



Safety Data Sheet

according to 29 CFR 1910.1200(g)

DruckWege Type D Dental +

Revision date: 18.12.2020

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1. Identification**Product identifier**

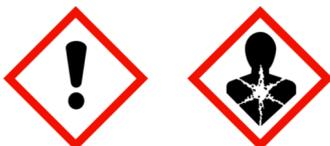
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Recommended use of the chemical and restrictions on use**Use of the substance/mixture**3D Printing
resin**Uses advised against**

Not for intraoral area.

Details of the supplier of the safety data sheet

| | |
|-----------------|------------------------------------|
| Company name: | Druckwege B.V. |
| Street: | Wasaweg 1A |
| Place: | 9723 JD Groningen, The Netherlands |
| Telephone: | +31 50 763 08 45 |
| e-mail: | support@druckwege.com |
| Contact person: | Jelmer Siekmans |
| Internet: | www.druckwege.com |

Emergency phone number: Emergency telephone: +31 50 763 08 45**2. Hazard(s) identification****Classification of the chemical****29 CFR Part 1910.1200**Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2A
Respiratory or skin sensitization: Skin Sens. 1A
Reproductive toxicity: Repr. 2**Label elements****29 CFR Part 1910.1200****Signal word:** Warning**Pictograms:****Hazard statements**Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
Suspected of damaging fertility or the unborn child**Precautionary statements**Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of soap and water.
Take off contaminated clothing and wash it before reuse.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.



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Continue rinsing.
If eye irritation persists: Get medical advice/attention.
If exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of waste according to applicable legislation.

Hazards not otherwise classified

No information available.

3. Composition/information on ingredients**Mixtures****Hazardous components**

| CAS No | Components | Quantity |
|-------------|--|----------|
| 72869-86-4 | 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate | 74.5 % |
| 13048-33-4 | hexamethylene diacrylate; hexane-1,6-diol diacrylate | 21.5 % |
| 75980-60-8 | diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide | 2.994 % |
| 159034-91-0 | Propylidynetrimethanol, ethoxylated, esters with acrylic acid, reaction products with diethylamine (1 - 6.5 moles ethoxylated) | 0.9975 % |

4. First-aid measures**Description of first aid measures****General information**

When in doubt or if symptoms are observed, get medical advice.

After inhalation

Provide fresh air. If experiencing respiratory symptoms: Get medical advice/attention.
If breathing is irregular or stopped, administer artificial respiration.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. In case of skin reactions, consult a physician.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Observe risk of aspiration if vomiting occurs. Do NOT induce vomiting. Rinse mouth immediately and drink 1 glass of water. Get medical advice/attention if you feel unwell.
Never give anything by mouth to an unconscious person or a person with cramps.

Most important symptoms and effects, both acute and delayed

Allergic reactions, Irritating to eyes and skin.
Suspected of damaging fertility or the unborn child.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

Specific hazards arising from the chemical

Non-flammable.
In case of fire may be liberated: Pyrolysis products, toxic.



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Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

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

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

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

Environmental precautions

Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. 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**

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

Advice on protection against fire and explosion

Usual measures for fire prevention.

Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed.

Hints on joint storage

No special measures are necessary.

Further information on storage conditions

Protect against: UV-radiation/sunlight

8. Exposure controls/personal protection**Control parameters****Exposure limits**

| CAS No. | Substance | ppm | mg/m ³ | f/cc | Category | Origin |
|---------|---|----------------------------|-------------------|------|-----------|------------|
| - | Particles (insoluble or poorly soluble) not otherwise specified (inhalable fraction) | | 10 | | TWA (8 h) | ACGIH-2020 |
| - | Particles (insoluble or poorly soluble) not otherwise specified (respirable fraction) | | 3 | | TWA (8 h) | ACGIH-2020 |
| - | Particulates not Otherwise regulated (PNOR) Respirable fraction | 529.5 mp/m ³ | 5 | | TWA (8 h) | PEL |
| - | Particulates not Otherwise regulated (PNOR) Total dust | 1765 mp/m ³ | 15 | | TWA (8 h) | PEL |

Exposure controls



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**Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. 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, drink, smoke, sniff.

