

SAFETY DATA SHEET

according to Regulation (EC) 1907/2006 as amended by Regulation (EU) 2015/830

Product name : UV-LED Curable Ink IQ131 White Date Prepared : 26.09.2018
SDS Number : 18A040 Version : 2.0 Revision Date : 22.03.2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : UV-LED Curable Ink IQ131 White

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

Relevant identified uses : Ink for ink jet printer

1.3. Details of the supplier of the safety data sheet

Company : GENERAL CO., LTD.
18, Satsukigaoka, Minakuchi-cho, Koka-shi, Siga 528-0062, Japan

Telephone : +81-748-65-2260

Telefax : +81-748-63-1922

e-mail : qa_1@general.co.jp

1.4. Emergency telephone number : +81-748-65-2260

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

: Flam. Liq. 2, H225
Skin Irrit. 2, H315
Eye Dam. 1, H318
Skin Sens. 1, H317
Repr. 2, H361
STOT RE 2, H373
Aquatic Chronic 3, H412

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Hazard pictograms :



Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H361 Suspected of damaging fertility or the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure (Respiratory tract, Liver).

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention :

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P264 Wash hands thoroughly after handling.

P272 Contaminated work clothing should not be allowed out of the workplace.

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P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P260 Do not breath dust/fume/gas/mist/vapours/spray.
 P273 Avoid release to the environment.

Response : P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P370+P378 In case of fire: Use an appropriate extinguishing agent for extinction.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P362+P364 Take off contaminated clothing and wash before reuse.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing.
 P310 Immediately call a POISON CENTER or doctor/physician.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P314 Get medical advice/attention if you feel unwell.

Storage : P403+P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.

Disposal : P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

None known

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Ingredients

Components	Concentration (wt %)	CAS No. EC No.	REACH Registration No.	Classification (EC) No 1272/2008
Ethanol	> 30	64-17-5 200-578-6	01-2119457610-43-xxxx	Flam. Liq. 2, H225
(2,4,6-Trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyil)tri-2,1-ethanediyil triacrylate	< 20	40220-08-4 254-843-6	-	Eye Dam. 1, H318
Titanium dioxide	> 10	13463-67-7 236-675-5	-	Not classified
Neopentyl glycol diacrylate	< 6	2223-82-7 218-741-5	-	Acute Tox. 3, H311 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317
Pentaerythritol, ethoxylated, esters with acrylic acid	< 6	51728-26-8 500-111-9	-	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 2, H411
1-vinylhexahydro-2H-azepin-2-one	< 6	2235-00-9 218-787-6	-	Acute Tox. 4, H302 Acute Tox. 4, H312 Eye Irrit. 2, H319 Skin Sens. 1B, H317 STOT RE 1, H372
Acetone	> 5	67-64-1 200-662-2	-	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	< 5	75980-60-8 278-355-8	-	Skin Sens. 1B, H317 Repr. 2, H361f Aquatic Chronic 2, H411

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Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	< 2	162881-26-7 423-340-5	-	Skin Sens. 1, H317 Aquatic Chronic 4, H413
Bis(2-ethylhexyl) maleate	< 2	142-16-5 205-524-5	-	STOT RE 2, H373 Aquatic Chronic 1, H410
1-Propanol	< 1	71-23-8 200-746-9	-	Flam. Liq. 2, H225 Eye Dam. 1, H318 STOT SE 3, H336
2-Propanol	< 1	67-63-0 200-661-7	-	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
2-methoxy-1-methylethyl acetate	< 1	108-65-6 203-603-9	-	Flam. Liq. 3; H226

SECTION 4: First aid measures

4.1. Description of first aid measures

- General advice : When symptoms persist or in all cases of doubt seek medical advice.
- Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Get medical advice/attention if you feel unwell.
- Skin contact : Wash thoroughly with soap and plenty of water while removing all contaminated clothes.
If skin irritation or rash occurs: Get medical advice/attention.
- Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Remove contact lenses, if present and easy to remove. Continue to rinse for at least 15 minutes.
Get medical attention immediately.
- Ingestion : Wash mouth with water and seek medical advice immediately.
Do not induce vomiting.

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

No further relevant information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide (CO₂), Dry chemical, Alcohol-resistant foam, Water spray.
- Unsuitable extinguishing media : Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides will form in fire.

5.3. Advice for firefighters

Wear suitable protective suit and self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment as specified in section 8.

6.2. Environmental precautions

Do not release into soil, sewers, river, or the public water courses.

