

DATA PREPAED: April 20, 2015

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: UV 161 RANGE OF INKS

General Use: Printing inks

Product Description: A mixture of pigments in multifunctional acrylate vehicle.

MANUFACTURER: T&K TOKA Co., Ltd.

ADDRESS: No.283-1, Chikumazawa, Miyoshi-machi, Irumagun Saitama 354-8577, Japan

GENERAL INFORMATION: Telephone;81-49-258-3653

EMERGENCY TELEPHONE NUMBERS: Telephone;81-3-3963-0512 8:30-17:30 Jpn M-F

Facsimile; 81-3-3963-5249 24Hrs Every day

PREPARED By : Chieko Satoh

2. HAZARDS IDENTIFICATION

UN Hazard Classification:

HAZARD CLASS : Not Applicable

UN/NA NUMBER : Not Applicable

GUIDE NUMBER : 133

GHS Classification

Physical

Flammable Liquid - Not classified

Health

Acute Toxicity (oral) - Not classified

Acute Toxicity (dermal) - Not classified

Acute Toxicity (inhalation) - Not classified

Serious eye damage/eye irritation - Category 2B

Skin Corrosion/Irritation - Category 2

Skin Sensitization - Category 1

Respiratory sensitizer - Not classified

Mutagenicity - Not classified

Carcinogenicity - Not classified

Reproductive Toxicity - Category 2

Target Organ Toxicity (following single exposure) - Not classified

Target Organ Toxicity (following repeated exposure) - Not classified

Environmental

Aquatic Toxicity (acute) - Category 3

Aquatic Toxicity (chronic) - Category 3

GHS Label

Symbols

Pictogram code



Signal word

Warning

Hazard Communication

Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child.
Harmful to aquatic life with long lasting effects.

Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash hand thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.

Other Precautionary Statements

Specific treatment (see PREVENTION on this sheet).
 Take off contaminated clothing and wash before reuse.
 Wash contaminated clothing before reuse.
 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.
 IF exposed or concerned: Get medical advice/attention.
 If skin irritation occurs: Get medical advice/attention.
 If skin irritation or rash occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 Store locked up.
 Dispose of contents/container to Federal, State and local regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC, Regulation (EC) No 1272/2008 of The European Parliament and of The Council of 16 December 2008.

COMPOSITION	CAS#	CONTENT wt%	<i>upper</i> -EU DSD (Risk) Classification(*) <i>lower</i> -EU CLP Classification
Photosensitive resin	Trade secret	10-20	- -
Acrylic ester monomer	Mixture	20-40	- -
Acrylic ester monomer A (Trimethylolpropane triacrylate)	15625-89-5	0-10	Xi R: 36/38-43 Eye Irrit. 2, Skin Irrit. 2, Skin Sens. 1 GHS07, Wng H319, H315, H317
Acrylic ester monomer B (Diallyl phthalate)	131-17-9	0-1	Xn; R22 N; R50-53 Acute Tox. 4, Aquatic Acute 1, Aquatic Chronic 1 GHS07, GHS09, Wng H302, H400, H410
Photo initiator C (2-Methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one)	71868-10-5	0-5	Xn, N R: 22-51/53 Acute Tox. 4, Aquatic, Chronic 2 GHS07, GHS09, Wng H302, H411
Photo initiator	Trade secret	1-10	- -
Additives	Mixture	1-10	- -
Carbon black	1333-86-4	0-20	- -
Titanium dioxide	13463-67-7	0-55	- -
Pigments	Various	0-20	- -
Additives	Mixture	1-10	- -

(*) For full text of Products R-phrases see section 15

4. FIRST AID MEASURES

EYE CONTACT : Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT : If feels itching or burning of the skin, remove contaminated clothing. Immediately wash skin thoroughly with mild soap and plenty of water. Get immediate medical attention. Wash contaminated clothing before reuse.

Inhalation : Remove person to fresh air. If respiratory irritation, headache, dizziness, nausea, vomiting, breathing difficulty or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, give artificial respiration.

INGESTION : If swallowed, do not induce vomiting unless directed by medical personnel. Get immediate medical attention.

5. FIRE-FIGHTING MEASURES

Suitable Extinguish Media : Use dry chemical powder, carbon dioxide, or foam to extinguish fire.

