Material Safety Data Sheet

Produce Name	Low Toxic Magenta

1. Chemical Product and Company Identification

a. Trade Name	CUKL22M
b. General Use	UV Cure resin
c. Manufacturer	Carima Co., Ltd. 13FL, Hanwha biz metro1 B/D 551-17, Yangcheon-ro, Gangseo-gu, Seoul, 07532, Korea +82-2-3663-8877

2. Hazards Identification

a. Hazards Classification and Statements	Acute toxicity (oral) : Serious Eye Damage/Irritation : Category 2A , H319 Skin Irrit. : Category 2, H315 Skin sensitisation. : Category 1, H317 Reproductive toxicity : Category 3, H412
b. Hazards Description:	Aquatic environment hazard (Repeated exposure) :
Pictogram	
Signal word	WARNING
Hazards Classification and Statements	H315 : Causes skin irritation. H317 : May cause an allergic skin reaction. H319 : Causes serious eye irritation. H412 : Harmful to aquatic life with long lasting effects.
Prevention precautionary statements	
Prevention	P261 : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 : Wash skin thoroughly after handling. P272 : Contaminated work clothing should not be allowed out of the workplace. P273 : Avoid release to the environment. P280 : Wear eye protection and face protection. P280 : Wear protective gloves. P302 + P352 : IF ON SKIN: Wash with plenty of soap and water. P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Response precautionary statements	P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention. P337 + P313 : If eye irritation persists: Get medical advice/ attention. P363 : Wash contaminated clothing before reuse.
Storage precautionary statements	
Disposal precautionary statements:	P501 : Dispose of contents or container to an approved waste disposal plant.

Other harmful or danger characteristic (NFPA)

Oligomer

- Health hazard
- Fire
- Reactivity Hazard

Photo initiator

- Health hazard
- Fire
- Reactivity Hazard

Acryl monomer

- Health hazard
- Fire
- Reactivity Hazard

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Common name	CAS No,	Amount(%)
Oligomer	proprietary	proprietary	30~60
Acryl monomer	proprietary	proprietary	10~30
Photo initiator	proprietary	proprietary	0.1~10
UV absorber	proprietary	proprietary	~1

4. First aid measures

a. Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
b. Skin contact	In case of contact, immediately flush skin with plenty of water. Get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.
c. Inhalation	If inhaled, remove victim to fresh air.
d. Ingestion	If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

5. Fire fighting measures

Hazardous products of Combustion	In case of fire, toxic fumes might be formed
Extinguishing media	Water spray, Carbon dioxide (CO2), Foam, Dry chemical
Unusual fire or explosion Hazards	When burned, the following hazardous products of combustion can occur: Carbon oxides Nitrogen oxides hydrogen cyanide Isocyanates Amines Hazardous organic compounds Polymerization is exothermic and can degenerate into an uncontrolled reaction.
Special fire fighting Procedures	Fight fire from a protected location. Cool closed containers exposed to fire with water spray. Closed containers of this material may explode when subjected to heat from surrounding fire. Fire fighting equipment should be thoroughly decontaminated after use.

6. Accidental release measures

Personal precautions	Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as clean sand, earth, diatomaceous earth or non-acidic clay and place into suitable properly labeled containers for prompt disposal. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.
Environmental precautions	
Clean-up Method	

7. Handling and storage

a. Storage	Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Store out of direct sunlight in a cool well-ventilated place. Store separate from: Strong oxidizing agents Strong reducing agents Free radical generators Inert gas Oxygen scavenger. Peroxides
b. Handling	Avoid breathing vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

8. Exposure controls/personal protection

a. Exposure Limits

National regulations	No Data
ACGIH regulations	No Data
Biological exposure limits	No Data
b. Suitable Engieering Management	Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

c. Personal protector

Eye protection	Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.
Hands protection	Chemical resistant gloves.