Eye/face protection

Wear eye/face protection.

Hand protection

Wear suitable gloves.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Use of protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Do not allow to enter into surface water or drains.

9. Physical and chemical properties**Information on basic physical and chemical properties**

| | | |
|------------------|----------------|----------------|
| Physical state: | Liquid | |
| Color: | various | |
| Odor: | like: Acrylate | |
| Odour threshold: | not determined | |
| pH-Value: | | not determined |

Changes in the physical state

| | |
|--|----------------|
| Melting point/freezing point: | not determined |
| Initial boiling point and boiling range: | > 100 °C |
| Flash point: | not determined |

Flammability

| | |
|--------|----------------|
| Solid: | not applicable |
| Gas: | not applicable |

Explosive properties

The product is not: Explosive.

| | |
|-------------------------|----------------|
| Lower explosion limits: | not determined |
| Upper explosion limits: | not determined |
| Ignition temperature: | > 230 °C |

Auto-ignition temperature

| | |
|--------|----------------|
| Solid: | not applicable |
| Gas: | not applicable |



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Decomposition temperature: not determined

Oxidizing properties

Not oxidising.

Vapor pressure: < 1 hPa
(at 20 °C)

Density: not determined

Water solubility: poorly soluble

Solubility in other solvents

not determined

Partition coefficient: not determined

Viscosity / dynamic: not determined

Viscosity / kinematic: not determined

Vapor density: not determined

Evaporation rate: not determined

Other information

No information available.

10. Stability and reactivity**Reactivity**

No hazardous reaction when handled and stored according to provisions.

Chemical stability

Stability: Stable

The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions

Hazardous reactions: Will not occur

No known hazardous reactions.

Conditions to avoid

UV-radiation/sunlight

Incompatible materials

No information available.

Hazardous decomposition products

In case of fire may be liberated: Pyrolysis products, toxic.

11. Toxicological information**Information on toxicological effects****Route(s) of Entry**

oral, dermal, inhalative, Eye contact

Acute toxicity

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



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| CAS No | Components | | | | |
|------------|--|-------------------|---------|--------------|----------|
| | Exposure route | Dose | Species | Source | Method |
| 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 > 5000 mg/kg | Rat | Manufacturer | OECD 401 |
| | dermal | LD50 > 2000 mg/kg | Rat | Manufacturer | OECD 402 |
| 13048-33-4 | hexamethylene diacrylate; hexane-1,6-diol diacrylate | | | | |
| | oral | LD50 5000 mg/kg | Rat | Manufacturer | |
| | dermal | LD50 3650 mg/kg | Rabbit | Manufacturer | OECD 402 |
| 75980-60-8 | diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide | | | | |
| | oral | LD50 > 5000 mg/kg | Rat | Manufacturer | |
| | dermal | LD50 > 2000 mg/kg | Rat | Manufacturer | |

Irritation and corrosivity

- Causes skin irritation
- Causes serious eye irritation

Sensitizing effects

May cause an allergic skin reaction (7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate; hexamethylene diacrylate; hexane-1,6-diol diacrylate; diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide; Propylidynetrimethanol, ethoxylated, esters with acrylic acid, reaction products with diethylamine (1 - 6.5 moles ethoxylated))

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging fertility or the unborn child (diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)

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

Carcinogenicity: 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.

Aspiration hazard

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

12. Ecological information**Ecotoxicity**

Toxic to aquatic life with long lasting effects.