6.3. Methods and material for containment and cleaning up

In the case of a cartridge: Not applicable.

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At the time of the leakage of contents: Absorb or cover with dry earth, sand or other non-combustible material and transfer to sealable containers. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Put on appropriate personal protective equipment (see Section 8). Prohibition of dropping and throwing.

Avoid contact with skin, eyes and clothing. Do not breathe vapours. Use only in a well-ventilated area.

When using do not eat or drink. Wash hands thoroughly after handling.

Keep away from fire, sparks and heated surfaces. Take precautionary measures against electrostatic discharges.

7.2. Conditions for safe storage, including any incompatibilities

Do not store ink in high or freezing temperature. Keep away from heat and direct sunlight.

Do not store ink with acids, oxidizing agents or explosives.

Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Components	CAS No.	TWA	STEL	Country
Ethanol	64-17-5		1000 ppm	Italy
Acetone	67-64-1	500 ppm, 1210 mg/m ³	1000 ppm, 2420 mg/m ³	European Union
1-Propanol	71-23-8	100 ppm		Italy
2-Propanol	67-63-0	200 ppm	400 ppm	Italy
Titanium dioxide	13463-67-7	10 mg/m ³		Italy

Derived no-effect level (DNEL)

Components	Type	Route	Value	Exposure time
Ethanol	Workers	Inhalation	950 mg/m ³	Systemic effects - long term
		Inhalation	1900 mg/m ³	Local effects - short term
	Workers	Dermal	343 mg/kg	Systemic effects - long term

Predicted no effect concentrations (PNECs)

Components	Route	Value
Ethanol	Freshwater	960 µg/L
	Marine water	790 µg/L
	Intermittent releases (freshwater)	2.75 mg/L

8.2. Exposure controls

Appropriate engineering controls : Adequate ventilation should be provided so that exposure limits are not exceeded.

Individual protection measures, such as personal protective equipment

Eye/face protection : Safety glasses with side-shields. Goggles.

Hand protection : Impermeable gloves.

Skin and body protection : Protective suit, Safety shoes.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

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Thermal hazards : Not available
Environmental exposure controls : Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state : Liquid
Colour : White
Odour : Alcohol odour
Odour threshold : No data available
pH : No data available
Melting point/freezing point : No data available
Initial boiling point and boiling range : No data available
Flash point : 13 degrees C [Ethanol] ≥ -17.8 degrees C [Acetone]
Evaporation rate : No data available
Flammability (solid, gas) : Not available
Upper/lower flammability or explosive limits : No data available
Vapour pressure : No data available
Vapour density : No data available
Relative density : 1.02 (at 25 degrees C)
Solubility(ies)
Water solubility : Insolubility
Partition coefficient: n-octanol/water : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : 3.1 mPa·s (at 25 degrees C)
Explosive properties : This product is considered a no explosive material under normal use condition.
Oxidising properties : There is nothing in general storage and handling.

9.2. Other information

No further relevant information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reactions with proper storage and handling.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Possible to polymerization curing by sunlight/ultraviolet light exposures.

10.4. Conditions to avoid

High temperature, heat, sparks, flames and other sources of ignition. Oxidizing condition.
Avoid direct sunlight and ultraviolet light.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon oxides, nitrogen oxides will form in fire.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Components	Oral LD50	Dermal LD50	Inhalation LC50
Ethanol	(rat) 6200 mg/kg	(rabbit) LDLo 20000 mg/kg	(rat) 63000 ppm/4 h
Titanium Dioxide	(rat) >12000 mg/kg	(rabbit) >10000 mg/kg	(rat) >5.09 mg/L/4 h
Acetone	(rat) 5800 mg/kg	(rabbit) >7400 mg/kg	(rat) 32000 ppm/4 h
1-vinylhexahydro-2H-azepin-2-one	(rat) 1114 mg/kg	(rabbit) 1700 mg/kg	No data available
Neopentyl glycol diacrylate	(rat) 5190 µg/L	(rabbit) 180 µg/L	No data available

Skin corrosion/irritation : Causes skin irritation.
Neopentyl glycol diacrylate
P.I.I. 5.8

Serious eye damage/eye irritation : Causes serious eye damage.
Acetone
(rabbit) 500 mg/24H; Mild
(2,4,6-Trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triy)tri-2,1-ethanediy triacrylate
(rabbit) Severe eye irritation

Respiratory or skin sensitisation : May cause an allergic skin reaction.
Neopentyl glycol diacrylate
skin sensitising
1-vinylhexahydro-2H-azepin-2-one
(mouse) skin sensitising
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
(mouse) sensitising
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide
(guinea pig) sensitising

Germ cell mutagenicity : No data available

Carcinogenicity : No data available

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Possible risk of adverse reproductive effects.

