SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	Structomer® Dielectric Resin
MANUFACTURER	Structo Pte. Ltd.
DIVISION	Materials
SALES & DISTRIBUTION ADDRESS	40 Jalan Pemimpin, #03-10A Tat Ann Building, Singapore 577185
MANUFACTURING ADDRESS	40 Jalan Pemimpin, #03-10A Tat Ann Building, Singapore 577185
COUNTRY SPECIFIC EMERGENCY PHONE (SINGAPORE)	995
MANUFACTURER'S PHONE NUMBER	+65 8089 3600(Singapore)
CHEMICAL FAMILY	Acrylate oligomers
PRODUCT USE	Photoactive resin based on acrylate oligomers for manufacturing of 3D-printed dental and orthodontic models.

SECTION 1 NOTES:

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT	CAS NO.	% WT/WT	HAZARD STATEMENT	CLASSIFICATION
Epoxy methacrylate/ Acrylate/Diacrylate/Triacrylate monomers	Proprietary	≥ 96 %	H314 H315 H317 H319 H302	Skin Corrosion (Cat. 3) Skin Irritation (Cat. 2) Skin Sens. (Cat. 1) Eye Irritation (Cat. 2A) Acute Toxic (Cat. 4)
Phosphine oxides		≤ 3 %	H317 H361 H411	Skin Sens. (Cat. 1) Repr. (Cat.2) Aquatic Chronic (Cat. 2)
Pigments		< 1 %	H315 H317 H319	Skin Irritation (Cat. 2) Skin Sens. (Cat. 1) Eye Irritation (Cat. 2)

The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.
A PEL or TLV has not been established.

SECTION 2 NOTES:

SECTION 3: HAZARDS IDENTIFICATION

Classification to Hazardous Products Regulations (HPR) (SOR / 2015 - 17)

Classification of the Product			Explanation
Skin Sens.	:	1	Skin sensitization
Skin Corrosion	:	3	Mild irritant
Eye Irritation	:	2	Serious eye damage/eye irritation
Skin Irritation	:	2	Skin corrosion / irritation
Repr.	:	2	Reproductive Toxicity
Aquatic Chronic	:	2	Hazardous to the aquatic environment

Label Elements

Pictogram



Signal Word

Warning

Hazard statements:

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	May cause skin irritation
H317	May cause an allergic skin reaction
H319	May cause serious eye irritation
H361	Suspected of damaging fertility or the unborn child
H411	Toxic to aquatic life with long lasting effects

Precautionary statements (Prevention):

P202	Do not handle until all safety precautions have been read and understood
P280	Wear protective gloves/protective clothing/eye protection/face protection
P261	Avoid breathing dust/fumes/gas/mist/vapors/spray
P273	Avoid release to the environment
P272	Contaminated work clothing should not be allowed out of the workplace
P264	Wash skin thoroughly after handling

Precautionary statements (Response):

P302 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and continue rinsing
P312	Call a POISION CENTER or doctor/physician if you feel unwell
P321	Special treatment (see supplementary first aid instructions in this document)
P332 + P313	If skin irritation occurs: Get medical advice/attention
P337 + P313	If eye irritation persists: Get medical advice/attention
P362	Take off contaminated clothing and wash before reuse
P391	Collect spillage

Precautionary statements (Storage):

P403 + P233	Store in a well-ventilated place. Keep container tightly closed
P405	Store locked up

Precautionary statements (Disposal):

P501 Dispose of contents/container to an approved waste disposal point

SECTION 3 NOTES:

SECTION 4: FIRST AID MEASURES

GENERAL ADVICE

Consult a physician. Show this safety data sheet to the doctor in attendance.

INHALATION

Remove the victim to fresh air and keep him/her warm and in rest position. If breathing has stopped, loosen clothing, keep airway clear, and give rescue breathing. Seek medical attention immediately.

EYE CONTACT

Do not rub. Immediately wash the affected area under running water for at least 15 minutes and seek medical attention by an ophthalmologist.

SKIN CONTACT

Remove contaminated clothing, and/or shoes and wash the affected areas with plenty of water or soap water. If unusual feeling remains, seek medical attention.

INGESTION

If ingested, give the victim plenty of water or salt water and make him/her vomit. Immediately seek medical attention.

MOST IMPORTANT SYMPTOMS AND EFFECTS (BOTH ACUTE AND DELAYED)

The most important known symptoms and effects are described in SECTION 3

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

No data available.

SECTION 4 NOTES:

SECTION 5: FIRE-FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS

May polymerize on heating. Sealed container may rupture explosively if hot.

EXTINGUISHING MEDIA

Dry chemical powder, foam, carbon dioxide, dry sand and fogging water

PROHIBITED EXTINGUISHING MEDIA

Hose water.

