Dental Model Resin

MATERIAL SAFETY DATA SHEET

MSDS code: DT/MDR-C-RDMS-008

Creation Date: August 13, 2021

Revision Date: April 15, 2024

Revision instructions: Add new resin DM11-V2

Hangzhou SHINING 3D Dental Technology Co., Ltd.

Stock code:830978

SECTION 1: Chemical product and company identification

English product name: Dental Model Resin
English product code: DM11/DM11-V2/DM12/DM15/DM05/DM03/WP01
Chemical Chinese name: 光敏聚合物树脂
Chemical English name: Photopolymer Resin
Product description: Mixture of acrylic and methacrylic acid esters, photoinitiators, proprietary pigment and additive package.
Identified uses: Photopolymer Resin for AccuFab Series 3D Printer.
Company: Hangzhou SHINING 3D Dental Technology Co., Ltd.
Address: 9-5-2,Tri-River Valley,Wenyan Street, Xiaoshan, Hangzhou, Zhejiang, China.
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MSDS code: DT/MDR-C-RDMS-008

SECTION 2: Hazards summarizing

GHS(Globally Harmonized System of Classification and Labeling of Chemicals)**:**
Acute toxicity - Oral, Category 4
Serious eye damage, Category 1
Skin sensitization, Category 2
Specific target organ toxicity - repeated exposure, Category 2
Pictogram(s):

Signal word Danger
Hazard statement(s)
H318 Causes serious eye damage.
H315 Causes skin irritation.
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H361f Causing atrophy of the testes
H373 May cause damage to organs (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H412 Harmful to aquatic life with long lasting effects.
Precautionary statement(s)
Prevention

P260 Do not breathing vapour. (uncured material only)

P264 Wash thoroughly after handing.

P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves, protective clothing, eye protection, face protection.

Response

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/...if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of water/...
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P314 Get medical advice and attention if you feel unwell.

Storage： Not applicable.

Disposal

P501 Dispose of contents/container to...

Other hazards which do not result in classification

None

SECTION 3: Composition/information on ingredients

Ingredients: Photopolymer Resin/Mixture

Ingredients:	CAS No.	Composition (%)
Methacrylated monomers	(Patent)	10-70
Methacrylated oligomers	(Patent)	20-50
Photoinitiator	(Patent)	0.5-5

SECTION 4: First-aid measures

General advice： Consult a physician. Show this safety date sheet to the doctor in attendance.

Skin contact: Wash off with soap and plenty of water. Consult a physician.

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

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

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

SECTION 5: Fire-fighting measures

Specific Hazards

Toxic and irritating gases may formed from decomposition of acrylate resin. High temperatures, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerization generating heat/pressure. Closed containers may rupture or explode during runaway polymerization. This material is harmful 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.

5.1 Extinguishing Media

Hazards from Combustion Products

Carbon monoxide, carbon dioxide and nitrogen oxides.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

No data available

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. 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

Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.
Do not reuse container.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Not available

Biological limit values

Not available

8.2 Appropriate engineering controls

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

8.3 Individual protection measures, such an personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166.Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH(US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handing large quantities.

Thermal hazards

Not available

SECTION 9: Physical and chemical properties

Physical state	Liquid
Colour	Beige / Yellow / Gray / Yellow/ Gray/ White
Odour	Ester-like Odor
Melting point/freezing point	Not available
Boiling point or initial boiling point and boiling rang	>100°C (>212°F)
Flammability	Not available
Lower and upper explosion limit/flammability limit	Not available
Flash point	Closed cup: >100°C (>212°F) [Setaflash.]
Auto-ignition temperature	Not available
Decomposition temperature	Not available
PH	Not available
Kinematic viscosity	Not available
Solubility	Almost insoluble in water, good solubility in most organic solvents.
Partition coefficient n-octanol/water (log value)	Not available
Vapour pressure	Not available
Density and/or relative density	1.15 g/mL at 25℃（lit.）
Relative vapour density	Not available
Particle characteristics	Not available

SECTION 10: Stability and reactivity

10.1 Reactivity

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

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Hazardous reactions or instability may occur under certain conditions of storage or use.

10.4 Conditions to avoid

Light, electrostatic discharge, heat, humidity.

10.5 Incompatible materials

Polymerization initiators, including peroxides, strong oxidizing agents, alcohols, copper, copper alloys, carbon steel, iron, rust, and strong bases.

SECTION 11: Toxicological information

Acute toxicity
Oral: Not available
Inhalation: Not available
Dermal: Not available
Information on the likely routes of exposure:Not available

11.1 Potential acute health effects

Skin contact

Causes skin irritation. May cause an allergic skin reaction.

Eye contact

Causes serious eye damage.

Inhalation

No known significant effects or critical hazards.

Ingestion

No known significant effects or critical hazards.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Skin contact

Redness, irritation

Eye contact

Pain or irritation, watering, redness.

Inhalation

Suspected of damaging fertility, may cause damage to organs.

Ingestion

Suspected of damaging fertility, may cause damage to organs.

11.3 Potential chronic health effects

Not available.

General

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. May cause damage to organs through prolonged or repeated exposure (state route of exposure
if it is conclusively proven that no other routes of exposure cause the hazard)

Carcinogenicity

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Developmental effects

No known significant effects or critical hazards.

Fertility effects

Suspected of damaging fertility.

Germ cell mutagenicity

No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Not available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: disposal

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

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

14.2 UN Proper Shipping Name

ADR/RID: unknown
IMDG: unknown
IATA: unknown

14.3 Transport hazard class(es)

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

14.4 Packing group, if applicable

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

14.5 Environmental hazards

ADR/RID: No	IMDG: No	IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

SECTION 15: Regulatory information

Chemical name	Common names and synonyms	CAS number	EC number
Photopolymer Resin	Photopolymer Resin	Patent	None
European Inventory of Existing Commercial Chemical Substances (EINECS)			Not Listed
EC Inventor			Not Listed
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed
China Catalog of Hazardous chemicals 2015			Not Listed
New Zealand Inventory of Chemicals (NZIoC)			Not Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Not Listed

SECTION 16: Other information

Information on revision

Creation Date	August 13,2021
Revision Date	June 12, 2023

Abbreviations and acronyms

CAS: Chemical Abstracts Service

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
- http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:

- http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/