

Safety Data Sheet

according to 29 CFR 1910.1200(g)

RS VIVO Model Sand

Revision date: 03/17/2025

Product code: RS006192

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1. Identification

Product identifier

RS VIVO Model Sand

Recommended use of the chemical and restrictions on use

Use of the substance/mixture

Light-curing resin for additive manufacturing of dental models

Details of the supplier of the safety data sheet

Company name: Rapid Shape GmbH
 Street: Römerstrasse 21
 Place: 71296 Heimsheim
 Telephone: +49 (0) 7033/309878-0
 E-mail (Contact person): info@rapidshape.de
 Internet: http://rapidshape.de

Telefax: +49 (0) 7033/309878-40

2. Hazard(s) identification

Classification of the chemical

29 CFR Part 1910.1200

Skin corrosion/irritation: Skin Irrit. 2

Respiratory or skin sensitization: Skin Sens. 1

Label elements

29 CFR Part 1910.1200

Signal word: Warning

Pictograms:



Hazard statements

Causes skin irritation

May cause an allergic skin reaction

Precautionary statements

Avoid breathing dust/vapours/spray.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection.

If on skin: Wash with plenty of water and soap.

If skin irritation or rash occurs: Get medical advice/attention.

Collect spillage.

Dispose of contents/container in accordance with local regulation.

Hazards not otherwise classified

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

3. Composition/information on ingredients

Mixtures

Chemical characterization

Mixture of acrylic resins and initiators.

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Relevant ingredients

CAS No	Components	Quantity
72869-86-4	urethane dimethacrylate (UDMA)	* 50 -70 %
	Acrylic-resin	* < 30 %
	Acrylic resin	* < 10 %
5187-23-5	5-ethyl-1,3-dioxane-5-methanol	* 1 - < 5 %
	Phosphine oxide	*1 - < 5 %

Further Information

* The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General information

Get medical advice/attention if you feel unwell. Immediately remove any contaminated clothing, shoes or stockings.

After inhalation

Get medical advice/attention if you feel unwell. Provide fresh air.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Immediately remove any contaminated clothing, shoes or stockings. If skin irritation occurs: Get medical advice/attention.

After contact with eyes

After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. If eye irritation persists: Get medical advice/attention.

After ingestion

Do NOT induce vomiting. Medical treatment necessary.

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Foam, Extinguishing powder, Carbon dioxide.

Unsuitable extinguishing media

Full water jet

Specific hazards arising from the chemical

In case of fire may be liberated: Carbon monoxide, Carbon dioxide, Hazardous decomposition products.

Special protective equipment and precautions for fire-fighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

Suppress gases/vapors/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

6. Accidental release measures

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Personal precautions, protective equipment and emergency procedures

General advice

Provide adequate ventilation. Do not breathe gas/fume/vapor/spray. Avoid contact with skin, eyes and clothes.
Use personal protection equipment.

Environmental precautions

Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up

Other information

Larger quantities: Take up mechanically (by pumping). Smaller quantities and/or residues: Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Reference to other sections

Safe handling: see section 7
Personal protection equipment (PPE): see section 8
Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Do not breathe gas/fume/vapor/spray.
Provide fresh air.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking.

Advice on general occupational hygiene

Avoid contact with skin, eyes and clothes. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Protect from the action of light. Keep only in the original container at a temperature between 4 – 25 °C (40 – 77 °F). Can polymerize with intense heat release.

Hints on joint storage

No special measures are necessary.

8. Exposure controls/personal protection

Control parameters

Exposure controls

Individual protection measures, such as personal protective equipment

Eye/face protection

Eye glasses with side protection

Hand protection

Gloves should be replaced regularly, especially after extended contact with the product. For each work-place a suitable glove type has to be selected.

Skin protection

Wear suitable protective clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state: Liquid

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Color:	golden brown	
Odor:	characteristic	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		> 100 °C
Flammability:		not determined
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		> 100 °C
Auto-ignition temperature:		not determined
Decomposition temperature:		not determined
pH-Value:		not determined
Viscosity / kinematic:		not determined
Water solubility:		not determined
Solubility in other solvents		
not determined		
Partition coefficient n-octanol/water:		not determined
Vapor pressure:		not determined
Density:		not determined
Relative vapour density:		not determined
Particle characteristics:		not applicable

Other information

Information with regard to physical hazard classes

Self-ignition temperature

Solid:

not applicable

Gas:

not applicable

Other safety characteristics

Evaporation rate:

not determined

Solid content:

not determined

Further Information

Product has not been tested. The statement is derived from the properties of the components.

10. Stability and reactivity

Reactivity

No hazardous reaction when handled and stored according to provisions.

Chemical stability

The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions

Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

Conditions to avoid

Protect from the action of light. Keep only in the original container at a temperature between 4 – 25 °C (40 – 77 °F). Can polymerize with intense heat release.

Incompatible materials

Oxidising agent, Reducing agent, Heavy metals, Acids, Alkali (lye).

Hazardous decomposition products

No known hazardous decomposition products.

11. Toxicological information

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Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met.

