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure cartridge is dry before insertion into printer housing.

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:-

EU:

DNEL(Derived No Effect Level)

components	Long term exposure	Short term exposure
Diethylene glycol diethyl ether	50.05mg/m ³	-
γ-butyrolactone	130mg/m ³	958mg/m ³

REACH Toxicological Information (Workers - Hazard via inhalation route)

8.2. Exposure Controls

Occupational exposure control: Provide general and/or local exhaust ventilation.

Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Yellow Liquid
Odor:	Slightly

pH:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	No data available
Oxidizing properties:	None
Vapor pressure:	No data available
Relative density:	No data available
Solubility:	No data available
Water Solubility:	Lightly Soluble
Partition coefficient:n-octanol/water:	No data available
Viscosity:	No data available
Vapor density:	Greater than 1 (air=1)
Evaporation rate:	No data available
Melting point:	No data available

10. Stability and Reactivity

10.1. Reactivity:	Stable under normal temperature
10.2. Possibility of hazardous reactions:	Not expected
10.3. Chemical stability:	Stable under normal temperature
10.4. Conditions to avoid:	High and freezing temperatures
10.5. Incompatible materials:	Oxidizers and explosives
10.6. Hazardous decomposition products:	No data available

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether
LD50 (oral-rat) 4790 mg/kg
LD50 (skin-rat) No data available
γ -butyrolactone
LD50 (oral-rat) 1580 mg/kg
LD50 (skin-marmot) 5600 mg/kg
2-(2-Ethoxyethoxy)ethyl acetate
LD50 (oral-rat) 11000 mg/kg
LD50 (oral-rabbit) 4400 mg/kg

Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available Causes serious eye damage. (γ -butyrolactone)

Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen.
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

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

15. Regulatory Information

EU Information:

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

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

US Information:

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

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

California Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

International Information:

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

16. Other information

List of relevant H-Statements:

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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. REDGiant, Inc does not warrant the completeness or accuracy of the information contained herein. None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

Safety Data Sheet

1. Identification of the Substance/mixture and the Company/ Undertaking

Product Code : TR2RO Black

Manufacturer : REDGiant,Inc

Address: 37 MTV 27-ro, 58 beon-gil, Jeowang-dong, Siheung-si, Gyeonggi-do, 15118 , Korea

Tel : 82-2-837-0329 Fax : 82-31-311-0130

Use of the product: Inkjet Printing

2. Hazards Identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Acute toxicity -oral	Category 5
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Precautionary statement(s)

Prevention	Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention.

2.2. OSHA regulatory status

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

2.3. Potential health effects

Likely route of exposure: Eye, skin, inhalation or oral.

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

2.4. Potential environmental effects

See section 12 for Ecological information.

3. Composition / Information on Hazardous Ingredients

Chemical nature: mixture

Composition	C.A.S No.	EC No.	% by Weight	Classification EC No. 1272/2008
Diethylene glycol diethyl ether	112-36-7	203-963-7	50-65	Skin Irrit. 2: H315
Butyrolactone	96-48-0	202-509-2	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
2-(2-Ethoxyethoxy)ethyl acetate	112-15-2	203-940-1	5-15	Eye Irrit. 2: H319
Synthetic resin	C.B.I	C.B.I	1-10	Not classified as hazardous
Colorant	C.B.I	C.B.I	1-5	Not classified as hazardous

* C.B.I : Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
Skin	In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.. If swelling or redness occurs, call a physician.
Inhalation	If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

Eyes:	Non-corrosive but causes irreversible eye effects.
Skin:	Contact with skin may cause irritation, swelling or redness.
Inhalation:	Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion:	May cause upset stomach.

4.3. Indication of immediate medical attention and special treatment needed

No information.

5. Fire Fighting Measures

5.1. Flammable properties:

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

Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media: Water spray, dry chemical, CO₂ or foam.

Unsuitable extinguishing media: No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

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

Protective equipment and precautions for firefighters

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

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

Dike spill. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

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

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure cartridge is dry before insertion into printer housing.