Skin and body protection	Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Avoid natural rubber gloves. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.
Respiratory protection	Avoid breathing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

9. Physical and chemical properties

1. Appearance	
Type	Liquid
Color	Red
2. Odor	acrylate
3. Odour threshold	No Data
4. pH	~7
5. Melting Point/Freezing Point	No Data
6. Boiling Point	No Data
7. Flash Point	No Data
8. Evaporation Rate	No Data
9. Flammability	No Data
10. Flammable Limits	No Data
11. Vapor Pressure	No Data
12. Solubility in WATER	No Data
13. Vapor density(water=1)	No Data
14. Density	No Data
15. n-Octanol/Water Partition coefficient	No Data
16. Autoignition Temperature	No Data
17. Decomposition Temperature	No Data
18. Viscosity(at 25℃)	No Data
19. Molecular Weight	No Data

10. Stability and reactivity

Conditions to avoid	This material polymerizes exothermically in the presence of heat, contamination, oxygen free atmosphere, free radicals, peroxides and inhibitor depletion liberating heat. Avoid direct sunlight. Do NOT expose to ultraviolet light.
Materials to avoid	Strong oxidizing agents Strong reducing agents Free radical generators Inert gas Oxygen scavenger. Peroxides

Hazardous reaction	Hazardous polymerisation may occur. Polymerization is exothermic and can degenerate into an uncontrolled reaction.
Decomposition temperature	Not available
Hazardous decomposition component	Thermal decomposition giving flammable and toxic products: Carbon oxides Nitrogen oxides Hydrogen cyanide Isocyanates Amines Acrylates Hazardous organic compounds

11. Toxicological information

a. Information on the likely routes of

No Data

b. Acute Toxicity Data

Acute toxic

Oral

Acute toxicity estimate > 5,000 mg/kg.

Dermal

Acute toxicity estimate > 5,000 mg/kg.

Inhalation

No Data

Skin Corrosion/Irritation

Causes mild skin irritation. (rabbit) Irritation Index: 0.0 - 1.7 / 8.0. (4 h)

Serious Eye Damage/Irritation

Causes serious eye irritation. (rabbit)

Respiratory sensitization

No Data

Skin sensitization

May cause allergic skin reaction. Buehler Test. (guinea pig) Skin allergy was observed.
May cause allergic skin reaction. LLNA: Local Lymph Node Assay. (mouse) Skin allergy was observed.

Notice of Ministry of Employment and Labor

No Data

Carcinogenicity

IARC

No Data

OSHA

No Data

ACGIH

No Data

NTP

No Data

EU CLP

No Data

Germ Cell Mutagenicity

No Data

Reproductive toxicity

No Data

Specific target organ toxicity(single exposure)

No Data

Specific target organ toxicity (repeated exposure)

No Data

Aspiration hazard

No Data

12. Environmental information

a. Aquatic and terrestrial ecotoxicity:

Fish toxicity (Acute):

No Data

Water flea toxicity (Acute):

No Data

Birds growth hinderance test (Acute):

No Data

b. Persistence and degradability:

Persistence

No Data

Degradability

No Data

c. Bioaccumulative potential:

condenasability

No Data

biodegradablility

No Data

d. Mobility in soil

No Data

e. Other adverse effects:

No Data

13. Disposal considerations

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14. Transport information

a. UN No.

b. Proper Shipping Name

c. Transportation Class

d. Packing Group

e.Marine Pllutant

No Data

f. Special precautions for user

fire emergency

spill Emergency

15. Regulation information

a. Industrial Safety and Health Act

No Data

b. Toxic Chemical Control Act

No Data

c. Dangerous Material Safety Control Act

No Data

d. Wastes Management Act

Designated waste

e. Other requirements in domestic and other countries

National regulation

POPs Control Act

Not applicable

Other countries

U.S.A(OSHA)

Not applicable

U.S.A(CERCLA)

Not applicable

U.S.A(EPCRA 302)

Not applicable

U.S.A(EPCRA 304)

Not applicable

U.S.A(EPCRA 313)

Not applicable

EU(Classification)

EU(Risk phrases)

H315, H317, H319, H412

EU(Safety Phrases)

Not applicable

16. Other requirements in domestic and other countries

a. Information source and references

Frbiz(Pisces)

Lookchem

Episuite

b. Issuing date	2020-12-01
c. Revision number and date	
Revision number	Not applicable
Date	Not applicable
d. Others	-

○ Written in the Material Safety Data Sheet (MSDS) is edited by reference to the MSDS provided by the Korea Occupational Safety and Health Agency, some modified data.