



**Safety Data Sheet
according to HPR, Schedule 1**

Printing date 11/22/2022

Reviewed on 11/22/2022

1 Identification

- **Product identifier**
 - **Trade name:** **dima Print Cast ruby**
 - -
 - **Application of the substance / the mixture** Manufacture of dental prothesis
- **Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
Kulzer GmbH
Leipziger Straße 2, 63450 Hanau (Germany) Tel.: +49 (0)800 4372522
 - **Information department:**
Tel. +1 (800) 431-1785 Fax: +1 (800) 522-1545
e-mail: customer.servicehka@kulzer-dental.com
 - **Emergency telephone number:**
Emergency CONTACT (24-Hour-Number)
ID 105860: (domestic) 1 800 535 5053 or international (001) 352 323 3500

2 Hazard identification

- **Classification of the substance or mixture**

Skin Irritation - Category 2	H315 Causes skin irritation.
Eye Irritation - Category 2A	H319 Causes serious eye irritation.
Skin Sensitizer - Category 1	H317 May cause an allergic skin reaction.
Specific Target Organ Toxicity - Single Exposure - Category 3	H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS07

- **Signal word** Warning

- **Hazard-determining components of labeling:**

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

- **Hazard statements**

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

May cause respiratory irritation.

- **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

If on skin: Wash with plenty of water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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- **Classification system**
- **NFPA ratings for USA (scale 0-4)**



- **HMIS-Ratings (Scale 0-4)**



- **Other hazards -**

3 Composition/Information on ingredients

- **Chemical characterization: Mixtures**
- **Description: -**

- **Dangerous components:**

7534-94-3	Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate Skin Irritation - Category 2, H315; Eye Irritation - Category 2A, H319; Specific Target Organ Toxicity - Single Exposure - Category 3, H335	≥25-≤50% w/w *
72869-86-4	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate Skin Sensitizer - Category 1B, H317	≥25-≤50% w/w *
162881-26-7	phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide Skin Sensitizer - Category 1A, H317	≥1-≤5% w/w *

* Actual concentration ranges are withheld as a trade secret.

- **Additional information** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

- **Description of first aid measures**
 - **After inhalation** Supply fresh air; consult doctor in case of complaints.
 - **After skin contact**
Immediately rinse with water.
If skin irritation continues, consult a doctor.
 - **After eye contact**
Rinse opened eye for several minutes under running water. Then consult a doctor.
 - **Information for doctor**
 - **Most important symptoms and effects, both acute and delayed** Allergic reactions
 - **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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- Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
 - **Protective equipment:** No special measures required.
- **Additional information -**

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Do not breathe vapor / mist / gas.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid binding material (diatomite, universal binders, for small amounts tissues).
- **Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
-

7 Handling and storage

- **Handling**
 - **Precautions for safe handling**
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
 - **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and receptacles:**
Protect from exposure to the light.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:** Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

- **Control parameters**
 - **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
Not required.
 - **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.

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Avoid contact with the eyes and skin.

· **Breathing equipment:**

Use suitable respiratory protective device only when aerosol or mist is formed.
Filter P2.

· **Protection of hands:**

If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.

Solvent resistant gloves

Check protective gloves prior to each use for their proper condition.

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

Butyl rubber, BR

Nitrile rubber, NBR

· **Eye protection:** Tightly sealed goggles.

· **Body protection:** Light weight protective clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· **Form:**

Fluid

· **Color:**

Red

· **Odor:**

Ether-like

· **Odor threshold:**

Not determined.

· **pH-value:**

Not determined.

· **Change in condition**

· **Melting point/Melting range:**

undetermined

· **Boiling point/Boiling range:**

140 °C (284 °F)

· **Flash point:**

>100 °C (>212 °F)

· **Flammability (solid, gaseous)**

Not applicable.

· **Decomposition temperature:**

Not determined.

· **Auto igniting:**

Product is not selfigniting.

· **Danger of explosion:**

Product does not present an explosion hazard.
Not determined.