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:-

EU:

DNEL(Derived No Effect Level)

components	Long term exposure	Short term exposure
Diethylene glycol diethyl ether	50.05mg/m ³	-
γ-butyrolactone	130mg/m ³	958mg/m ³

REACH Toxicological Information (Workers - Hazard via inhalation route)

8.2. Exposure Controls

Occupational exposure control: Provide general and/or local exhaust ventilation.

Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Black Liquid
Odor:	Slightly

pH:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	No data available
Oxidizing properties:	None
Vapor pressure:	No data available
Relative density:	No data available
Solubility:	No data available
Water Solubility:	Lightly Soluble
Partition coefficient:n-octanol/water:	No data available
Viscosity:	No data available
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

10. Stability and Reactivity

10.1. Reactivity:	Stable under normal temperature
10.2. Possibility of hazardous reactions:	Not expected
10.3. Chemical stability:	Stable under normal temperature
10.4. Conditions to avoid:	High and freezing temperatures
10.5. Incompatible materials:	Oxidizers and explosives
10.6. Hazardous decomposition products:	No data available

11. Toxicological Information

Acute toxicity:	Diethylene glycol diethyl ether LD50 (oral-rat) 4790 mg/kg LD50 (skin-rat) No data available γ -butyrolactone LD50 (oral-rat) 1580 mg/kg LD50 (skin-marmot) 5600 mg/kg 2-(2-Ethoxyethoxy)ethyl acetate LD50 (oral-rat) 11000 mg/kg LD50 (oral-rabbit) 4400 mg/kg
Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available Causes serious eye damage. (γ -butyrolactone)

Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	The product contains Carbon black. IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

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

15. Regulatory Information

EU Information:

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

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

US Information:

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

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

California Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

International Information:

The product contains Carbon black.

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

16. Other information

List of relevant H-Statements:

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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. REDGiant,Inc does not warrant the completeness or accuracy of the information contained herein. None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

Safety Data Sheet

1. Identification of the Substance/mixture and the Company/ Undertaking

Product Code : TR2RO LightCyan

Manufacturer : REDGiant, Inc

Address: 37 MTV 27-ro, 58 beon-gil, Jeowang-dong, Siheung-si, Gyeonggi-do, 15118 , Korea

Tel : 82-2-837-0329 Fax : 82-31-311-0130

Use of the product: Inkjet Printing

2. Hazards Identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Acute toxicity -oral	Category 5
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Precautionary statement(s)

Prevention	Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention.

2.2. OSHA regulatory status

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

2.3. Potential health effects

Likely route of exposure: Eye, skin, inhalation or oral.

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

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

Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia..

Ingestion: May cause upset stomach.

Chronic Health Hazards: None Known.

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

2.4. Potential environmental effects

See section 12 for Ecological information.

3. Composition / Information on Hazardous Ingredients

Chemical nature: mixture

Composition	C.A.S No.	EC No.	% by Weight	Classification EC No. 1272/2008
Diethylene glycol diethyl ether	112-36-7	203-963-7	50-65	Skin Irrit. 2: H315
Butyrolactone	96-48-0	202-509-2	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
2-(2-Ethoxyethoxy)ethyl acetate	112-15-2	203-940-1	5-15	Eye Irrit. 2: H319
Synthetic resin	C.B.I	C.B.I	1-10	Not classified as hazardous
Colorant	C.B.I	C.B.I	< 2	Not classified as hazardous

* C.B.I : Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
Hold eyelids open during flushing. Call a physician.

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

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

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

Eyes: Non-corrosive but causes irreversible eye effects.

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

Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.

Ingestion: May cause upset stomach.

4.3. Indication of immediate medical attention and special treatment needed

No information.

5. Fire Fighting Measures

5.1. Flammable properties:

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

Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media: Water spray, dry chemical, CO₂ or foam.