ATEmix calculated

ATE (oral) > 5000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
72869-86-4	urethane dimethacrylate (UDMA)				
	oral	LD50 >5000 mg/kg	Rat	OECD 401	
	dermal	LD50 >2000 mg/kg	Rat	OECD 402	
	inhalation (4 h) dust/mist	LC50 >5 mg/l			
	Acrylic-resin				
	oral	LD50 > 2000 mg/kg	Rat		OECD 423
	dermal	LD50 > 2000 mg/kg	Rat		OECD 402
	Acrylic resin				
	oral	LD50 > 2000 mg/kg	Rat	OECD 423	
	dermal	LD50 > 2000 mg/kg	Rat	OECD 402	
5187-23-5	5-ethyl-1,3-dioxane-5-methanol				
	oral	LD50 > 2000 mg/kg	Rat	OECD 401	
	Phosphine oxide				
	oral	LD50 > 2000 mg/kg	Rat		
	dermal	LD50 > 2000 mg/kg	Rat		
	inhalation (4 h) dust/mist	LC50 >5 mg/l			

Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Sensitizing effects

May cause an allergic skin reaction (urethane dimethacrylate (UDMA); Acrylic-resin; Acrylic resin; Phosphine oxide)

May cause sensitization by skin contact.

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

Specific target organ toxicity (STOT) - single exposure

Based on available data, the classification criteria are not met.

Specific target organ toxicity (STOT) - repeated exposure

Based on available data, the classification criteria are not met.

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Carcinogenicity (OSHA): No ingredient of this mixture is listed.
 Carcinogenicity (IARC): No ingredient of this mixture is listed.
 Carcinogenicity (NTP): No ingredient of this mixture is listed.

Aspiration hazard

Based on available data, the classification criteria are not met.

Further information

The product has not been tested. The statement is derived from the properties of the single components.

12. Ecological information

Ecotoxicity

CAS No	Components					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
72869-86-4	urethane dimethacrylate (UDMA)					
	Acute fish toxicity	LC50 10,1 mg/l	96 h	Danio rerio (zebrafish)	OECD 203	
	Acute algae toxicity	ErC50 >0,68 mg/l	72 h	Desmodesmus subspicatus	OECD 201	
	Acute crustacea toxicity	EC50 >1,2 mg/l	48 h	Daphnia magna (Big water flea)		
	Acrylic-resin					
	Acute fish toxicity	LC50 4 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)		
	Acute algae toxicity	ErC50 34 mg/l	72 h		OECD 201	
	Acute crustacea toxicity	EC50 20 mg/l	48 h		OECD 202	
	Acrylic resin					
	Acute fish toxicity	LC50 1,65 mg/l	96 h	Danio rerio (zebrafish)	OECD 203	
	Acute algae toxicity	ErC50 1,6 mg/l	72 h	Pseudokirchneriella subcapitata	OECD 201	
	Acute crustacea toxicity	EC50 2,36 mg/l	48 h	Daphnia magna (Big water flea)	OECD 202	
5187-23-5	5-ethyl-1,3-dioxane-5-methanol					
	Acute fish toxicity	LC50 >1000 mg/l	96 h	Danio rerio (zebrafish)		
	Acute algae toxicity	ErC50 >1000 mg/l	72 h			
	Acute crustacea toxicity	EC50 2466 mg/l	48 h	Daphnia magna (Big water flea)		
	Phosphine oxide					
	Acute fish toxicity	LC50 (> 0,09) mg/l	96 h	Danio rerio (zebrafish)		
	Acute algae toxicity	ErC50 >0,26 mg/l	72 h	Desmodesmus subspicatus		
	Acute crustacea toxicity	EC50 (> 1,175) mg/l	48 h	Daphnia magna (Big water flea)		

Persistence and degradability

The product has not been tested.

Bioaccumulative potential

The product has not been tested.

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Mobility in soil

The product has not been tested.

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

Other adverse effects

No information available.

Further information

Do not allow uncontrolled discharge of product into the environment. Do not allow to enter into surface water or drains.

13. Disposal considerations

Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

14. Transport information

Marine transport (IMDG)

<u>UN number or ID number:</u>	UN 3082
<u>UN proper shipping name:</u>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ACRYLIC RESIN)
<u>Transport hazard class(es):</u>	9
<u>Packing group:</u>	III
Hazard label:	9
Special Provisions:	274, 335, 969
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-F

Air transport (ICAO-TI/IATA-DGR)

<u>UN number or ID number:</u>	UN 3082
<u>UN proper shipping name:</u>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ACRYLIC RESIN)
<u>Transport hazard class(es):</u>	9
<u>Packing group:</u>	III
Hazard label:	9
Special Provisions:	A97 A158 A197
Limited quantity Passenger:	30 kg G
Passenger LQ:	Y964
Excepted quantity:	E1
IATA-packing instructions - Passenger:	964
IATA-max. quantity - Passenger:	450 L
IATA-packing instructions - Cargo:	964
IATA-max. quantity - Cargo:	450 L

Other applicable information (air transport)

A 197: These substances are not subject to other provisions of these Regulations when carried in single or combination packagings with a net quantity per single or inner packaging not exceeding 5 L for liquids and a net weight not exceeding 5kg for substances, provided the packagings meet the general requirements of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

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Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes
 Danger releasing substance: ACRYLIC RESIN

Special precautions for user

No information available.

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

not applicable

15. Regulatory information

U.S. Regulations

National regulatory information

SARA Section 311/312 Hazards:

urethane dimethacrylate (UDMA) (72869-86-4): Immediate (acute) health hazard
 Acrylic-resin (-): Immediate (acute) health hazard
 Acrylic resin (-): Immediate (acute) health hazard
 5-ethyl-1,3-dioxane-5-methanol (5187-23-5): Immediate (acute) health hazard
 Phosphine oxide (-): Immediate (acute) health hazard

State Regulations

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

This product can not expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other information

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Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
 (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service
 LC50: Lethal concentration, 50%
 LD50: Lethal dose, 50%

Other data

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)