Extinguishing media which must not be used : Extinguishers with water.

Special Fire Fighting Procedures : Exposed firefighters must wear proper protective equipment and positive pressure self-contained breathing apparatus with full face mask.

Move containers from fire area if it can be done without risk. Do not enter fire area without proper protection. Fight fire from safe distance/protected location. Water should be used to cool fire-exposed containers, structures and to protect personnel. Do not flush down sewer or other drainage systems. System may plug with notify authorities if liquid enters sewer/public waters.

HAZARDOUS DECONPOSITION PRODUCTS : Products of combustion are hazardous including carbon monoxide and Carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

GENERAL : Avoid skin contact and breathing vapor. Consult an expert on the disposal of recovered material. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas.(Also see Section 8).

LAND SPILL : Vapor protective clothing should be worn for spills and leaks. Shut off ignition sources; no flares, smoking or flames in hazard area. Prevent additional discharge of product, if possible to do so without hazard. **Small spills:** Take up with sand or other noncombustible absorbent material and place into containers for later disposal. **Large spills:** Dike far ahead of liquid spill for later disposal.

WATER SPILL : Remove from surface by skimming or with suitable absorbents. Do not flush to sewer or waterways. Prevent release to the environment if possible.

7. HANDLING AND STORAGE

Handling

Avoid contact with eyes. Avoid prolonged repeated skin contact and breathing mists/vapours. Keep container closed. Use in well-ventilated area away from all ignition sources. Use good personal hygiene practices.

Wash hands before eating, drinking, smorking. Remove contaminated clothing and clean before re-use.

Keep away from heat and flame. Keep operating temperatures below ignition temperatures at all times. Use nonsparking tools.

Storage

STORAGE TEMPERATURE (min. /max.) : 32°F (0°C) /59°F (15°C)

AVERAGE SHELF LIFE:6 Months at 59°F(15°C).

SPECIAL SENSITIVITY : Heat. Direct rays of the sun .

Risk of possibly rupturing container by fire, high heat sources, raising temperature.

Store in tightly closed containers in cool, dry, well-ventilated area away from heat, sources of ignition and incompatibles. Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Store st ambient or lower temperature. Store out of direct sunlight. Protect against physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Substance	OSHA		ACGIH	
	TWA	STEL	TWA	STEL
Carbon black	3.5mg/m3	n/e	3.5mg/m3	n/e
Titanium dioxide	15mg/m3	n/e	10mg/m3	n/e

n/e—none established

OSHA Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200) : These substances are considered hazardous ingredients (List on "Table Z-1")

ACGIH : Carbon black TLV; 3.5mg/m3 as TWA & A4 (not classifiable as a human carcinogen)[ACGIH2004]. Titanium Dioxide TLV; as TWA 10mg/m3 A4 (not classifiable as s human carcinogen)[ACGIH2001].

Engineering Controls

VENTILATION : Local exhaust ventilation may be necessary to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source. Provide mechanical ventilation for confined spaces. Use explosion-proof ventilation equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Wear chemical safety splash-proof goggles for eye protection and face shield. Avoid skin contact. Wear impervious gloves for skin protection. Use NIOSH approved respirators when necessary.

9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE : Paste	VAPOR PRESSURE : No Data Available
COLOR : Various colors	VAPOR DENSITY (AIR=1) : No Data Available
ODOR : Mild	MOLECULAR FORMULA : Mixture
FLASH POINT : >170°C/338°F	MOLECULAR WEIGHT : Mixture
BOILING POINT : Not Applicable	SPECIFIC GRAVITY : 1.1-1.5 at 25°C/77°F
MELTING POINT : Not Applicable	SOLUBILITY IN WATER : May Partly Soluble
AUTO IGNITION TEMPERATURE : No Data Available	

10. STABILITY AND REACTIVITY

The material is stable in normal use and stocking conditions. It can release carbon oxides and vapours that can be harmful to health if taken to hot temperatures or in case of fire.

Condition to avoid : Avoid open flames, welding arcs, or other high temperature sources which include thermal decomposition.

Incompatibles : Oxidizing agents, and strong Alkaline.