Unsuitable extinguishing media: No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

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

Protective equipment and precautions for firefighters

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

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

Dike spill. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

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

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure cartridge is dry before insertion into printer housing.

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:-

EU:

DNEL(Derived No Effect Level)

Components	Long term exposure	Short term exposure
Diethylene glycol diethyl ether	50.05mg/m ³	-
γ-butyrolactone	130mg/m ³	958mg/m ³

REACH Toxicological Information (Workers - Hazard via inhalation route)

8.2. Exposure Controls

Occupational exposure control: Provide general and/or local exhaust ventilation.

Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Cyan Liquid
Odor:	Slightly
pH:	Not applicable

Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	No data available
Oxidizing properties:	None
Vapor pressure:	No data available
Relative density:	No data available
Solubility:	No data available
Water Solubility:	Lightly Soluble
Partition coefficient:n-octanol/water:	No data available
Viscosity:	No data available
Vapor density:	Greater than 1 (air=1)
Evaporation rate:	No data available
Melting point:	No data available

10. Stability and Reactivity

10.1. Reactivity:	Stable under normal temperature
10.2. Possibility of hazardous reactions:	Not expected
10.3. Chemical stability:	Stable under normal temperature
10.4. Conditions to avoid:	High and freezing temperatures
10.5. Incompatible materials:	Oxidizers and explosives
10.6. Hazardous decomposition products:	No data available

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether
LD50 (oral-rat) 4790 mg/kg
LD50 (skin-rat) No data available
 γ -butyrolactone
LD50 (oral-rat) 1580 mg/kg
LD50 (skin-marmot) 5600 mg/kg
2-(2-Ethoxyethoxy)ethyl acetate
LD50 (oral-rat) 11000 mg/kg
LD50 (oral-rabbit) 4400 mg/kg

Skin corrosion/irritation:	No data available	Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available	Causes serious eye damage. (γ -butyrolactone)
Respiratory or skin sensitisation:	No data available	

Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen.
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

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

15. Regulatory Information

EU Information:

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

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

US Information:

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

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

California Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

International Information:

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

16. Other information

List of relevant H-Statements:

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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. REDGiant, Inc does not warrant the completeness or accuracy of the information contained herein. None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

Safety Data Sheet

1. Identification of the Substance/mixture and the Company/ Undertaking

Product Code : **TR2RO LightMagenta**

Manufacturer : REDGiant,Inc

Address: 37 MTV 27-ro, 58 beon-gil, Jeowang-dong, Siheung-si, Gyeonggi-do, 15118 , Korea

Tel : 82-2-837-0329 Fax : 82-31-311-0130

Use of the product: Inkjet Printing

2. Hazards Identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Acute toxicity -oral	Category 5
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Precautionary statement(s)

Prevention	Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention.

2.3. OSHA regulatory status

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

2.4. Potential health effects

Likely route of exposure: Eye, skin, inhalation or oral.

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

2.5. Potential environmental effects

See section 12 for Ecological information.

3. Composition / Information on Hazardous Ingredients

Chemical nature: mixture

Composition	C.A.S No.	EC No.	% by Weight	Classification EC No. 1272/2008
Diethylene glycol diethyl ether	112-36-7	203-963-7	50-65	Skin Irrit. 2: H315
Butyrolactone	96-48-0	202-509-2	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
2-(2-Ethoxyethoxy)ethyl acetate	112-15-2	203-940-1	5-15	Eye Irrit. 2: H319
Synthetic resin	C.B.I	C.B.I	1-10	Not classified as hazardous
Colorant	C.B.I	C.B.I	< 2	Not classified as hazardous

* C.B.I : Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
Skin	In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.. If swelling or redness occurs, call a physician.
Inhalation	If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

Eyes:	Non-corrosive but causes irreversible eye effects.
Skin:	Contact with skin may cause irritation, swelling or redness.
Inhalation:	Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion:	May cause upset stomach.

4.3. Indication of immediate medical attention and special treatment needed

No information.

