

Safety Data Sheet

TH-OR

Revision: Version US_1.0

Revision Date: Jan-9-2024

1. Product and Company Identification

Product name: TH-OR**Use of the product:** Inkjet Printing**Manufacturer:**

Manufacturer's name: Roland DG Corporation

Address: 1-1-2 Shinmiyakoda, Hamana-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103

Phone: +81-53-484-1224

FAX: +81-53-484-1226

Importer/Supplier:

Supplier's name: Roland DGA Corporation

Address: 15363 Barranca Parkway Irvine, CA 92618 U.S.A.

Phone: +1-949-727-2100

FAX: +1-949-727-2112

E-mail:

Emergency telephone: +1-949-727-2100**Date of issue:** Jan-9-2024

2. Hazard identification

2.1 Emergency Overview:

Appearance and odor:

Orange Liquid and Slightly odour

Classification according to GHS.

Flammable liquids

Category 4

Acute toxicity (oral)

Category 5

Skin corrosion/irritation

Category 2

Serious eye damage/eye irritation

Category 1

GHS label elements, including precautionary statements**Pictogram(s)****Signal Word:**

Danger

Hazard Statement:

Combustible liquid.

May be harmful if swallowed.

Causes skin irritation.

Causes serious eye damage.

Precautionary statements — Prevention:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

Precautionary statements — Response:

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IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTRE/doctor if you feel unwell.

Precautionary statements — Storage:

Store in a well-ventilated place. Keep cool.

2.2. OSHA regulatory status

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

2.3. Other hazards

Potential Health Effects:

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

See section 11 for more information.

2.4. Potential environmental effects

See section 12 for Ecological information.

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	% By Weight	Classification (HCS) Hazard Communication Standard
Diethylene glycol diethyl ether	112-36-7	55-65	Skin Irrit. 2: H315
γ-butyrolactone	96-48-0	10-20	Acute Tox. 4: H302 Eye Damage 1: H318 STOT Single Exp. 3: H336
Dialkylene glycol dialkyl ether	CBI	10-20	Not classified as hazardous
2-(2-(2-butoxyethoxy)ethoxy)ethanol	143-22-6	1-10	Eye Dam. 1: H318

4. First aid measures

4.1. First aid procedures

Eyes: In case of contact, immediately flush eyes with plenty of water for several minutes. Hold eyelids open during flushing. Call a physician.
Skin: In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give

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oxygen. Call a physician.
Ingestion: If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians

May cause skin and eye irritation. Excessive inhalation of mist will cause respiratory irritation.

5. Firefighting measures

5.1. Flammable properties:

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: > 159.8deg.F

5.2. Extinguishing media

Suitable extinguishing media: Dry chemical, Foam, Carbon dioxide, Dry sand, Loaded stream in spray.
Unsuitable extinguishing media: High-pressure water jet

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture
Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.
Protective equipment and precautions for firefighters
Wear special chemical protective clothing and positive pressure self-contained breathing apparatus(SCBA).
Approach fire from upwind to avoid hazardous vapors and toxic decomposition products.
Decontaminate or discard any clothing that may contain chemical residues.
Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental release measures

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

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

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations.

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 non-flammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

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7. Handling and storage

7.1. Handling

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

7.2. Storage

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

8. Exposure controls/ personal protection

8.1. Exposure Guidelines

Occupational Exposure Limits:

Not available.

8.2. Engineering controls

Provide general and/or local exhaust ventilation.

8.3. Personal protective equipment (PPE)

Eye protection:

Not required under suitable use as setting the ink on the printer. However, in case of direct contact to the ink, wear safety glasses or chemical splash goggles.

Hand protection:

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

Skin protection:

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

Respiratory protection:

In case ventilation is insufficient, employee must use NIOSH approved air purifying respiratory equipment. Use a half facepiece respirator (with goggles) or full face-piece respirator (without goggles) filtered with organic vapor cartridge. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self contained air supply. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

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 odour
odor threshold:	Not defined
pH:	Not applicable
melting point/freezing point:	No data available
initial boiling point and boiling range:	No data available
flash point:	> 159.8deg.F
evaporation rate:	No data available

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flammability (solid, gas):	Not applicable
vapor pressure:	No data available
vapor density:	No data available
specific gravity or relative density:	0.9-1.0
solubility in water:	soluble
partition coefficient: n-octanol/water:	No data available
auto-ignition temperature:	No data available
decomposition temperature:	No data available
volatile organic compounds (VOC) content:	950 grams/L

10. Stability and Reactivity

10.1 Reactivity:

No reactivity under normal temperature.

