

Page 1/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022 Version number 2 (replaces version 1) Revision: 22.11.2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- · 1.1 Product identifier
 - · Trade name: dima Print Cast ruby
- · 1.2 Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.
 - · Application of the substance / the mixture Manufacture of dental prothesis
- · 1.3 Details of the supplier of the safety data sheet
 - Manufacturer/Supplier:

Kulzer GmbH

Leipziger Straße 2, 63450 Hanau (Germany) Tel.: +49 (0)800 4372522

- · Informing department: E-Mail: msds@kulzer-dental.com
- · 1.4 Emergency telephone number: Emergency CONTACT (24-Hour-Number): +49 (0)6132-84463

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
 - · Classification according to Regulation (EC) No 1272/2008

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

- · 2.2 Label elements
 - Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

· Hazard pictograms





GHS07 GHS09

- · Signal word Warning
- Hazard-determining components of labelling:

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-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

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling. P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing.

(Contd. on page 2)



Page 2/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022 Version number 2 (replaces version 1) Revision: 22.11.2022

Trade name: dima Print Cast ruby

(Contd. of page 1)

· Additional information:

Contains isocyanates. May produce an allergic reaction.

- · 2.3 Other hazards -
 - · Results of PBT and vPvB assessment
 - · **PBT:** Not applicable. · **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- · 3.2 Mixtures
 - Description: -

 Description		
Dangerous components:		
CAS: 7534-94-3 EINECS: 231-403-1 Reg.nr.: 01-2119886505-27- XXXX	Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335 Aquatic Chronic 3, H412	≥25-≤50%
CAS: 72869-86-4 EINECS: 276-957-5 Reg.nr.: 01-2120751202-68-xxxx	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyloismethacrylate Aquatic Chronic 2, H411 Skin Sens. 1B, H317 EUH204	≥25-≤50%
CAS: 162881-26-7 ELINCS: 423-340-5 Reg.nr.: 01-2119489401-38-xxx	phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide (Skin Sens. 1A, H317 Aquatic Chronic 4, H413	≥1-≤5%
CAS: 81-64-1	1,4-dihydroxyanthraquinone Muta. 2, H341 Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10)	≥0.0025-<0.025%
ELINCS: 423-340-5 Reg.nr.: 01-2119489401-38-xxxx CAS: 81-64-1	phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide (Skin Sens. 1A, H317 Aquatic Chronic 4, H413 1,4-dihydroxyanthraquinone Muta. 2, H341 Aquatic Acute 1, H400 (M=10); Aquatic Chronic	≥0.0025-<0.025

[·] Additional information For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- · 4.1 Description of first aid measures
 - · After inhalation Supply fresh air; consult doctor in case of symptoms.
 - · After skin contact

Instantly rinse with water.

If skin irritation continues, consult a doctor.

· After eye contact

Rinse opened eye for several minutes under running water. Then consult doctor.

- 4.2 Most important symptoms and effects, both acute and delayed Allergic reactions
- 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
 - Suitable extinguishing agents

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam. Use fire fighting measures that suit the environment.

(Contd. on page 3)



Page 3/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022

Version number 2 (replaces version 1)

Revision: 22.11.2022

Trade name: dima Print Cast ruby

(Contd. of page 2)

- For safety reasons unsuitable extinguishing agents Water with a full water jet.
- · 5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

- 5.3 Advice for firefighters
 - Protective equipment: No special measures required.
 - Additional information -

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away. Do not breathe vapor / mist / gas.
- 6.2 Environmental precautions: Do not allow to enter drainage system, surface or ground water.
- 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).

6.4 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 information on disposal.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Keep containers tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

- Information about protection against explosions and fires: No special measures required.
- · 7.2 Conditions for safe storage, including any incompatibilities
 - Storage
 - Requirements to be met by storerooms and containers: Protect from the effects of light.
 - · Information about storage in one common storage facility: Not required.
 - Further information about storage conditions: Protect from heat and direct sunlight.
- · 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- · 8.1 Control parameters
 - Components with critical 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.

DNELs

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

Oral	general population, long term, systemic	0.3 mg/Kg (not defined)
Dermal	worker industrial, long term, systemic	1.3 mg/Kg/d (not defined)
	general population, long term, systemic	0.7 mg/Kg/d (not defined)
Inhalative	worker industrial, long term, systemic	3.3 mg/m3 (not defined)
	general population, long term, systemic	0.6 mg/m3 (not defined)

(Contd. on page 4)



Page 4/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022 Version number 2 (replaces version 1) Revision: 22.11.2022

