Safety Data Sheet

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

1.1. Product identifier

TrueVIS INK, TR-WH

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

Inkjet Printing

1.3. Details of the supplier of the safety data sheet

Manufacture's name:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1226
E-mail Address:	
Prepared date:	8 November, 2019

1.4. Emergency telephone:

2. Hazard 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
Skin corrosion/irritation	Category 2
Eye damage/irritation	Category 1

2.2. GHS label elements, incliding precautionary statements

Pictogram

Signal word(s)	Danger
Hazard statement(s)	Combustible liquid. May be harmful if swallowed. Causes skin irritation. Causes serious eye damage. Contains methyl methacrylate. May produce an allergic reaction.

Precautionary statement(s)

Prevention	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 IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell.
Strage	Store in a well-ventilated place. Keep cool.

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.
Inhalation:	Exposure to vapors (mist) will cause respiratory irritation and anesthesia.
Ingestion:	May cause upset stomach.
Chronic Health Hazards:	None Known.
Carcinogenicity:	The product contains Titanium dioxide. IARC evaluated printing ink as a Group3(Not classifiable as to carcinogenicity to humans).

3. Composition/information on ingredients

Chemical nature: mixture

Composition	CAS No.	EC No.	EU registration No.	% By Weight	Classification EC No. 1272/2008
Diethylene glycol diethyl ether	112-36-7	203-963-7	N/A for the moment	60-70	Skin Irrit. 2: H315
γ-butyrolactone	96-48-0	202-509-5	N/A for the moment	5-15	Acute Tox. 4: H302 Eye Dam. 1: H318 STOT SE 3: H336
Synthetic resins	C.B.I.	C.B.I.	N/A for the moment	5-15	Not classified as hazardous
Titanium dioxide	C.B.I.	C.B.I.	N/A for the moment	10-20	Not classified as hazardous
Additive	C.B.I.	C.B.I.	N/A for the moment	1-10	Not classified as hazardous
Methyl methacrylate	80-62-6	201-297-1	N/A for the moment	<0.3	Flam. Liq. 2: H225 STOT SE 3: H335 Skin Irrit. 2: H315 Skin Sens. 1: H317

*C.B.I.: Confidential Business Information

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

4. First aid measures

4.1. Description of first aid measures

Eyes:	In case of contact, immediately flush eyes with plenty of water for 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.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion:	If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

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

Eyes:	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. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Powders, bubbles, carbon dioxide, dry sand, water, reinforcement liquid

Unsuitable extinguishing media:

No information

5.2. Special hazards arising from the substance or mixture

Combustible liquid under Hazard Communication Standard (HCS, U.S.A).
Flash Point: 71 deg.C

5.3. Advice 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, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections
Refer to “Section 8 Exposure controls/ personal protection” and “Section 13 Disposal consideration” as appropriate.

7. Handling and storage

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

7.2. Conditions for safe storage, including any incompatibilities
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.

7.3. Specific end use(s): Inkjet printing

8. Exposure controls/ personal protection

8.1. Control parameters
Occupational Exposure Limits:

EU:

components	TWA	STEL
Methyl methacrylate	50ppm	100ppm

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)

US:

components	OSHA:PEL	ACGIH:TLV
Titanium dioxide	15mg/m3* *for total dust	3.5mg/m^3
Methyl methacrylate	100ppm 416mg/m^3	-

Australia: OELs

components	TWA
Titanium dioxide	10mg/m^3
Methyl methacrylate	208 mg/m³

8.2. Exposure controls:

Occupational exposure control:	Provide general and/or local exhaust ventilation.
Personal protective equipment:	
Respiratory protection:	In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with gollges) or full face-piece respirator (without googles) filtered with organic vapor pouch.
Hand protection:	Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, use protective gloves. Recommended impervious gloves is butyl rubber glove.
Eye protection:	Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear safety glasses or chemical splash goggles.
Skin protection:	Not required under suitable use as setting the pouch on the printer. However, in case of direct contact to ink, wear protective clothing.
Hygiene measures:	Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.
Environmental exposure control:	Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:	White Liquid
Odor:	Slightly
pH:	No data available
Boiling point:	No data available
Flash point:	71 deg.C
Flammability(solid,gas):	Not applicable
Explosive properties:	No data available
Oxidizing properties:	None
Vapor pressure:	No data available
Specific Gravity (g/cm^3, 20℃)	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

9.2. Other information: No information

10. Stability and reactivity

10.1. Reactivity:	Stable under normal temperature
10.2. Chemical stability:	Physically stable under an ambient temperature or lower.
10.3. Possibility of hazardous reactions:	No data available
10.4. Conditions to avoid:	If it is heated, the container could explode to be broken down. Do not subject the container to static electricity.
10.5. Incompatible materials:	This product should not mix with strong oxidants and high-pressure
10.6. Hazardous decomposition products:	Toxic gases such as CO and NOx will be generated during combustion.

11. Toxicological information

11.1. Information on toxicological effects

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

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

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 Titanium dioxide.
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

13.1. Waste treatment methods:

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

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)
Triethylene glycol monobutyl ether (Chemical Category N230)

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

International Information:

The product contains Titanium dioxide.
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. Roland DG does not warrant the completeness or accuracy of the information contained herein.