5. Fire Fighting Measures

5.1. Flammable properties:

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

Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media: Water spray, dry chemical, CO₂ or foam.

Unsuitable extinguishing media: No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

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

Protective equipment and precautions for firefighters

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

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

Dike spill. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

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

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure cartridge is dry before insertion into printer housing.

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:-

EU:

DNEL(Derived No Effect Level)

components	Long term exposure	Short term exposure
Diethylene glycol diethyl ether	50.05mg/m ³	-
γ -butyrolactone	130mg/m ³	958mg/m ³

REACH Toxicological Information (Workers - Hazard via inhalation route)

8.2. Exposure Controls

Occupational exposure control: Provide general and/or local exhaust ventilation.

Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Magenta Liquid
Odor:	Slightly

pH:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	No data available
Oxidizing properties:	None
Vapor pressure:	No data available
Relative density:	No data available
Solubility:	No data available
Water Solubility:	Lightly Soluble
Partition coefficient:n-octanol/water:	No data available
Viscosity:	No data available
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

10. Stability and Reactivity

10.1. Reactivity:	Stable under normal temperature
10.2. Possibility of hazardous reactions:	Not expected
10.3. Chemical stability:	Stable under normal temperature
10.4. Conditions to avoid:	High and freezing temperatures
10.5. Incompatible materials:	Oxidizers and explosives
10.6. Hazardous decomposition products:	No data available

11. Toxicological Information

Acute toxicity:	Diethylene glycol diethyl ether LD50 (oral-rat) 4790 mg/kg LD50 (skin-rat) No data available γ -butyrolactone LD50 (oral-rat) 1580 mg/kg LD50 (skin-marmot) 5600 mg/kg 2-(2-Ethoxyethoxy)ethyl acetate LD50 (oral-rat) 11000 mg/kg LD50 (oral-rabbit) 4400 mg/kg
Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available Causes serious eye damage. (γ -butyrolactone)

Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen.
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

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

15. Regulatory Information

EU Information:

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

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

US Information:

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

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

California Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

International Information:

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

16. Other information

List of relevant H-Statements:

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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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. REDGiant, Inc does not warrant the completeness or accuracy of the information contained herein. None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

Safety Data Sheet

1. Identification of the Substance/mixture and the Company/ Undertaking

Product Code : TR2RO LightBlack

Manufacturer : REDGiant, Inc

Address: 37 MTV 27-ro, 58 beon-gil, Jeowang-dong, Siheung-si, Gyeonggi-do, 15118 , Korea

Tel : 82-2-837-0329 Fax : 82-31-311-0130

Use of the product: Inkjet Printing

Date of issue: 1 AUG, 2020

2. Hazards Identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Acute toxicity -oral	Category 5
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Precautionary statement(s)

Prevention	Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention.

2.2. OSHA regulatory status

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

2.3. Potential health effects

Likely route of exposure: Eye, skin, inhalation or oral.

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

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

Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia..

Ingestion: May cause upset stomach.

Chronic Health Hazards: None Known.

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

2.4. Potential environmental effects

See section 12 for Ecological information.

3. Composition / Information on Hazardous Ingredients

Chemical nature: mixture

Composition	C.A.S No.	EC No.	% by Weight	Classification EC No. 1272/2008
Diethylene glycol diethyl ether	112-36-7	203-963-7	50-65	Skin Irrit. 2: H315
Butyrolactone	96-48-0	202-509-2	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
2-(2-Ethoxyethoxy)ethyl acetate	112-15-2	203-940-1	5-15	Eye Irrit. 2: H319
Synthetic resin	C.B.I	C.B.I	1-10	Not classified as hazardous
Colorant	C.B.I	C.B.I	< 2	Not classified as hazardous

* C.B.I : Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
Hold eyelids open during flushing. Call a physician.

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

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

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

Eyes: Non-corrosive but causes irreversible eye effects.

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

Inhalation: Exposure to vapors (mist) will cause respiratory irritation and anesthesia.

Ingestion: May cause upset stomach.