10.2. Possibility of hazardous reactions:

Not expected.

10.3. Chemical stability:

Stable under normal temperature.

10.4 Conditions to avoid:

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

10.5 Incompatible materials:

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

10.6 Hazardous decomposition products:

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

11. Toxicological information

Acute toxicity:

γ-butyrolactone

LD50 (oral) : 1582mg/kgbw, LD50 (dermal): no data available, LD50 (Inhal.): LC50>5.1mg/L

Serious eye damage/eye irritation:

Causes serious eye damage.

- γ-butyrolactone
- 2-(2-(2-butoxyethoxy)ethoxy)ethanol

Skin corrosion/irritation:

Causes skin irritation.

- Diethylene glycol diethyl ether

Respiratory or skin sensitisation:

no data available.

Germ cell mutagenicity:

no data available.

Reproductive toxicity:

no data available.

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Carcinogenicity:

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

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

May cause drowsiness or dizziness.

- γ -butyrolactone

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

no data available.

Aspiration hazard:

no data available.

12. Ecological information

Ecotoxicity: No data available.

Persistence/Degradability:

No data available

Bioaccumulation/Accumulation:

No data available

Mobility in environment media:

No data available

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

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

14.2 UN proper shipping name

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

14.3 Transport hazard class(es)

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

14.4 Packing group

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

14.5 Environmental hazards

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

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14.6. Special precautions for user

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

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

15. Regulatory Information

Federal Regulations

Toxic Substance Control Act (TSCA):

All components of this product are listed on the TSCA Inventory.

This product contains diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR prescribed 40 CFR 721. 10229 and to TSCA Section 12(b) export notification requirements.

SARA Title III Rules

Section 313/312 Hazard Classes

- | | |
|---|---|
| <input type="checkbox"/> Explosive | <input checked="" type="checkbox"/> Acute toxicity (any route of exposure) |
| <input checked="" type="checkbox"/> Flammable (gases, aerosols, liquids, or solids) | <input checked="" type="checkbox"/> Skin corrosion or irritation |
| <input type="checkbox"/> Oxidizer (liquid, solid, or gas) | <input checked="" type="checkbox"/> Serious eye damage or eye irritation |
| <input type="checkbox"/> Self-reactive | <input type="checkbox"/> Respiratory or skin sensitization |
| <input type="checkbox"/> Pyrophoric (liquid or solid) | <input type="checkbox"/> Germ cell mutagenicity |
| <input type="checkbox"/> Pyrophoric Gas | <input type="checkbox"/> Carcinogenicity |
| <input type="checkbox"/> Self-heating | <input type="checkbox"/> Reproductive toxicity |
| <input type="checkbox"/> Organic peroxide | <input type="checkbox"/> Specific target organ toxicity (single or repeated exposure) |
| <input type="checkbox"/> Corrosive to metal | <input type="checkbox"/> Aspiration hazard |
| <input type="checkbox"/> Gas under pressure (compressed gas) | <input type="checkbox"/> Simple Asphyxiant |
| <input type="checkbox"/> In contact with water emits flammable gas | <input type="checkbox"/> Hazard not otherwise classified |
| <input type="checkbox"/> Combustible Dust | |
| <input type="checkbox"/> Hazard not otherwise classified | |

Section 302 Extremely Hazardous Substances (EHS)

None of the ingredients are listed.

Section 313 Toxic Chemicals

Glycol Ethers (N230)

CERCLA Hazardous Substances

Glycol Ethers (N230) RQ†

† - There is no RQ assigned to this broad class, although the class is a CERCLA hazardous substances. Refer to 50 Federal Register 13456 (April 4, 1985).

RCRA (Hazardous waste code)

None Assigned

State Regulations

California Proposition 65:

⚠ WARNING: This product can expose you to chemicals including Ethylene glycol monomethyl ether, Ethylene glycol monoethyl ether, Methanol, which are known to the State of California to cause birth defects or other reproductive harm, and Ethylbenzene, Vinyl chloride, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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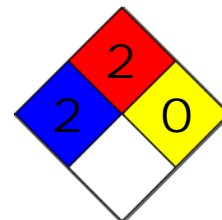
16. Other information

NFPA Rating (NFPA 704):

NFPA Health Hazard: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA Flammability: 2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.

NFPA Instability: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



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