SPECIAL FIREFIGHTING PROCEDURES

Firefighting operation should be done from upwind position, with wearing protective equipment. Cut off supply of burning material to the source of fire and extinguish the fire using proper extinguishing media. Cool the surrounding buildings with water spray to prevent spread of fire.
Fire fighters should wear proper protective equipment (breathing apparatus, chemical protective suits, gloves, glasses, masks etc.).

FURTHER INFORMATION

Use water spray to cool unopened containers.

SECTION 5 NOTES:

SECTION 6: ACCIDENTAL RELEASE MEASURES

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED

Eliminate sources of ignition. Ensure suitable personal protection (including respiratory protection) during removal or spillage. Prevent entry into drains. Adsorb spillages onto sand, earth or any other suitable adsorbent material. DO NOT adsorb onto sawdust or other combustible materials. Transfer to a container for disposal or recovery. Spillages or uncontrolled discharges into watercourses must be alerted to appropriate regulatory body. Do not discharge into drains/surface waters/ groundwater. Maximize ventilation after accidental release.

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see Section 8.

ENVIRONMENTAL PRECAUTIONS

Attention should be taken for the spillage not to flow into sewages, drains, and low ground.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Contain spillage, and then collect and place in container for disposal according to local regulations (see Section 13). Keep in suitable, closed containers for disposal.

WASTE DISPOSAL METHODS

Disposal should be in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators for the disposal for organic chemicals. Decontaminate empty drums before recycling.

SECTION 6 NOTES:

SECTION 7: HANDLING AND STORAGE

HANDLING

Engineering Measures

Wear proper protective equipment not to contact with skin and mucosa, and eyes. Countermeasures against static electricity should be taken. Work suits and work shoes should be electrically conductive. Do not handle it roughly in such a way as falling-down, dropping, entraining, and giving shock.

Cautions

In the area of handling, set up an enclosed system or a local exhaust ventilation, have good ventilation and prevent the liquids from leaking and splashing.

STORAGE

Adequate storage condition

Keep in dry, cool, well ventilated place, separate from oxidizing agents. Keep away from sources of ignition – No smoking. Keep away from heat and direct (sun) light. Container may be filled for only 80 %. Keep the container closed to avoid evaporation of the product. Store in original container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Storage temperature preferably to be maintained between 23-25 °C (73-77 °F). Safe containers and packaging materials according to the specifications for product containers is to be followed. Do not store in metal containers.

SECTION 7 NOTES:

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

APPROPRIATE ENGINEERING CONTROLS

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

RESPIRATORY PROTECTION

Wear suitable respiratory equipment if exposed to level above the occupational exposure limit is likely. A suitable full-face mask with organic vapour cartridge filter type A (BP >65 ^{o}C) may be appropriate.

EYE / FACE PROTECTION

Safety glasses with side-shields conforming to EN166 must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor.

SKIN PROTECTION

Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. The equipment should be cleaned thoroughly after each use.

HAND PROTECTION

Wear protective gloves. Recommendations are listed below. Other protective materials may be used based on user's own risk assessment. Barrier creams may help protect the exposed areas of the skin, they should however not be applied once exposure has occurred. Replace gloves immediately when torn and any change in appearance (dimension, colour, flexibility etc.) is noticed.

Gloves for repeated or prolonged exposure- non-exhaustive list:
Nitrile rubber (NBR), thickness: >0.56 mm, break through time: up to 480m

Gloves for short term exposure/splash protection- non-exhaustive list:
Nitrile rubber (NBR), thickness: 0.1 mm, break through time: up to 30 min
The chemical resistance depends on the type of product and amount of product on the glove. Therefore, gloves need to be changed when in contact with chemicals.

Not suitable gloves- non-exhaustive list:
Latex gloves

Due to many conditions (e.g. temperature, abrasion) the practical usage of a chemical protection glove in practice may be much shorter than the permeation time determined through testing. Use PE gloves under gloves for difficult situations like for instance: high exposure, unknown composition or unknown properties of the chemicals.

Food, beverages and tobacco products should not be carried, stored or consumed where this material is in use. Before eating, drinking or smoking, wash face and hands thoroughly with soap and water.

The selected protective gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

OTHER

Keep working clothes separately. Take off contaminated clothing immediately. Keep away from food, drinks and animal feed. Wash hands thoroughly after handling.

SECTION 8 NOTES:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Black
ODOR	Ester like
PHYSICAL STATE	Liquid
pH AS SUPPLIED	Not applicable
BOILING POINT	Not available
MELTING POINT	Not applicable
FREEZING POINT	Not applicable

FLASH POINT	187.5 0C
FLAMMABLE LIMITS (lower) (%v/v)	Not applicable
AUTO IGNITION TEMPERATURE	Not applicable
EXPLOSIVE PROPERTIES	Not applicable
OXIDISING PROPERTIES	Not applicable
VAPOR PRESSURE (mmHg):	Not available
RELATIVE DENSITY	Not available
SOLUBILITY	Not available
WATER SOLUBILITY	Not available
VISCOSITY AT 25 °C	200 - 600 mPa.s
MOLECULAR WEIGHT	Not available

SECTION 9 NOTES:

SECTION 10: STABILITY AND REACTIVITY

STABILITY

Stable under recommended storage conditions.