4.3. Indication of immediate medical attention and special treatment needed

No information.

5. Fire Fighting Measures

5.1. Flammable properties:

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

Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media: Water spray, dry chemical, CO₂ or foam.

Unsuitable extinguishing media: No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

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

Protective equipment and precautions for firefighters

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

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

Dike spill. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

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

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill with inert sand, then place in suitable container. For large spills; use water spray to disperse vapors and dilute

spill to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage

7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure cartridge is dry before insertion into printer housing.

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:-

EU:

DNEL(Derived No Effect Level)

components	Long term exposure	Short term exposure
Diethylene glycol diethyl ether	50.05mg/m ³	-
γ-butyrolactone	130mg/m ³	958mg/m ³

REACH Toxicological Information (Workers - Hazard via inhalation route)

8.2. Exposure Controls

Occupational exposure control: Provide general and/or local exhaust ventilation.

Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance: Black Liquid

Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	No data available
Oxidizing properties:	None
Vapor pressure:	No data available
Relative density:	No data available
Solubility:	No data available
Water Solubility:	Lightly Soluble
Partition coefficient:n-octanol/water:	No data available
Viscosity:	No data available
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

10. Stability and Reactivity

10.1. Reactivity:	Stable under normal temperature
10.2. Possibility of hazardous reactions:	Not expected
10.3. Chemical stability:	Stable under normal temperature
10.4. Conditions to avoid:	High and freezing temperatures
10.5. Incompatible materials:	Oxidizers and explosives
10.6. Hazardous decomposition products:	No data available

11. Toxicological Information

Acute toxicity:

Diethylene glycol diethyl ether
LD50 (oral-rat) 4790 mg/kg
LD50 (skin-rat) No data available
 γ -butyrolactone
LD50 (oral-rat) 1580 mg/kg
LD50 (skin-marmot) 5600 mg/kg
2-(2-Ethoxyethoxy)ethyl acetate
LD50 (oral-rat) 11000 mg/kg
LD50 (oral-rabbit) 4400 mg/kg

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

Serious eye damage/eye irritation:	No data available Causes serious eye damage. (γ -butyrolactone)
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	The product contains Carbon black.

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

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

12. Ecological Information

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

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

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

15. Regulatory Information

EU Information:

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

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

US Information:

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

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

California Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

International Information:

The product contains Carbon black.

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

16. Other information

List of relevant H-Statements:

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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. REDGiant, Inc does not warrant the completeness or accuracy of the information contained herein. None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)

Safety Data Sheet

1. Identification of the Substance/mixture and the Company/ Undertaking

Product Code : TR2RO Orange

Manufacturer : REDGiant, Inc

Address: 37 MTV 27-ro, 58 beon-gil, Jeowang-dong, Siheung-si, Gyeonggi-do, 15118 , Korea

Tel : 82-2-837-0329 Fax : 82-31-311-0130

Use of the product: Inkjet Printing

2. Hazards Identification

2.1. Classification of the substance or mixture

This product is classified as dangerous according to GHS.

Flammable liquids	Category 4
Acute toxicity -oral	Category 5
Eye damage/irritation	Category 1
Skin corrosion/irritation	Category 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word(s) Danger

Hazard statement(s) Combustible liquid.
May be harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

Precautionary statement(s)

Prevention	Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention.

2.3. OSHA regulatory status

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

2.4. Potential health effects

Likely route of exposure: Eye, skin, inhalation or oral.

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

2.5. Potential environmental effects

See section 12 for Ecological information.

