

SAFETY DATA SHEET

SECTION 1

Identification of the substance/preparation and the company/undertaking

1.1 Product identifier

Product name: EvoDent Model V2.0
CAS No.: Not applicable
EC No.: Not applicable
Molecular formula: Not applicable

1.2 Details of the supplier of the safety data sheet

Supplier: Shanghai Union Technology Corporation
Address: Room 102, Unit 40, 258 Xinzhuang Rd, Songjiang High Science & Technology Park, Caohejing Developing Zone, Shanghai, China
Post code: 201612
Fax: 021-6497 8786*202
Phone: 021-6497 8786
E-mail: enquiry@uniontech3d.cn
Emergency phone: 400-138-8966 (only available during office hours)

1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified use: Material based on acrylate resin for manufacturing of 3D-printed dental models.
Uses advised against: No further relevant information available.

SECTION 2 Hazards Identification

2.1 Classification of the substance or mixture

Product definition:	Mixture.	
According to Regulation (EG)	Acute Toxicity(oral)	Cat.5
No.1272/2008 [CLP/GHS]	Acute Toxicity(Dermal)	Cat.5
	Skin Corrosion/Irritation	Cat.2
	Serious Eye Damage/Eye Irritation	Cat.2
	Skin sensitization.	Cat.1
	Aquatic Hazard(acute)	Cat.2

2.2 Label elements

Hazard pictogram:



Signal word: Warning

Hazard statements:	H303+H313	May be harmful if swallowed or in contact with skin
	H315	Cause skin irritation.
	H317	May cause an allergic skin reaction.
	H318	Cause serious eye damage.
	H401	Harmful to aquatic life..
Prevention: Precautionary statements	P264	Wash hands and exposed skin thoroughly after handling.
	P280	Wear protective gloves/eye protection/face protection.
	P273	Avoid release to the environment.
	P272	Contaminated work clothing should not be allowed out of the workplace.
	P261	Avoid breathing dust/fumes/gas/mist/vapours/spray.
Accident response:	P391	Collect spillage.
	P302 + P352 + P362+P364	If on skin: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
	P333 + P313	If skin irritation or rash occurs: Get medical attention.
	P305 + P351 + P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P337 + P313	If eye irritation persists: Get medical attention.
	P501	Dispose of contents/container in accordance with local/regional/national/international regulation.

2.3 Other hazards

None known

SECTION 3 Composition/information on ingredients

3.1 Substances

This Product is a mixture.

3.2 Mixtures

Component(s)	% w/w	CAS No.
Polyurethane acrylate oligomers	30-60%	/
Dipropylene glycol diacrylate	5.0-15%	57472-68-1
Phosphine oxide	1.0-5.0%	75980-60-8
Dye	0.1-1%	N/A

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4 First aid measures

4.1 Description of first aid measures

Ingestion:	Rinse mouth immediately and do not induce vomiting. Keep person under observation. If such person becomes uncomfortable, get medical attention.
Skin Contact:	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if irritation or symptom occur after washing.Wash contaminated work clothing before use.
Eye Contact:	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention..
Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by rtrained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Emergency medical procedures.	Continue to rinse eyes with water for 20-30 minutes, rinse eyes continuously. Consult your eye doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

Eye contact:	Adverse symptoms may include the following: pain or irritation watering redness
Skin contact:	Adverse symptoms may include the following: irritation redness
Ingestion:	No specific data
Inhalation:	No specific data

4.3 Indication of the immediate medical attention and special treatment needed

Note to physician:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities havebeen ingested or inhaled.
Treatment:	Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5 Fire-fighting measures

5.1 Extinguishing media

Suitable:	Use an extinguishing agent suitable for the surrounding fire.
Not suitable:	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture: In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products: Decomposition products may include the following materials:

- carbon dioxide
- carbon monoxide
- sulfur oxides
- metal oxide/oxides
- (dense) black smoke
- aldehydes
- organic acids
- halogenated compounds

5.3 Advice for fire-fighters

Protective equipment: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Protective equipment: Wear a self-contained breathing apparatus and full protective clothing.

Non-emergency responders: Avoid contact with skin and eyes.
Keep away from heat, sparks and open flame.

Emergency responders: Use protective gloves, goggles and suitable protective clothing.
In case of inadequate ventilation, use respiratory protection.

6.2 Environmental precautions

Contain contaminated water/firefighting water. Avoid release to the environment. Do not discharge into drains/surface water/groundwater.

6.3 Methods and material for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if watersoluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

SECTION 7 Handling and storage

7.1 Precautions for safe handling

Keep away from heat, sparks and open flame. Use mechanical ventilation in case of handling which causes formation of vapors. Handle and open container with care. Wear full protective clothing for prolonged exposure and/or high concentration. Take precautionary measures against static discharges. Handle and open container with care. Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities

Protect from light, including direct sunrays. Keep containers tightly closed. Store in original container in a dry and well-ventilated place at room temperature (<35 °C). Do not expose to temperature above 60 °C for more than 24 hours. High temperature may cause spontaneous polymerization.

7.3 Specific end use(s)

Do not expose to the daylight.