Hazardous Reactions/Decomposition Products : Reacts with strong oxidizing agents. Thermal decomposition products may include oxides of carbon and nitrogen, or sulfur.

11. TOXICOLOGICAL INFORMATION**Corrosive and Irritant Properties**

Acrylic ester monomer B	Oral LD50(rat) 656mg/kg
	Dermal LD(rabbit) > 3800 mg/kg
Photoinitiator C	Oral LD50(rat) 1984 mg/kg
	Dermal LD(rabbit) > 2000 mg/kg
	Ames test : Negative

GHS Information

Acrylic ester monomer B	
Acute Tox. 4	Acute Toxicity (oral) - Category 4
Photoinitiator C	
Acute Tox. 4	Acute Toxicity (oral) - Category 4

Evaluation of Carcinogenicity are not applicable by IARC, EPA, EU, and NTP.

12. ECOLOGICAL INFORMATION**Aquatic toxicity Information**

Acrylic ester monomer B	Oryzias latipes 96h-LC50=0.44mg/L
Photoinitiator C	Brachydanio rerio (Fish) LC50 : 9 mg/L (OECD)
	Large Daphnia EC50 : 15.3 mg/L (OECD)
	A growth obstruction to the algae EC50 : 1.7 mg/L
	Residual property/Rapid degradability : The difficulty resolution, BOD 0%
	HPLC (28days), An average of 1.3%

GHS Information

Acrylic ester monomer B	
Aquatic Acute 1	Aquatic Toxicity (acute) -Category 1
Aquatic Chronic 1	Aquatic Toxicity (chronic) -Category 1

Photoinitiator C

Aquatic Chronic 2

Aquatic Toxicity (chronic) -Category 2

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with Federal, State and local regulations.
Empty containers must be handled with care due to product residue.

14. TRANSPORT INFORMATION**U.S. Department of Transportation (DOT)****Proper SHIPPING NAME :** Not applicable**HAZARD CLASS :** Not applicable**UN/NA NO :** Not applicable**Packing Group :** Not applicable**Label Codes :** Not applicable**Labels Required :** Not applicable

The following description is transport in accordance with **ADR** for road, **RID** for rail, **IMDG** for sea and **ICAO** for air transport.

ADR/RID/IMDG/ICAO/IATA Class : Not applicable**UN Number :** Not applicable**Proper SHIPPING NAME :** Not applicable**Label :** Not applicable**Packing group:** Not applicable**15. REGULATORY INFORMATION****(1). U.S. Federal Regulations****Toxic Substances Control Act (TSCA) information**

All components of this product are included on the 8(b)TSCA Inventory list.

Superfund Amendments and Reauthorization Act (SARA) Title III Information

These products contains none of the substances subject to reporting requirements of SARA section 313 (40 CFR 372)

Component	CAS Number	Maximum %
-	-	-

National Fire Protection Assotiation (NFPA) Ratings : This information is intended solely for the use of individuals trained in the NFPA system.

Health : 1
Flammability : 1
Reactivity : 1

(2). EU Regulations

European Inventory of Existing Chemicals (EINECS) : All of the components of this product are included on EINECS.

The following information is based on current EU (directives 67/548/EEC - 28th update [2001/59/EC], 1999/45/EC and 2001/58/EC).

EU Classification**Designation according to EC guidelines in label :**

[EU Classification] Xi; Xn, R: 52/53 S: 7-9-16-24/25-26-28-29-33-36/37-61-62
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Code letter and hazard designation of product : Xi (Irritant) Xn (Harmful)

Symbol



Risk (R) Phrases: R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety (S) Phrases :

S7 Keep container tightly closed.

S9 Keep container in a well-ventilated place.

S16 Keep away from sources of ignition-No smoking.

S24/25 Avoid contact with eyes and skin.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S28 After contact with skin, wash immediately with plenty of water and seek medical advice.

S29 Do not empty into drains.

S36/37 Wear suitable protective clothing and gloves.

S61 Avoid release to the environment. Refer to special instructions/Safety data sheet

S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label

Contains : Photo initiator C

Follow all regulations in your country.

16. OTHER INFORMATION

Revision Indicator : 03

To the best of our knowledge, the information contained herein is accurate. However, neither T&K TOKA Co., LTD. Nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the