· **Explosion limits:**

· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Vapor pressure at 20 °C (68 °F):**

40 hPa (30 mm Hg)

· **Density:**

Not determined

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· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
· dynamic:	Not determined.
· kinematic:	Not determined.
· Solvent content:	
· Solids content:	0,0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Possibility of hazardous reactions**
 - Photoreactive
 - Polymerization
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** none
- **Additional information:** -

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
7534-94-3 Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate		
Oral	LD50	3.160 mg/kg (rat)
72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazaheptadecane-1,16-diyl bismethacrylate		
Oral	LD50	>5.000 mg/kg (rat) (OECD 401)
Dermal	LD50	>2.000 mg/kg (rat) (OECD 402)
162881-26-7 phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide		
Oral	LD50	>2.000 mg/kg (rat) (OECD 401)
Dermal	LD50	>2.000 mg/kg (rat) (OECD 402)
81-64-1 1,4-dihydroxyanthraquinone		
Oral	LD50	>5.000 mg/kg (rat) (OECD 401)
Dermal	LD50	>2.500 mg/kg (rat) (OECD 402)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.

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· **Additional toxicological information:**

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **Reproductive toxicity**

162881-26-7 phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

Oral | NOAEL (Elterliche Toxizität) | >1.000 mg/kg/d (rat)

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

7534-94-3 Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

EC50/72h | 2,28 mg/l (algae)
EC50/48h | >2,57 mg/l (daphnia)
LC50/96h | 1,79 mg/l (fish)
NOEC / 21d | 0,233 mg/l (daphnia)

72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate

EC50/48h | >1,2 mg/l (daphnia) (OECD 202)
LC50/96h | 10,1 mg/l (fish) (OECD 203)
ErC50 / 72 h | >0,68 mg/l (algae) (OECD 201)
NOEC / 72h | 0,21 mg/l (algae) (OECD 201)

162881-26-7 phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

EC50/72h | >0,26 mg/l (algae) (OECD 201)
EC50/48h | >1,175 mg/l (daphnia) (OECD 202)
LC50/96h | >0,09 mg/l (fish) (OESO 203)

· **Persistence and degradability**

72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate

biodegradability | 22 % /28d (not defined) (OECD 301B; ISO/ 9439/ EEC 92/69/V, C.4-C)

· **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

· **Ecotoxicological effects:**

- **Remark:** Toxic for fish

· **Additional ecological information:**

· **General notes:**

Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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· **Other adverse effects** No further relevant information available.

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13 Disposal considerations

· **Waste treatment methods**

· **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

· **Uncleaned packagings:**

· **Recommendation:**

Disposal must be made according to official regulations.

Non contaminated packagings can be used for recycling.

14 Transport information

· **UN-Number**

· **DOT/TDG, ADR, IMDG, IATA**

UN3082

· **UN proper shipping name**

· **DOT/TDG**

· **ADR**

Environmentally hazardous substance, liquid, n.o.s.
3082 ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S. (Exo-1,7,7-
trimethylbicyclo[2.2.1]hept-2-yl methacrylate,
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-
5,12-diazahexadecane-1,16-diyl bismethacrylate)
ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S. (Exo-1,7,7-
trimethylbicyclo[2.2.1]hept-2-yl methacrylate,
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-
5,12-diazahexadecane-1,16-diyl bismethacrylate)

· **IMDG, IATA**

· **Transport hazard class(es)**

· **DOT, IMDG**



· **Class**

9 Miscellaneous dangerous substances and articles

· **Label**

9

· **ADR**



· **Class**

9 (M6) Miscellaneous dangerous substances and articles

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· Label	9
· IATA	
	
· Class	9 Miscellaneous dangerous substances and articles
· Label	9
· Packing group	
· DOT/TDG, ADR, IMDG, IATA	III
· Environmental hazards:	
· Special marking (ADR):	Symbol (fish and tree)
· Special marking (IATA):	Symbol (fish and tree)
· Special precautions for user	Warning: Miscellaneous dangerous substances and articles
· Hazard identification number (Kemler code):	90
· EMS Number:	F-A,S-F
· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	-
· ADR	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EXO-1,7,7-TRIMETHYLBICYCLO[2.2.1]HEPT-2-YL METHACRYLATE, 7,7,9(OR 7,9,9)-TRIMETHYL-4,13-DIOXA-3,14-DIOXA-5,12-DIAZAHXADECANE-1,16-DIYL BISMETHACRYLATE), 9, III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

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· **SARA Section 355 (extremely hazardous substances)**

None of the ingredients is listed.

· **Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

16 Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

· **Date of the latest revision of the safety data sheet 11/22/2022**

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

· *** Data compared to the previous version altered.**