SAFETY DATA SHEETS

This SDS packet was issued with item:

071483601

N/A

ACKURETTA

MATERIAL SAFETY DATA SHEET

Section 1: Identification

Product Name: Ackuretta CURO Pro Cast
Chemical Name/Synonyms: Additive plastic
Application: Methacrylate-based resin 3D printing systems with 385 nm or 405 nm light sources for additive manufacturing of castings.
Company: Ackuretta Technologies Pvt Ltd
Manufacturer: MACK4D

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MSDS Date of preparation: 26th of June, 2023

Section 2: Hazard(s) Identification

Classification of substance or mixture according to Regulation (EC) No. 1907/2006 (REACH):
Acute toxicity (oral) (Acute Tox. 4) H302: Harmful if swallowed. Calculation method.
Respiratory or skin sensitisation (Skin Sens. 1)H317: May cause an allergic skin reaction.Calculation method.
Acute toxicity (inhalative)(Acute Tox. 4). H332: Harmful if inhaled. Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 3). H412: Harmful to aquatic life with long lasting effects. Calculation method.

Pictograms:

Signal Word(s): warning
Hazard Statements
H302 + H332 Harmful if swallowed or if inhaled.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.
Supplemental hazard information: none
Precautionary statements Prevention
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/....
P302 + P352 IF ON SKIN: Wash with plenty of water/....
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P501 Dispose of contents/container to ...

Special rules for supplemental label elements for certain mixtures:
17,5 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (oral).
17,5 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (dermal).
72,6 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (inhalative).
68,5 % percent of the mixture consists of components of unknown hazards to the aquatic environment.

Other hazards: No data available

Section 3: Composition/information on Ingrendients

This product is a mixture

Reagent	Concentration	EC No. /CAS No./ REACH Registration No.	Classification according Regulation (EC) No. 1272/2008	Hazard and category
Bisphenol A (EO)3 Dimethacrylate	30 – <51.03 weight-%	CAS No.: 41637-38-1	H413	Aquatic Chronic 4
Triethylene glycol Dimethacrylate	6 – ≤ 27.34 weight-%	CAS No.: 109-16-0 EC No.: 203-652-6	H317 H411	Skin Sens 1 Aquatic Chronic 3
7,7,9(or7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diylbismethacrylate	1 – ≤ 2.73 weight-%	CAS No.: 72869-86-4 EC No.: 276-957-5 REACH No.: 01-2120751202-68-XXXX	H317 H412	Skin Sens 1B Aquatic Chronic 2
diphenyl(2,4,6-trimethyl benzoyl)phosphine oxide	0 – ≤ 1.37 weight-%	Company Secret	H361f	Repr. 2

Section 4: First Aid Measures

4.1. Description of first aid measures
General information: When in doubt or if symptoms are observed, get medical advice.I In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended
Following inhalation: In case of irritation of the respiratory tract by the product: Consult a doctor Provide fresh air. In case of respiratory tract irritation, consult a physician. Get medical advice/attention.
In case of skin contact: Wash off with plenty of soap and water and rinse. After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

After eye contact: In case of contact with eyes, remove contact lenses and immediately rinse with running water for 10 to 15 minutes with the eyelids open and consult an ophthalmologist.

Following ingestion: Rinse mouth. Let 1 glass of water be drunken in little sips (dilution effect). Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person or a person with cramps. Avoid vomiting

Self-protection of the first aider: Remove contaminated, saturated clothing.Use personal protection equipment. No direct artificial respiration to be given by first aider.

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

Skin contact: May cause allergic skin reactions.

Allergic reactions: Severe eye irritation/irritation

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

Note to doctor: Treat symptomatically.

Section 5. Fire-fighting procedures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray, foam, dry extinguisher or carbon dioxide. Water spray jet alcohol resistant foam Extinguishing powder Carbon dioxide (CO_2)

Unsuitable extinguishing media:

Do not use water jet as extinguishing agent as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition or combustion products may contain the following substances: Carbon oxides. Combustible

Hazardous combustion products:

In case of fire: Gases/vapours, toxic

5.3. Advice for firefighters

Protective measures during firefighting: No actions should be taken without appropriate training or that involve personal risk.Wear a self-contained breathing apparatus and chemical protective clothing.

5.4. Additional information

Special protective equipment for firefighters: Wear positive pressure breathing apparatus (SCBA) and suitable protective clothing. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Section 6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions: Wear suitable protective clothing, including gloves, goggles / face shield, respirator, boots, clothing or apron, as appropriate, when working. Wear suitable respiratory protection if ventilation is inadequate. Remove persons to safety.

Protective equipment: Wear protective gloves/protective clothing/eye protection/face protection

6.1.2. For emergency responders

Personal protection equipment: Personal protection equipment: see section 8

6.2. Environmental precautions

Environmental precautions Avoid release to the environment. Do not allow to enter drains or water courses. Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment: Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).
For cleaning up: Do not smoke, no sparks, flames or other sources of ignition near spills. Bind spilled material with sand or other inert absorbent. Collect and place in a suitable disposal container and seal securely. Containers with collected spilled material must be properly hazard labelled. Spills must be collected and disposed of according to the instructions in chapter 13.

6.4. Reference to other sections

Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

6.5. Additional information

Use appropriate container to avoid environmental contamination.

Section 7: Handling and Storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Protective measures during use: Avoid contact with eyes and skin. Wash contaminated skin thoroughly after handling. Wear suitable protective equipment at work in case of prolonged exposure and / or high concentrations of the vapours, spray or mist.

Wear personal protection equipment (refer to section 8).

Fire prevent measures:

Keep away from heat, sparks and open flame. Mechanical extraction is required if dust is released during handling. Open and handle containers with care. Take precautionary measures against static discharge. Keep away from sources of ignition - No smoking.

Advices on general occupational hygiene

Do not eat, drink or smoke when using this product. Do not eat, drink, smoke or snort in the workplace. Avoid contact with skin, eyes and clothing.

When using do not eat, drink, smoke, sniff. Avoid contact with skin, eyes and clothes.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place.

Requirements for storage rooms and vessels:

Store at temperatures between 5°C and 30°C. Protect from frost and direct sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Do not smoke.

Storage class (TRGS 510, Germany): 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:

The intended uses of this product are described in section 1.2.

Section 8: Exposure Controls/Personal Protection

8.1. Control parameters

No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Ensure sufficient room ventilation and local exhaust ventilation. The occupational exposure limits of the product or the ingredients must be observed.

8.2.2. Personal protection equipment

Eye/face protection:
Eye protection conforming to a recognised standard should be worn if a risk assessment indicates that eye contact is possible. The following personal protective clothing should be worn: Frame goggles with side shields. DIN EN 166
Eye glasses with side protection EN 166

Skin protection:
Avoid contact with the skin. Wear suitable clothing to prevent possible skin contact.
Wear protective gloves. According to the data provided by the protective glove manufacturers, it is necessary to check during their use whether the gloves retain their repellent properties and to change them as soon as damage is detected. For exposures up to 8 hours, wear protective gloves made of the following material: nitrile rubber.
Tested protective gloves must be worn EN ISO 374 Suitable material: Breakthrough time: min In the case of wanting to use the gloves again, clean them before taking off and air them well. Breakthrough times and swelling properties of the material must be taken into consideration.

Respiratory protection:
Suitable respiratory protection must be worn if ventilation is inadequate. Wear a respirator with full face shield and the following filter cartridge: Filter against organic vapours. High efficiency particulate filters.
Filtering device with filter or ventilator filtering device of type: A

Other protection measures:
Wash contaminated skin thoroughly after handling. Wash contaminated clothing and skin immediately with plenty of water before removing clothing. Remove all contaminated clothing immediately and wash before wearing again. Do not wear contaminated work clothing outside the workplace. Do not eat, drink or smoke when using this product.

8.2.3. Environmental exposure controls
No data available

Section 9: Physical and Chemical Properties

Appearance: Liquid
Odor: Ester
Color: Red violet
Melting point: Not determined
Initial boiling point and boiling range: Not determined
Flash point: >160°C
Inflammability (solid, gaseous): Not determined
Upper/lower inflammability or explosion limits: Not determined
Vapor pressure: Not determined
Relative density: Not determined
Solubility: Not determined
Viscosity: Not determined
pH: Not determined

Section 10: Stability and Reactivity

10.1. Reactivity
There is no information available Combustible
10.2. Chemical stability
Stable at normal room temperatures
10.3. Possibility of hazardous reactions
Can polymerise
10.4. Conditions to avoid
Reaction with light, risk of polymerisation. Protect from heat, flames and other ignition sources.
Do not expose to high temperatures or direct sunlight.
Avoid contact with Avoid contact with strong oxidising agents.
10.5. Incompatible materials
Keep away from free-radical initiators, peroxides, strongly alkaline substances and reactive metals to avoid exothermic polymerisation reactions.
10.6. Hazardous decomposition products
Carbon oxides
Gases/vapours, toxic

Section 11: Toxicological Information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Bisphenol A (EO)3 Dimethacrylate (at 100%)
Acute toxicity – oral LD50: >2000 mg/kg, oral, rat
Acute toxicity – dermal LD50: >2000 mg/kg, dermal, rat
Triethylene glycol Dimethacrylate
Acute toxicity – oral LD50: 540 mg/kg
Acute toxicity – dermal LD50: >2,000 mg/kg (Mouse)
Acute toxicity – inhalative LC50 (vapour): ≥0.139 mg/L 4 h (Rat)
Acute toxicity – inhalative LC50 (dust/mist): 0.12 mg/L 4 h (Rat)
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diylbismethacrylate
Acute toxicity – oral LD50: >5000 mg/kg, oral, rat
Acute toxicity – dermal LD50: >2000 mg/kg, dermal, rat
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Acute toxicity – oral LD50: > 5000 mg / kg, oral, rat
Acute toxicity – dermal LD50: > 2000 mg / kg, dermal, rat

Acute oral toxicity: Harmful if swallowed.
Acute dermal toxicity: Based on available data, the classification criteria are not met.
Acute inhalation toxicity: Harmful if inhaled.
Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Serious eye damage/irritation: Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation: May cause an allergic skin reaction.
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.
STOT-single exposure: Based on available data, the classification criteria are not met.