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Component(s)	Oral (Toxicity)	Inhalation	Dermal
Phosphine oxide(100%)	DENL not established	21mg/m3	3.3mg/kg

Biological limit: No data available.

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures, such as personal protective equipment (PPE)

Skin protection:	Wear suitable gloves. Gloves should be stored correctly and changed regularly, especially if excessive exposure.
Eye/face protection:	Wear eye/face protection. Wear approved chemical safety goggles where eyes exposure must be provided.
Hand protection:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Other:	Keep working clothes separately. Take off contaminated clothing immediately. Wash soiled clothing before reuse. Keep away from food, drinks and animal feed. Wash hands thoroughly after handling.

SECTION 9 Physical and chemical properties

Physical state:	Liquid	Dust explosion:	Not applicable
Colour:	Yellow	Relative density (g/cm³):	~1.09 (water=1)
Odour:	Typical (Slight)	Density (g/cm³):	~1.09
pH:	Not applicable	Solubility:	good solubility with most organic solvents
Melting point (°C):	Not applicable	Solubility (water):	Not applicable
Boiling point (°C):	Not applicable	Partition coefficient:	Not applicable
Softening point (°C):	Not applicable	Automatic ignition temperature (°C):	Not applicable
Flash point (°C):	Not applicable	Decomposition temperature (°C):	Not applicable
Burning time:	Not applicable	Conductivity:	Not applicable
Burning rate:	Not applicable	Molecular weight (g/mol):	Not applicable
Flammability (solid, gas):	Not applicable	Flammable limits (lower):	Not applicable
Explosive property:	Not applicable	Viscosity (@ 30 °C, mPa · s):	~180
Vapor pressure (kPa):	-	Combustion heat (kJ/mol):	Not applicable
Vapor density (g/cm³):	Not applicable	Critical pressure (MPa):	Not applicable
VOC content:	Not applicable	Critical temperature (°C):	Not applicable

SECTION 10 Stability and reactivity

10.1 Chemical stability:

The product is stable.

10.2 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Avoid exposure to high temperature, direct sunlight or ultra violet (UV) radiation.

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition product(s)

Stable if stored and handled as prescribed/indicated.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Component(s)	Results	Dosage
Phosphine oxide (100%)	LD50 acute Dermal-Rat	>2000 mg/kg
	LD50 acute Oral-Rat	>2000 mg/kg
	Skin irritation(rabbit, 24h, Draize)	Non-irritant
	Eye irritation(rabbit,Draize)	Non-irritant
	Skin sensitisation guinea pig(GPMT)	Sensitizing
	Aspiration Hazard	No aspiration hazard expected
	Reproductive toxicity(animal studies)	NNOAEL: > 1000mg/kg/ady,oral,Rat

Dipropylene glycol diacrylate(100%)

Chronic harm to the body:

Mouse lymphoma and sister chromatid exchange tests were positive, indicating the presence of a potentially mutation-inducing substance in the organism.

SECTION 12 Ecological information

12.1 Toxicity

Component(s)

Phosphine oxide (100%)

Toxicity to fish (mg/l)	LC50(96h)(Brachydanio rerio)(OESO 203)	>90
Aquatic invertebrates (mg/l)	EC50(48h) (Daphnia magna)(OECD 202)	>1175
Aquatic plants (mg/l)	EC50(72h) (Desmodesmus subspicatus)(OECD 201)	>260
Micro-organisms / effect on activated sludge (mg/l)	EC50(3h) (Activated sludge)(DEV L8)	>100

12.2 Persistence/degradability

Phosphine oxide (100%)

Poorly biodegradable. Not readily biodegradable (by OECD criteria).

Elimination information:

1 % CO₂ BOD of the ThOD (29 d) (OECD 301 B) (activated sludge).

12.3 Bioaccumulative potential

Phosphine oxide (100%)

Does not significantly accumulate in organisms

Bioaccumulative potential: BCF <5, Cyprinus carpio (Common carp)

12.4 Mobility in soil

Phosphine oxide (100%)

Insoluble in water. Adsorption: Water – Log K_{oc}: 3.85 @ 40°C.

12.5 Other adverse effects

Phosphine oxide (100%)

PBT: no

vPvB: no

12.6. Other adverse effects

Phosphine oxide (100%)
Not applicable.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Do not discharge into drain/surface water/groundwater. Dispose of in accordance with national, state and local regulations. Incinerate under approved controlled conditions, using incinerators for the disposal for organic chemicals. Decontaminate empty drums before recycling.

SECTION 14 Transport information

14.1. UN-Nummer

Not classified as a dangerous good under transport regulations.

14.2. UN Proper Shipping Name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Toxic to aquatic life with long lasting effects.

14.6. Special precautions for user

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14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15 Regulation information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)
Annex XIV - List of substances subject to authorisation
Substances of very high concern
None of the components are listed.
Annex XVII - Restrictions : Not applicable.

on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

National regulations

International regulations.

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out .

SECTION 16 Other information

History

Date of printing:

Date of issue/Date of revision:

Date of previous issue:

Legend

Note: Not all of the following are necessarily contained in the Safety Data Sheet

Abbreviations and acronyms : ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

UN = United Nations

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