Specific target organ systemic toxicity -Single exposure : No data available

Specific target organ systemic toxicity -Repeated exposure : Prolonged exposure may cause chronic effects.
1-vinylhexahydro-2H-azepin-2-one
Causes damage to organs (Respiratory Tract, Liver) through prolonged or repeated exposure if inhaled.

Aspiration hazard : No data available

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity

Components	Species	Value
Ethanol	Fish (Pimephales promelas)	LC50 (96 h) >100 mg/L
	Crustacea (Ceriodaphnia)	LC50 (48 h) 5012 mg/L
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Fish (Oryzias latipes)	LC50 (48 h) 6.53 mg/L
	Crustacea (Daphnia magna)	EC50 (48 h) 3.53 mg/L

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12.2. Persistence and degradability

Biodegradation : Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Not readily biodegradable.
Bis(2-ethylhexyl) maleate
Not biodegradable.

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

Not applicable

12.6. Other adverse effects

No further relevant information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product : Dispose of waste material in accordance with local, state and federal pollution regulations.
Contaminated packaging : When disposing of an empty container, dispose after removing contents materials completely.
Dispose of this material and its container according to your country law.

SECTION 14: Transport information

14.1. UN number

ADR/RID : UN 1210
IMDG : UN 1210
ICAO-TI/IATA-DGR : UN 1210

14.2. UN proper shipping name

ADR/RID : Printing Ink
IMDG : Printing Ink
ICAO-TI/IATA-DGR : Printing Ink

14.3. Transport hazard class(es)

ADR/RID : Class 3
IMDG : Class 3
ICAO-TI/IATA-DGR : Class 3

14.4. Packing group

ADR/RID : II
IMDG : II
ICAO-TI/IATA-DGR : II

14.5. Environmental hazards

ADR/RID : No
IMDG : No

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

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SECTION 15: Regulatory information

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

(EC) No 1907/2006 (REACH)

Annex XIV (Authorisation) : Not regulated
Annex XVII (Restrictions on use) : Not regulated

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Indication of changes

Issue Date : 22.03.2019
Version : 2.0
Revision information : Section 3.2 : REACH Registration No.
Section 8.1 : DNEL, PNECs
Section 11.1 : Acute toxicity
Section 16 : Other information

Abbreviations and acronyms

ADR : Agreement concerning the International Carriage of Dangerous Goods by Road
CAS : Chemical Abstracts Service
CLP : Classification, Labelling and Packaging
DNEL : Derived No Effect Level
EC : European Community
EU : European Union
GHS : Globally Harmonized System
IARC : International Agency for Research on Cancer
IATA : International Air Transport Association
IBC : Intermediate Bulk Container
ICAO-TI : Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG : International Maritime Dangerous Goods
LC50 : Lethal Concentration 50%
LD50 : Lethal Dose 50%
OEL : Occupational Exposure Limit
PBT : Persistent, Bioaccumulative and Toxic
PNEC : Predicted No Effect Concentration
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals
RID : Regulation Concerning the International Transport of Dangerous Goods by Rail
STEL : Short Term Exposure Limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time Weighted Average
UN : United Nations
vPvB : Very Persistent and Very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU
Regulation (EC) No. 1272/2008 (CLP)
ECHA: Information on Chemicals
3E: Ariel Research Tool
SDS of raw material manufacturer

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Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15

H225 : Highly flammable liquid and vapour.
H226 : Flammable liquid and vapour.
H302 : Harmful if swallowed.
H311 : Toxic in contact with skin.
H312 : Harmful in contact with skin.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H336 : May cause drowsiness or dizziness.
H361 : Suspected of damaging fertility or the unborn child.
H361f : Suspected of damaging fertility.
H372 : Causes damage to organs through prolonged or repeated exposure.
H373 : May cause damage to organs through prolonged or repeated exposure.
H410 : Very toxic to aquatic life with long lasting effects.
H411 : Toxic to aquatic life with long lasting effects.
H412 : Harmful to aquatic life with long lasting effects.
H413 : May cause long lasting harmful effects to aquatic life.

Training advice

General occupational hygiene training recommended.

Further information

Disclaimer : The information contained herein is based on the current knowledge. This Safety Data Sheet is intended to describe our products in correctness of safety requirements. It should not therefore be construed as guaranteeing specific properties. The data applies to only usual handling.