



ACKURETTA

# ACKURETTA MATERIALS

## QuraGUIDE

(3D Printing Resin for Surgical Guides)

Safety Data Sheet

2018/02/06

Hazard Pictogram



Signal Word: Warning

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: QuraGUIDE 3D printing photo-reactive resin

Synonym: Ackuretta surgical guide material

Product Use: Manufacturing of 3D printed surgical guides and splints using DLP, SLA, LCD or LED 3D printers.

Company: Ackuretta Technologies Pvt. Ltd.

4F-B No. 322, Section 1, Neihu Road

Neihu District, Taipei 11493 Taiwan (R.O.C.)

## SECTION 2: HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Color: white-transparent

Physical State: liquid

Odor: light acrylate

### CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Classification according to Regulation (EC) No 1272/2008



GHS07

Skin Irrit. 2	H315 - Causes skin irritation.
Eye Irrit. 2	H319 - May cause an allergic skin reaction.
Skin Sens. 1	H317 - Causes serious eye irritation.
STOT SE 3	H335 - May cause respiratory irritation.
Aquatic Chronic 3	H415 - May cause long lasting harmful effects to aquatic life.

### PRECAUTIONARY STATEMENTS

#### Precaution:

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (see on this label).
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Response:

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If SKIN IRRITATION OCCURS: Get medical advice/ attention.
P337 + P313	If EYE IRRITATION OCCURS: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.  
 P501 Dispose of contents/ container to an approved waste disposal plant.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Monomers based on acrylates or methacrylates with low levels of stabilizer and pigments for manufacturing of 3D-printed dental models using DLP, SLA, LCD or LED 3D printers.

Hazardous Components	Hazard Statement	CAS No.	Approx. % w/w
A. Aromatic methacrylic monomer	Eye Irrit. 2 – H319 Skin Irrit. 2 – H315 Skin Sens. 1 – H317 STOT SE. 3 – H335	Proprietary	<80%
B. Aliphatic methacrylic monomer	Eye Irrit. 2 – H319 Skin Irrit. 2 – H315 Skin Sens. 1 – H317 STOT SE. 3 – H335	Proprietary	<30%
C. Phosphine oxide	Aquatic Chronic. 4 – H413 Skin Sens. 1 – H317	Proprietary	<5%

## SECTION 4: FIRST AID MEASURES

If **inhaled**: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of **skin contact**: Remove the contaminated clothing and rinse the contaminated area with plenty of water. Consult a physician.

In case of **eye contact**: Hold eyelids apart to ensure flushing thoroughly with plenty of water for at least 20 minutes and consult a physician.

If **swallowed**: Never give anything by mouth to a victim without conscious or convulsing. Rinse mouth with water. Consult a physician.

## SECTION 5: FIREFIGHTING MEASURES

**Ignition Temperature**: No data

**Low explosion limit**: No data

**Extinguishing media**: Use dry chemical or carbon dioxide for small fires, aqueous foam or water spray for large fires.

**Special hazards arising from the substance or mixture**: Carbon oxides

**Advice for firefighters**: Wear full protection clothing or self-contained breathing apparatus for firefighting if necessary.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**: Wear adequate personal protective equipment. Avoid breathing vapors. Ensure adequate ventilation. Evacuate personnel to safe areas in case of any emergency situation. See section 8 for personal protection.

**Environmental precautions**: Do not let the resin enter drains, sewers or water supplies.

**Methods and materials for containment and cleaning up**: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

## SECTION 7: HANDLING AND STORAGE

**Precautions for safe handling**: Avoid contact with eyes and prolonged contact with skins. Wash hands before eating, drinking, and any actions that may cause contact of use's hands with skin of other body areas. A well-ventilated area is necessary for product use.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a cool, dry and well-ventilated place. Protect from heat and direct-sunlight.