3. Composition / Information on Hazardous Ingredients

Chemical nature: mixture

Composition	C.A.S No.	EC No.	% by Weight	Classification EC No. 1272/2008
Diethylene glycol diethyl ether	112-36-7	203-963-7	50-65	Skin Irrit. 2: H315
Butyrolactone	96-48-0	202-509-2	10-20	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
2-(2-Ethoxyethoxy)ethyl acetate	112-15-2	203-940-1	5-15	Eye Irrit. 2: H319
Synthetic resin	C.B.I	C.B.I	1-10	Not classified as hazardous
Colorant	C.B.I	C.B.I	1-5	Not classified as hazardous

* C.B.I : Confidential Business Information

4. First Aid Measures

4.1. First aid procedures

Eye	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
Skin	In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.. If swelling or redness occurs, call a physician.
Inhalation	If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

Eyes:	Non-corrosive but causes irreversible eye effects.
Skin:	Contact with skin may cause irritation, swelling or redness.
Inhalation:	Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion:	May cause upset stomach.

4.3. Indication of immediate medical attention and special treatment needed

No information.

5. Fire Fighting Measures

5.1. Flammable properties:

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

Flash Point: about 71 deg.C (closed cup)

5.2. Extinguishing media

Suitable extinguishing media: Water spray, dry chemical, CO₂ or foam.

Unsuitable extinguishing media: No information

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

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

Protective equipment and precautions for firefighters

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

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

6. Accidental Release Measures

General:

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

6.1. Personal precautions

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

6.2. Environmental precautions

Dike spill. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

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

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

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

7. Handling And Storage

7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink. Do not dismantle container. Make sure cartridge is dry before insertion into printer housing.

7.2. Storage

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

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:-

EU:

DNEL(Derived No Effect Level)

components	Long term exposure	Short term exposure
Diethylene glycol diethyl ether	50.05mg/m ³	-
γ-butyrolactone	130mg/m ³	958mg/m ³

REACH Toxicological Information (Workers - Hazard via inhalation route)

8.2. Exposure Controls

Occupational exposure control: Provide general and/or local exhaust ventilation.

Personal protective equipment (PPE)

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

9. Physical and Chemical Properties

Appearance:	Orange Liquid
Odor:	Slightly

pH:	Not applicable
Boiling point:	No data available
Flash point:	About 71 deg.C (closed cup)
Flammability(solid,gas):	Not applicable
Explosive properties:	No data available
Oxidizing properties:	None
Vapor pressure:	No data available
Relative density:	No data available
Solubility:	No data available
Water Solubility:	Lightly Soluble
Partition coefficient:n-octanol/water:	No data available
Viscosity:	No data available
Vapor density:	No data available
Evaporation rate:	No data available
Melting point:	No data available

10. Stability and Reactivity

10.1. Reactivity:	Stable under normal temperature
10.2. Possibility of hazardous reactions:	Not expected
10.3. Chemical stability:	Stable under normal temperature
10.4. Conditions to avoid:	High and freezing temperatures
10.5. Incompatible materials:	Oxidizers and explosives
10.6. Hazardous decomposition products:	No data available

11. Toxicological Information

Acute toxicity:	Diethylene glycol diethyl ether LD50 (oral-rat) 4790 mg/kg LD50 (skin-rat) No data available γ -butyrolactone LD50 (oral-rat) 1580 mg/kg LD50 (skin-marmot) 5600 mg/kg 2-(2-Ethoxyethoxy)ethyl acetate LD50 (oral-rat) 11000 mg/kg LD50 (oral-rabbit) 4400 mg/kg
Skin corrosion/irritation:	No data available Causes skin irritation. (Diethylene glycol diethyl ether)
Serious eye damage/eye irritation:	No data available Causes serious eye damage. (γ -butyrolactone)

Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Carcinogenicity:	None of the ingredients in this ink is listed by IARC as a carcinogen.
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

12. Ecological Information

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

13. Disposal Considerations

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

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

15. Regulatory Information

EU Information:

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

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

US Information:

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

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

California Proposition 65: Not regulated

SARA TITLE III:

Section 313:

Diethylene glycol diethyl ether (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

International Information:

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

16. Other information

List of relevant H-Statements:

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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. REDGiant, Inc does not warrant the completeness or accuracy of the information contained herein. None of the ingredients in this ink is listed by IARC as a carcinogen. (1,2A and 2B)