STOT-repeated exposure: Based on available data, the classification criteria are not met.
Aspiration hazard: Based on available data, the classification criteria are not met.
Additional information: No data available

11.2. Information on other hazards

No data available

Section 12: Ecological Information (non-mandatory)

12.1. Toxicity

Triethylene glycol Dimethacrylate

LC50: 16.4 mg/L 4 d (fish, Brachydanio rerio)
EC50: 51.9 mg/L 21 d (fish, Daphnia magna)
EC50: >100 mg/L 3 d (fish, Pseudokirchneriella subcapitata)
LC50: 3.2 mg/L
EC50: 3.2 mg/L
NOEC: 0.31 mg/L

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diylbismethacrylate

LC50: 16.4 mg/L 4 d (fish)
EC50: 51.9 mg/L 3 d (fish, fish)
EC50: 51.9 mg/L 3 d (fish)

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

LC50: =6.53 mg/L 2 d (fish, Oryzias latipes)
EC50: >2.01 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata, Oryzias latipes (Mikroorganismen))
EC50: >1,000 mg/L (Activated sludge)
EC50: =3.53 mg/L 2 d (Algae/water plant, Daphnia magna)

Aquatic toxicity:

Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

Triethylene glycol Dimethacrylate

Biodegradation: Yes, slowly

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diylbismethacrylate

Biodegradation: Poorly biodegradable.

12.3. Bioaccumulation potential

Triethylene glycol Dimethacrylate

Log Kow:1.69

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diylbismethacrylate

Log Kow:3.39

12.4.Mobility on the ground

No data available

12.5.Results of PBT and vPvB assessment

Bisphenol A (EO)30 Dimethacrylate

Results of PBT and vPvB assessment: —

Triethylene glycol Dimethacrylate

Results of PBT and vPvB assessment: —

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diylbismethacrylate
Results of PBT and vPvB assessment: —
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Results of PBT and vPvB assessment: —

12.6. Endocrine disrupting properties
No data available
12.7. Other adverse effects
No data available

Section 13: Disposal Instructions

Proper disposal/product: Dispose of waste according to applicable legislation.
Waste treatment options:
Appropriate disposal / Product:Consult the appropriate local waste disposal expert about waste disposal.
Appropriate disposal / Package:Contact the responsible, authorised waste disposal company about waste disposal.
Other disposal recommendations:Avoid release to the environment.

Section 14: Transport Information (non-mandatory)

UN number: No dangerous good in sense of these transport regulations
Proper UN shipping name: No dangerous good in sense of these transport regulations
Transport hazard classes: No relevant
Packaging group: Not relevant
Environmental hazards: Not relevant
Special precautions for transport: None
Maritime transport in bulk according to IMO instruments: No data available.

Section 15: Regulatory Information (non-mandatory)

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
15.1.1. EU legislation
Authorisations: EU regulations
15.1.2. National regulations
No data available
15.2. Chemical Safety Assessment
A chemical safety assessment has been carried out for this preparation.
Chemical safety assessments for substances in this mixture have not been carried out.

Section 16: Other Information

16.1. Indication of changes
No data available
16.2. Abbreviations and acronyms
ADN European Agreement concerning the International Carriage of Dangerous Goods by Inland

Waterways
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS Chemical Abstracts Service
CLP Classification, Labelling and Packaging
DIN German Institute for Standardization / German Industrial Standard
EC50 Effective Concentration 50%
EN European Standard
ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods
IMO International Maritime Organization
LC50 Lethal (fatal) Concentration 50%
LD50 Lethal (fatal) Dose 50%
NFPA National Fire Protection Association
NOEC No Observed Effect Concentration
PBT persistent and bioaccumulative and toxic
REACH Registration, Evaluation and Authorization of Chemicals
RID Dangerous goods regulations for transport by rail
TRGS Technische Regeln für Gefahrstoffe
UN United Nations

16.3. Key literature references and sources for data
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing of Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006.

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]
Acute toxicity (oral) (Acute Tox. 4). H302: Harmful if swallowed. Calculation method.
Respiratory or skin sensitisation (Skin Sens. 1). H317: May cause an allergic skin reaction. Calculation method.
Acute toxicity (inhalative). (Acute Tox. 4). H332: Harmful if inhaled. Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 3). H412: Harmful to aquatic life with long lasting effects. Calculation method.

16.5. Relevant R-, H- and EUH-phrases (Number and full text)
H317 May cause an allergic skin reaction.
H361f Suspected of damaging fertility.
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.

16.6. Training advice
As from 24 August 2023 adequate training is required before industrial or professional use.

16.7. Additional information
This information is based on our current knowledge and is intended to describe the product in terms of health, safety and environmental conditions only. It should therefore not be construed as a guarantee of any specific property of the product.
DISCLAIMER We have obtained the information contained in this data sheet from sources we believe to be reliable. The accuracy of the information, whether expressed or implied, cannot be guaranteed. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and possibly beyond our knowledge. For these and other reasons, we assume no responsibility and expressly

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