CONDITIONS TO AVOID (STABILITY)

The product is stabilized. However, polymerization may occur when the expiry date and/or storage temperature is exceeded. Keep out of direct sunlight and ultra violet radiation. Avoid friction with temperature increase as result. Avoid direct contact with heat sources. Avoid temperatures higher than 60 °C (140 °F). Loss of dissolved air. Loss of polymerization inhibitor.

INCOMPATIBILITY (MATERIALS TO AVOID)

When heated above the flash point, flammable vapors are emitted which can mix with air and can burn or be explosive. Vapors are heavier than air and may travel to the source of ignition and flash back. Heat can cause polymerization with rapid release of energy which may rupture the container explosively. Incompatible materials include strong oxidizers, strong reducers, reactive metals, alkalis, peroxides, free radical producing initiators, inert gases and oxygen scavengers.

HAZARDOUS POLYMERIZATION

Hazardous polymerization can occur when exposed to direct sunlight. Hazardous exothermic polymerization can occur when heated. Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers. Material should not be heated above 100 ° C due to polymerization.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous decomposition products formed under fire conditions- carbon oxides, nitrogen oxides, hydrogen cyanide, oxides of phosphorous, smoke, soot.

SECTION 10 NOTES:

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY
No applicable information is available

SKIN CORROSION/IRRITATION
No applicable information is available

SERIOUS EYE DAMAGE/EYE IRRITATION
No applicable information is available

RESPIRATORY OR SKIN SENSITISATION
No applicable information is available

GERM CELL MUTAGENICITY
No applicable information is available

CARCINOGENICITY
No applicable information is available

REPRODUCTIVE TOXICITY
No applicable information is available

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE
Inhalation - May cause respiratory irritation

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE
No applicable information is available

ASPIRATION HAZARD
No applicable information is available

SECTION 11 NOTES:

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY
No applicable information is available

PERSISTENCE AND DEGRADABILITY
No applicable information is available

BIOACCUMULATIVE POTENTIAL
No applicable information is available

MOBILITY IN SOIL
No applicable information is available

RESULTS OF PBT AND VPVB ASSESSMENT
No applicable information is available

OTHER ADVERSE EFFECTS
No applicable information is available

OTHER INFORMATION

Do not discharge product unmonitored

SECTION 12 NOTES:

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS:

The company encourages the recycle and reuse of products and packaging, where possible and permitted.

PRODUCT DISPOSAL

When recycle or reuse is not possible, the company recommends that our product, especially when classified as hazardous, be disposed of by thermal treatment or incineration at approved facilities. All local and national regulations should be followed. For disposal within the Eu, waste codes according to local directives should be assigned and disposal should be carried out in agreement with the waste disposal company.

CONTAMINATED PACKAGING

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Handle contaminated packages in the same way as the product itself. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

OTHER

Do not release directly or indirectly to surface water, ground water, soil or public sewage system.

SECTION 13 NOTES:

SECTION 14: TRANSPORT INFORMATION

UN NUMBER

ADR/RID	:	No applicable information is available
IMDG	:	No applicable information is available
IATA-DGR	:	No applicable information is available

UN PROPER SHIPPING NAME

ADR/RID	:	Not dangerous goods
IMDG	:	Not dangerous goods
IATA	:	Not dangerous goods

TRANSPORT HAZARD CLASS(ES)

ADR/RID	:	No applicable information is available
IMDG	:	No applicable information is available
IATA-DGR	:	No applicable information is available

PACKAGING GROUP

ADR/RID	:	No applicable information is available
IMDG	:	No applicable information is available
IATA-DGR	:	No applicable information is available

ENVIRONMENTAL HAZARDS

Information on environmental hazard if relevant see section 14

SPECIAL PRECAUTIONS FOR USER

No applicable information is available

SECTION 14 NOTES:

SECTION 15: REGULATORY INFORMATION



Warning

EC Classification	IRRITANT, SENSITIZING AND HARMFUL	
Hazard Symbol	Xi	Irritating
Health Phrases	H315	Causes skin irritation
	H317	May cause an allergic skin reaction
	H319	Cause serious eye irritation
	H411	Toxic to aquatic life with long lasting effects

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

OTHER REGULATIONS

Adhere to the national sanitary and occupational safety regulations when using this product.

SECTION 15 NOTES:

SECTION 16: OTHER INFORMATION

Appendix D to the Hazard Communication Standard, 29 CFR 1910.1200
Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regards to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Structo Pte. Ltd. and its affiliates shall not be held liable for any damage resulting from handling, use, contact, processing, storage, transportation, disposal or release of the above product. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified.