



ACKURETTA

# MATERIAL SAFETY DATA SHEET

## Section 1: Identification

**Product Name:** Ackuretta CURO Temp

**Chemical Name/Synonyms:** Additive plastic

**Application:** Methacrylate-based resin 3D printing systems with 385 nm or 405 nm light sources for fabrication of dental spacers.

**Company:** Ackuretta Technologies Pvt Ltd

**Manufacturer:** MACK4D  
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**MSDS Date of preparation:** 13th of July, 2020

## Section 2: Hazard(s) Identification

**Classification of substance or mixture** according to Regulation (EC) No. 1272/2008:

Skin irrit.	Cat. 2	H315
Skin sens	Cat. 1	H317
Eye irrit.	Cat. 2	H319
Aquatic chronic	Cat. 2	H411

**Pictograms:**



**Signal Word(s):** hazard

**Hazard Statements:**

**Hazard warnings:**

<b>H302</b>	Harmful if swallowed
<b>H315</b>	Causes skin irritation
<b>H317</b>	May cause an allergic skin reaction
<b>H318</b>	Causes serious eye damage
<b>H319</b>	Causes serious eye irritation
<b>H411</b>	Toxic to aquatic life with long lasting effects

**Safety Tips:**

<b>P261</b>	Avoid breathing dust/fume/gas/mist/vapours/spray.
<b>P264</b>	Wash contaminated skin thoroughly after handling.
<b>P272</b>	Contaminated work clothing should not be allowed out of the workplace.
<b>P302+P352</b>	IF ON SKIN: Wash with plenty of soap and water.
<b>P305+P351+P338</b>	IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P333+P313</b>	If skin irritation or rash occurs: Get medical advice/attention.
<b>P362+P364</b>	Take off contaminated clothing and wash before reuse.
<b>P501</b>	Dispose of contents/containers in accordance with local regulations.

**Other hazards:** NA

## Section 3: Composition/Information on Ingredients

**Substances:** This product is a mixture

**Mixtures:** Composition/information on ingredients.

Reagent	Percentage	EC No.:	CAS No.	REACH Registration No.	Classification according to	Hazard class and category
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					Regulation (EC) No. 1272/2008	
Aliphatic difunctional methacrylate	<50	276-957-5	72869-86-4	01-2120751202-68-XXXX	H317; H411	Skin Sens 1B; Aquatic Chronic 2
2,2'-ethylenedioxydiethyl dimethacrylate	<40		109-16-0	01-2119969287-21-XXX	H317	Skin Sens 1
Aliphatic urethane Acrylate	<20			exempt	H302; H315; H318; H317; H411	Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Skin Sens. 1; Aquatic Chronic 2
Phosphine oxide	<2.5	278-355-8	75980-60-8		H317; H361; H411	Skin Sens 1; Repr 2; Aquatic chronic 1

#### Section 4: First Aid Measures

**General information:** Immediately remove stained and soaked clothing. If symptoms are present or in case you are in any doubt, seek medical advice. If the person loses consciousness, put them in the recovery position and seek medical advice immediately.

**After inhalation:** Make sure that there is fresh air. If the product irritates the respiratory tract, consult a doctor immediately.

**After contact with skin:** Wash out and rinse with plenty of soap and water.

**After contact with eyes:** In the event of contact with the eyes, immediately remove contact lenses and rinse with running water for 10-15 minutes while keeping the eyes open. Consult an eye specialist as soon as possible.

**After swallowing:** Never administer something orally to an unconscious person or someone who is experiencing cramps. Consult a doctor immediately. Do not induce vomiting.

**The most significant acute and delayed occurring symptoms and impact**

**Skin contact:** May cause an allergic skin reaction.

**Information about emergency medical aid or special treatment**

**Note for the physician:** Treat symptomatically.

#### Section 5: Fire-Fighting Measures

##### Solvents

**Suitable solvents:** Water spray, foam, dry fire extinguisher or carbon dioxide.

**Unsuitable solvents:** Do not use a water jet as an extinguishing agent, as this will cause the fire to spread.

##### Particular hazards arising from substance or mixture

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

##### Information for fire-fighting

**Safety precautions during fire-fighting:** No actions should be taken without appropriate training or which are associated with personal risk.

**Particular protective equipment for fire-fighters:** Wear self-contained breathing apparatuses (SCBA) and suitable protective clothing.

#### Section 6: Accidental Release Measures

**Personal precautions:** At work, wear suitable protective clothing, including gloves, safety goggles/face guard, respiratory protection, boots, or other clothing or an apron as appropriate. Suitable respiratory protection in the event of inadequate ventilation.