**Storage temperature:** Recommended storage temperature 10 - 25 °C

**Storage class:** Storage temperature above 25 °C should be avoided.

**Expired date:** Product expired date can be found on the container label. Products used after the expiry date can result in poor formation of 3D prints.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### OCCUPATIONAL EXPOSURE LIMITS

Components	TWA 8hr (mg/m <sup>3</sup> )	TWA 8hr (ppm)
A. Methacrylic oligomer	Not listed	Not listed
B. Phosphine oxide	1.0 (skin)	No vapor
C. Colorants and pigments	Not listed	Not listed

### EXPOSURE CONTROLS

**Eye/face protection:** Safety goggles with side-shields to prevent the splash of the product from entering eyes or contacting with face. Skin and body protection: Handle with gloves and wear lab coat, trousers or even aprons to prevent skin from contacting resin.

**Respiratory protection:** In a well-ventilated working environment, respirators are generally not necessary. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU) when higher level protection is needed.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Properties	Value	Unit
Appearance	Form: fluid Color: white-transparent	-
Odor	Acrylate-like smell	-
Specific gravity	1.16	g/cm <sup>3</sup>
Boiling point	>100	°C
Melting point	N/A	°C
Flash point	N/A	°C
Flammable limits (lower)	N/A	°C
Auto-ignition Temperature	N/A	°C
Explosive properties	N/A	-
Oxidizing properties	N/A	-
Lower exposure limits	N/A	-
Upper exposure limits	N/A	-
pH	N/A	-
Viscosity	720	mPa.s
Solvent solubility	Good solubility with most organic solvents	-
Water solubility	Slight soluble	

## SECTION 10: STABILITY AND REACTIVITY

**Conditions to avoid:** This is a stabilized product. Polymerization, however, may occur when the product is expired, or storage temperature exceeds 25°C. Very high temperature can result in uncontrolled polymerization which cause rapid heat buildup and result in rupture of the material container.

**Incompatible materials:** Polymerization initiators, peroxides, oxidizing agents, alcohol and strong bases

**Hazardous decomposition products:** Oxides of carbon and various hydrocarbon fragments when the material is burned.

## SECTION 11: TOXICOLOGICAL INFORMATION

Properties	
Acute oral toxicity (rat)	N/A
Acute dermal toxicity (rat)	N/A
Inhalation	N/A
Dermal	N/A
Skin corrosion/irritation	N/A
Serious eye damage/eye irritation	N/A
Respiratory or skin sensitization	N/A
Germ cell mutagenicity	N/A
Reproductive toxicity	N/A
Specific target organ toxicity - single exposure	N/A
Specific target organ toxicity - repeated exposure	N/A
Inhalation	May cause respiratory irritation
Delayed and immediate effects as well as chronic effects from short and long-term exposure	Inhalation of vapors may lead to headache, drowsiness and dizziness.

## SECTION 12: ECOLOGICAL INFORMATION

Properties	
Toxicity	N/A
Persistence and degradability	N/A
Bio accumulative potential	N/A
Results of PBT and vPvB assessment	N/A
Specific target organ toxicity - repeated exposure	N/A
Mobility in soil	N/A
Ecotoxic effects	Harmful to aquatic organisms.
Additional ecological information	Do not allow undiluted product or large quantities of it to reach ground water, water course, or sewage system.
Other adverse effects	N/A

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods:** Dispose the product following to governmental policy. Do not allow product to reach sewage system. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging:** Dispose of as unused product. Expose the opened empty container to light as long as possible, then dispose.

## SECTION 14: TRANSPORT INFORMATION

Transport ADR/RID/AND: This product is not subject to ADR/RID/AND regulations.

Transport IMDG (International Maritime Dangerous Goods Code): This product is not subject to IMDG regulations.

Transport ICAO-Ti/IATA (International Air Transportation Association): This product is not subject to ICAO-Ti/IATA regulations.

## SECTION 15: REGULATORY INFORMATION



EC classification: irritant, sensitizing and harmful

Hazard symbol: Xi: irritating

H315	Causes skin irritation.
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H413	May cause long lasting harmful effects to aquatic life

High atmospheric concentrations may lead to irritation of the respiratory tract and anesthetic effects. Repeated and/or prolonged contact may cause dermatitis.

## SECTION 16: OTHER INFORMATION

The information is based on the present state of our knowledge and experience, and it is applicable to the product with regard to appropriate safety precautions. It does not, however, constitute a guarantee for properties of the product and shall not establish a legally valid contractual relationship. Ackuretta Technologies Pvt. Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product.