Trade name: dima Print Cast ruby

	(Contd. of page 3)	
· PNECs		
7534-94-3 Exo-1,7,7-trimethylbicy	clo[2.2.1]hept-2-yl methacrylate	
freshwater	0.00466 mg/l (not defined)	
sewage treatment plant	2.45 mg/l (not defined)	
sediment, dry weight, freshwater	0.604 mg/Kg (not defined)	
soil, dry weight	0.118 mg/Kg (not defined)	
72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate		
freshwater	0.01 mg/l (not defined)	
marine water	0.001 mg/l (not defined)	
sewage treatment plant	3.61 mg/l (not defined)	
sediment, dry weight, freshwater	4.56 mg/Kg (not defined)	
sediment, dry weight, marine water	0.46 mg/Kg (not defined)	
soil, dry weight	0.91 mg/Kg (not defined)	

Additional information: The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Individual protection measures, such as personal protective equipment

General protective and hygienic measures

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

· Breathing equipment:

Use breathing protection only when aerosol or mist is formed.

Filter P2.

· Hand protection

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 trough 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/face protection Tightly sealed safety glasses.
- · Body protection: Light weight protective clothing

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

General Information

· Physical state Fluid

(Contd. on page 5)



Page 5/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022 Version number 2 (replaces version 1) Revision: 22.11.2022

Trade name: dima Print Cast ruby

(Contd. of page 4)

· Colour: Red · Smell: Ether-like Odour threshold: Not determined. · Melting point/freezing point: Not determined Boiling point or initial boiling point and 140 °C (72869-86-4 7,7,9(or 7,9,9)-trimethylboiling range 4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate) Not applicable.

· Flammability · Lower and upper explosion limit

Not determined. Lower: Not determined. · Upper:

>100 °C (72869-86-4 7,7,9(or 7,9,9)-trimethyl-Flash point: 4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-

Not determined.

Decomposition temperature: SADT

рΗ

. Viscositv: Kinematic viscosity · dynamic:

· Solubility Water:

· Partition coefficient n-octanol/water (log

Steam pressure at 20 °C:

Density and/or relative density

Density Relative density

· Vapour density

1,16-diyl bismethacrylate)

Not determined.

Not determined. Not determined.

Not miscible or difficult to mix

Not determined.

40 hPa

Not determined Not determined. Not determined.

· 9.2 Other information No further relevant information available.

Appearance:

Form: Fluid

· Important information on protection of health and environment, and on safety.

Self-inflammability: Product is not selfigniting. Product is not explosive. · Explosive properties: Not determined.

· Solvent content:

Solids content: 0.0 %

Change in condition

Evaporation rate Not determined.

· Information with regard to physical hazard classes

 Explosives Void Flammable gases Void · Aerosols Void Oxidising gases
Gases under pressure Void Void · Flammable liquids Void Flammable solids Void · Self-reactive substances and mixtures Void Void · Pyrophoric liquids

(Contd. on page 6)



Page 6/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022 Version number 2 (replaces version 1) Revision: 22.11.2022

Trade name: dima Print Cast ruby

		(Contd. of page 5)
· Pyrophoric solids	Void	
Self-heating substances and mixtures	Void	
· Substances and mixtures, which emit		
flammable gases in contact with water	Void	
· Oxidising liquids	Void	
· Oxidising solids	Void	
· Organic peroxides	Void	
· Corrosive to metals	Void	
Desensitised explosives	Void	

SECTION 10: Stability and reactivity

- · 10.1 Reactivity No further relevant information available.
- · 10.2 Chemical stability
 - Conditions to be avoided: No decomposition if used and stored according to specifications.
- 10.3 Possibility of hazardous reactions

Photoreactive

Polymerisation

- · 10.4 Conditions to avoid No further relevant information available.
- · 10.5 Incompatible materials: No further relevant information available.
- · 10.6 Hazardous decomposition products: None
 - Additional information: -

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 · Acute toxicity Based on available data, the classification criteria are not met.

· LD/LC50 values that are relevant for classification:				
7534-94	7534-94-3 Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate			
Oral	Oral LD50 3,160 mg/kg (rat)			
72869-8	72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate			
Oral	LD50	>5,000 mg/kg (rat) (OECD 401)		
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)		
162881	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	81-64-1 1,4-dihydroxyanthraquinone			
Oral	LD50	>5,000 mg/kg (rat) (OECD 401)		
Dermal	LD50	>2,500 mg/kg (rat) (OECD 402)		

- · Skin corrosion/irritation
- Causes skin irritation.
- Serious eye damage/irritation

Causes sérious eye irritation.

- Respiratory or skin sensitisation May cause an allergic skin reaction.
- · Germ cell mutagenicity Based on available data, the classification criteria are not met.
- Carcinogenicity Based on available data, the classification criteria are not met.

(Contd. on page 7)



Page 7/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022 Version number 2 (replaces version 1) Revision: 22.11.2022

Trade name: dima Print Cast ruby

(Contd. of page 6)

· Reproductive toxicity

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

Oral NOAEL (parental toxicity) >1,000 mg/kg/d (rat)

STOT-single exposure

May cause respiratory irritation.