**Measures for environmental protection:** Environmental protection measures to prevent discharge into the environment.

**Measures for cleaning/collecting:** Methods for cleaning: No smoking, sparks, flames or other ignition sources near spillages. Bind leaked material with sand or another inert absorbent. Collect it and fill a suitable disposal bin, then seal securely. Containers with collected spilled material must have the correct hazard labeling. Spillages must be collected and disposed of in accordance with the information in Section 13.

**Reference to other sections:** Reference to other sections: For information on personal protective equipment, see Section 8. Section 13 contains information about waste disposal.

#### Section 7: Handling and Storage

##### Safety precautions for safe handling

**Safety precautions during use:** Avoid contact with the eyes and skin. Wash contaminated skin thoroughly after handling. The hands and all contaminated parts of the body must be washed with soap and water before leaving the factory premises. Keep away from heat, sparks and open flame. Mechanical suction is required if dust is discharged during handling. Open and handle containers with care. At work, wear suitable safety equipment in the event of longer exposure and/or high concentrations of vapors, spray or mist.

**General work hygiene measures:** When using the product, do not eat, drink or smoke.

**Conditions for safe storage, taking cases of incompatibility into account**

**Safety precautions for storage:** Store in a cool and dry place in a tightly sealed original container. Store at temperatures between 5°C and 30°C. Keep away from frost and direct sunlight. Keep away from hot surfaces, sparks, open flames and other types of ignition sources. Do not smoke.

**Specific end uses**

**Intended end use(s):** The intended uses of this product are described as the application in Section 1.

### Section 8: Exposure Controls/Personal Protection

**Parameters to be monitored:** No maximum allowable concentration(s) is/are known for the ingredient(s).

**Limitation and monitoring of exposure**

**Protective equipment**



**Suitable technical controller:** Adequate room ventilation and local aspiration must be ensured. The maximum allowable concentration of the product or ingredients must be observed.

**Eye/face protection:** Eye protection corresponding to a recognized standard should be worn if a risk assessment shows that eye contact is possible. The following personal protective clothing should be worn: Chemical safety goggles. Wear close-fitting chemical safety goggles or face protection.

**Hand protection:** Wear protective gloves. In accordance with the data specified by the protective glove manufacturers, it is required while using them to check whether the gloves maintain their repellent properties and to change them as soon as damage is detected. In the case of exposure up to 8 hours, protective gloves made of the following material must be worn: Nitrile rubber.

**Other skin and personal protection:** Avoid contact with the skin. Wear suitable clothing to prevent possible skin contact.

**Hygiene measures:** Wash contaminated skin thoroughly after handling. Before removing the clothing, wash contaminated clothing and skin immediately with plenty of water. Immediately remove all contaminated garments and wash before wearing them again. Contaminated work clothing should not be allowed out of the workplace. When using the product, do not eat, drink or smoke.

**Respiratory protection:** If ventilation is inadequate, suitable respiratory protection must be worn. Wear a protective mask with full face protection and the following filter cartridge: Filter against organic vapors. Highly effective particle filters.

### Section 9: Physical and Chemical Properties

**Appearance:** Liquid

**Odor:** Ester

**Color:** Various tooth colors

**Melting point:** Not determined

**Initial boiling point and boiling range:** Not determined

**Flash point:** >150°C

**Inflammability (solid, gaseous):** Not determined

**Upper/lower inflammability or explosion limits:** Not determined

**Vapor pressure:** Not determined

**Relative density:** 1.1g/cm<sup>3</sup>

**Solubility:** Insoluble in water; Soluble in most organic solvents

**Viscosity:** Approx. 700-1200 Pa s

**pH:** Not determined

### Section 10: Stability and Reactivity

**Reactivity:** No information is available

**Chemical stability:** Stable at normal room temperatures

**Possible hazardous reactions:** May polymerize

**Conditions to avoid:** Incompatible conditions: Reaction with light, risk of polymerization. Keep away from heat, flames and other ignition sources. Do not expose to high temperatures or direct sunlight. Avoid contact with strong oxidizers.

**Incompatible materials:** Incompatible materials Keep away from radical-forming initiators, peroxides, strongly alkaline substances and reactive metals to prevent exothermic polymerization reactions.

**Hazardous decomposition products:** Carbon oxides

### Section 11: Toxicological Information

**Aliphatic difunctional methacrylate (at 100%)**

**Acute toxicity – oral LD50:** >5000 mg/kg, oral, rat

**Acute toxicity – dermal LD50:** >2000 mg/kg, dermal, rat

**Acute toxicity – inhalative LC50:** No information available  
**Caustic/irritant effect on the skin:** Does not cause irritation  
**Severe eye damage/irritation:** Does not cause irritation  
**Respiratory tract sensitization:** No information available  
**Skin sensitization:** Sensitizing  
**Germ cell mutagenicity:** Bacterial reverse mutation test: Negative  
**Carcinogenicity:** No information available  
**Reproductive toxicity:** Fertility - NOAEL, 1000 mg/kg KG/day, oral, rat P  
**Specific target organ toxicity (repeated exposure):** STOT - Repeated exposure NOAEL 100mg/kg KG/day, oral, rat

**2.2' ethylenedioxydiethyl dimethacrylate (at 100%)**  
**Acute toxicity – oral LD50:** No information available  
**Acute toxicity – dermal LD50:** >2000 mg/kg, dermal, rat  
**Acute toxicity – inhalative LC50:** No information available  
**Caustic/irritant effect on the skin:** Does not cause irritation  
**Severe eye damage/irritation:** Does not cause irritation  
**Respiratory tract sensitization:** No information available  
**Skin sensitization:** Sensitizing  
**Germ cell mutagenicity/genotoxicity - in vitro:** Gene mutation: Negative  
**Carcinogenicity:** No indication of carcinogenicity in animal experiments  
**Reproductive toxicity - fertility:** Screening - NOAEL, 1000 mg/kg KG/day, oral, rat P  
**Reproductive toxicity - Development:** Maternal toxicity: - NOAEL: 1000 mg/kg KG/day, oral, rat  
**Specific target organ toxicity (repeated exposure):** NOAEL 1,000 mg/kg KG/day, oral, rat NOAEL 2000 mg/kg KG/day, dermal, mouse

**Aliphatic urethane Acrylate (at 100%)**  
**Acute toxicity – oral LD50:** 540 mg/kg, oral, rat  
**Acute toxicity – dermal LD50:** >2000 mg/kg, dermal, rabbit  
**Acute toxicity – inhalative LC50:** No information is available  
**Caustic/irritant effect on the skin:** May cause skin irritation  
**Severe eye damage/irritation:** May cause severe eye irritation  
**Respiratory tract sensitization:** No information available  
**Skin sensitization:** Non-sensitizing  
**Germ cell mutagenicity/genotoxicity - in vitro:** Gene mutation: Negative.  
**Carcinogenicity:** NOAEL 1.5 mg/kg, dermal, mouse  
**Reproductive toxicity - fertility:** Fertility: - NOAEL 200 mg/kg/d, oral, rat  
**Reproductive toxicity - Development:** Embryotoxicity: - NOAEL: 75 mg/kg KG/day, oral, rabbit  
**Specific target organ toxicity (repeated exposure):** NOAEL 25 mg/kg KG/day, oral, rat

**Phosphine oxide (at 100%)**  
**Acute toxicity – oral LD50:** No information available  
**Acute toxicity – dermal LD50:** >2000 mg/kg, dermal, rat  
**Acute toxicity – inhalative LC50:** No information available  
**Caustic/irritant effect on the skin:** No information available  
**Severe eye damage/irritation:** No information available  
**Respiratory tract sensitization:** No information available  
**Skin sensitization:** No information available  
**Germ cell mutagenicity/genotoxicity - in vitro:** No information available  
**Carcinogenicity:** No information available  
**Reproductive toxicity - fertility:** Suspected of damaging fertility or the unborn child  
**Reproductive toxicity - Development:** No information available  
**Specific target organ toxicity (repeated exposure):** No information available