- STOT-repeated exposure Based on available data, the classification criteria are not met.
- Aspiration hazard Based on available data, the classification criteria are not met.
- 11.2 Information on other hazards
 - · Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:	
7534-94-3 Exo-1,7,7-trime	ethylbicyclo[2.2.1]hept-2-yl methacrylate

EC50/72h	2.28 mg/l (algae)
EC50/48h	>2.57 mg/l (daphnia)
	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)

EC50/48N	>1.2 mg/i (dapnnia) (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)
	LC50/96h ErC50 / 72 h

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)

· 12.2 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

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

- 12.3 Bioaccumulative potential No further relevant information available.
- 12.4 Mobility in soil No further relevant information available.
- · 12.5 Results of PBT and vPvB assessment
 - · PBT: Not applicable.
 - · vPvB: Not applicable.
- 12.6 Endocrine disrupting properties

For information on endocrine disrupting properties see section 11.

- · 12.7 Other adverse effects
 - · Remark: Toxic for fish
 - Additional ecological information:
 - · General notes:

Also poisonous for fish and plankton in water bodies.

(Contd. on page 8)



Page 8/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022

Version number 2 (replaces version 1)

Revision: 22.11.2022

Trade name: dima Print Cast ruby

Toxic for aquatic organisms

(Contd. of page 7)

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

Recommendation

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

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.

111 1 IIN number or ID number	
14.1 UN number or ID number · ADR, IMDG, IATA	UN3082
14.2 UN proper shipping name · ADR · IMDG, IATA	3082 ENVIRONMENTALLY HAZARDOU 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 HAZARDOU 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
14.3 Transport hazard class(es) · ADR	

· Class	9 (M6) Miscellaneous dangerous substance and articles.
· Label	9
· IMDG	
₹	
9	



Page 9/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022

Version number 2 (replaces version 1)

Revision: 22.11.2022

Trade name: dima Print Cast ruby

	(Contd. of page
· Label	9
IATA	
1 1 1 1 1 1 1 1 1 1	
9	
· Class	9 Miscellaneous dangerous substances an articles.
Label	9
· 14.4 Packing group · ADR, IMDG, IATA	III
14.5 Environmental hazards: Special marking (ADR):	Symbol (fish and tree) Symbol (fish and tree)
Special marking (IATA):	, ,
· 14.6 Special precautions for user	Warning: Miscellaneous dangerous substances an articles.
· Kemler Number:	90
· EMS Number:	F-A,S-F
Stowage Category	A
14.7 Maritime transport in bulk accordin IMO instruments	g to Not applicable.
· Transport/Additional information:	<u>-</u>
· ADR · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging 30 ml Maximum net quantity per outer packaging 1000 ml
· Transport category · Tunnel restriction code	3
· IMDG	
· Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging 30 ml Maximum net quantity per outer packaging 1000 ml
· UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOU SUBSTANCE, LIQUID, N.O.S. (EXO-1,7,7 TRIMETHYLBICYCLO[2.2.1]HEPT-2-Y METHACRYLATE, 7,7,9(OR 7,9,9)-TRIMETHYL 4,13-DIOXO-3,14-DIOXA-5,12



Page 10/10

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 22.11.2022 Version number 2 (replaces version 1) Revision: 22.11.2022

Trade name: dima Print Cast ruby

(Contd. of page 9)

SECTION 15: Regulatory information

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - · Directive 2012/18/EU
 - · Named dangerous substances ANNEX I None of the ingredients is listed.
 - Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t
 - Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 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
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- Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- Suspected of causing genetic defects. Very toxic to aquatic life. H341
- H400
- Very toxic to aquatic life with long lasting effects. Toxic to aquatic life with long lasting effects. H410
- H411
- Harmful to aquatic life with long lasting effects. H412
- H413 May cause long lasting harmful effects to aquatic life.
- EUH204 Contains isocyanates. May produce an allergic reaction.

Abbreviations and acronyms:

SADT: Self Accelerating Decomposition Temperature
ADR: Accord relatif au transport international 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 Harmonised 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 (division of the American Chemical Society)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative Skin Irrit. 2: Skin corrosion/irritation – Category 2 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation — Category 2
Skin Sens. 1: Skin sensitisation — Category 1
Skin Sens. 1A: Skin sensitisation — Category 1A
Skin Sens. 1B: Skin sensitisation — Category 1B
Muta. 2: Germ cell mutagenicity — Category 2
STOT SE 3: Specific target organ toxicity (single exposure) — Category 3
Aquatic Acute 1: Hazardous to the aquatic environment - long-term aquatic hazard — Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard — Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard — Category 2 Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard — Category 3 Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard — Category 4

* Data compared to the previous version altered.