**Section 12: Ecological Information (non-mandatory)**

**Toxicity****Aliphatic difunctional methacrylate (at 100%)**

**Acute toxicity - fish:** LC<sub>50</sub>, 96 hours: 10.1 mg/l, Brachydanio rerio (zebrafish)

**Acute toxicity - invertebrate aquatic animals:** EC<sub>50</sub>, 48 hours: >1.2 mg/l, Daphnia magna

**Acute toxicity - aquatic plants:** NOEC, 72 hours: 0.21 mg/l, Desmodesmus subspicatus

**Acute toxicity - microorganisms:** NOEC, 14 days: >=36.1 mg/l, activated sludge

**2.2' ethylenedioxydiethyl dimethacrylate (at 100%)**

**Acute toxicity - fish:** LC<sub>50</sub>, 96 hours: 16.4 mg/l, Brachydanio rerio (zebrafish)

**Acute toxicity - invertebrate aquatic animals:** EC<sub>50</sub>, 21 days: 51.9 mg/l, Daphnia magna

**Acute toxicity - aquatic plants:** EC<sub>50</sub>, 72 hours: > 100 mg/l, Pseudokirchneriella subcapitata

**Acute toxicity - microorganisms:** No information available

**Aliphatic urethane Acrylate (at 100%)**

**Acute toxicity - fish:** LC<sub>50</sub>, 96 hours: 3.2mg/L mg/l, fish

**Acute toxicity - invertebrate aquatic animals:** EC<sub>50</sub>, 48 hours: 13mg/L mg/l, Daphnia magna

**Acute toxicity - aquatic plants:** NOEC, 96 hours: 0.31 mg/l, Pseudokirchneriella subcapitata

**Acute toxicity - microorganisms:** EC<sub>50</sub>, 3 hours: 100 mg/l, activated sludge

**Phosphine oxide (at 100%)**

**Acute toxicity - fish:** No information available

**Acute toxicity - invertebrate aquatic animals:** No information available

**Acute toxicity - aquatic plants:** No information available

**Acute toxicity - microorganisms:** No information available

**Section 13: Disposal Instructions**

**Proper disposal/product:** Disposal in accordance with regulatory requirements.

**Proper disposal/packaging:** May be disposed of in accordance with local regulatory requirements.

**Ecology - waste materials:** Avoid discharge into the environment

**Section 14: Transport Information (non-mandatory)**

**UN number:** None

**Proper UN shipping name:** None

**Transport hazard classes:** No dangerous goods pursuant to transportation regulations.

**Packaging group:** None

**Environmental hazards:** None

**Special precautions for transport:** None

**Bulk transport in accordance with Annex II of the MARPOL Convention 73/79 pursuant to IBC Code No:**

**Section 15: Regulatory Information (non-mandatory)**

**Regulations on safety, health and environmental protection/specific laws for the substance or mixture**

**EU regulations**

**Information about Regulation (EC) No. 166/2006 concerning the establishment of a European Pollutant Release and Transfer Register:** Irrelevant

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer:** Irrelevant

**Regulation (EC) No. 648/2004 on detergents:** Irrelevant

**Regulation (EC) No. 850/2004 [POP regulation]:** Irrelevant

**Regulation (EU) No. 649/2012 concerning the import and export of hazardous chemicals:** Irrelevant

**Restriction on use in accordance with REACH Annex XVII No.:** Irrelevant

**National regulations**

National regulations must also be observed.

**Instructions on employment restriction:** No information is available

**Major Accidents Ordinance:** Not subject to the German Major Accidents Ordinance.

**Solvent Ordinance (31st Federal Immission Protection Ordinance [BlmSchV]):** Irrelevant

**Storage class:** 10-13 Other flammable and non-flammable substances.

**Water hazard class (WHC):** 1 slightly hazardous to water (WHC 1)

**Technical Instructions on Air Quality Control (TA-Luft):** Not subject to the Technical Instructions on Air Quality Control.

**Other regulations, restrictions and prohibition ordinances:** None

**Chemical safety assessment**

A chemical safety assessment was carried out for this preparation; Chemical safety assessments were not carried out for substances in this mixture.

**Section 16: Other Information****Text of H and P phrases (number and full text)**

H phrases	Text
H302	Harmful if swallowed
H315	Causes skin irritation

<b>H317</b>	May cause an allergic skin reaction.
<b>H318</b>	Causes serious eye damage.
<b>H361</b>	Suspected of damaging fertility or the unborn child.
<b>H411</b>	Toxic to aquatic life with long lasting effects.
<b>P phrases</b>	<b>Text</b>
<b>P261</b>	Avoid breathing dust/fume/gas/mist/vapors/spray
<b>P264</b>	Wash contaminated skin thoroughly after handling.
<b>P272</b>	Contaminated work clothing should not be allowed out of the workplace.
<b>P302+P352:</b>	IF ON SKIN Wash with plenty of water.
<b>P305+P351+P338:</b>	IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P333+P313</b>	If skin irritation or rash occurs: Get medical advice/attention.
<b>P362+P364</b>	Take off contaminated clothing and wash it before reuse.
<b>P501</b>	Dispose of contents/containers in accordance with local regulations.
<b>Training tips:</b> None	
<b>Recommended restriction(s) on use:</b> No special measures are required.	
<b>Data sources:</b> REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No. 1907/2006.	
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