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| CAS No | Components | | | | | |
|------------|--|-------------------|-----------|--------------------------------|--------------|----------|
| | Aquatic toxicity | Dose | [h] [d] | Species | Source | Method |
| 72869-86-4 | 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate | | | | | |
| | Acute crustacea toxicity | EC50 > 1,2 mg/l | 48 h | Daphnia magna (Big water flea) | Manufacturer | OECD 202 |
| 13048-33-4 | hexamethylene diacrylate; hexane-1,6-diol diacrylate | | | | | |
| | Acute bacteria toxicity | (270 mg/l) | 0,5 h | Activated sludge | Manufacturer | OECD 209 |
| 75980-60-8 | diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide | | | | | |
| | Acute algae toxicity | ErC50 > 2,01 mg/l | 72 h | Scenedesmus subspicatus | Manufacturer | |
| | Acute crustacea toxicity | EC50 3,53 mg/l | 48 h | Daphnia magna (Big water flea) | Manufacturer | |
| | Acute bacteria toxicity | (> 1000 mg/l) | 3 h | Activated sludge | Manufacturer | |

Persistence and degradability

The product has not been tested.

Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

| CAS No | Components | Log Pow |
|------------|--|---------|
| 72869-86-4 | 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate | 3,39 |
| 13048-33-4 | hexamethylene diacrylate; hexane-1,6-diol diacrylate | 2,81 |
| 75980-60-8 | diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide | 3,1 |

BCF

| CAS No | Components | BCF | Species | Source |
|------------|---|---------|------------------------------------|--------------|
| 75980-60-8 | diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide | 47 - 55 | Cyprinus carpio (Common Carp) fish | Manufacturer |

Mobility in soil

The product has not been tested.

Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

13. Disposal considerations**Waste treatment methods****Disposal recommendations**

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

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

14. Transport information

US DOT 49 CFR 172.101

UN/ID number:

UN 3082



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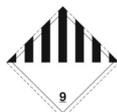
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Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(7,7,9(or
7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl
bismethacrylate; hexamethylene diacrylate; hexane-1,6-diol diacrylate)

Transport hazard class(es): 9

Packing group: III

Hazard label: 9

**Marine transport (IMDG)**

UN number: UN 3082

UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(7,7,9(or
7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl
bismethacrylate; hexamethylene diacrylate; hexane-1,6-diol diacrylate)

Transport hazard class(es): 9

Packing group: 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)

UN number: UN 3082

UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(7,7,9(or
7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl
bismethacrylate; hexamethylene diacrylate; hexane-1,6-diol diacrylate)

Transport hazard class(es): 9

Packing group: 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

Environmental hazards



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ENVIRONMENTALLY HAZARDOUS: Yes



Danger releasing substance: 7,7,9(or
7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl
bismethacrylate; hexamethylene diacrylate; hexane-1,6-diol diacrylate

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 Inventory TSCA**

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate: Yes.
hexamethylene diacrylate; hexane-1,6-diol diacrylate: Yes.
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide: Yes.
Propylidynetrimethanol, ethoxylated, esters with acrylic acid, reaction products with diethylamine (1 - 6.5 moles ethoxylated): No.

National regulatory information

SARA Section 311/312 Hazards:

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate (72869-86-4): Immediate (acute) health hazard
hexamethylene diacrylate; hexane-1,6-diol diacrylate (13048-33-4): Immediate (acute) health hazard
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8): Immediate (acute) health hazard
Propylidynetrimethanol, ethoxylated, esters with acrylic acid, reaction products with diethylamine (1 - 6.5 moles ethoxylated) (159034-91-0): 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**Hazardous Materials Information Label (HMIS)**

Health: *2
Flammability: 1
Physical Hazard: 0

NFPA Hazard Ratings

Health: 2
Flammability: 1
Reactivity: 0
Unique Hazard:
Revision date: 18.12.2020
Revision No: 1,0

**Abbreviations and acronyms**

ACGIH: American Conference of Governmental Industrial Hygienists
CFR: Code of Federal Regulations
DOT: Department of Transportation
ICAO: International Civil Aviation Organization

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IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IARC: International Agency for Research on Cancer
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service
NFPA: National Fire Protection Association
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: permissible exposure limit
REL: recommended exposure limit
SARA: Superfund Amendments and Reauthorization Act
STEL: Short-term exposure limit
TSCA: Toxic Substances Control Act
TWA: time-weighted average
TI: Technical Instructions
DGR: Dangerous Goods Regulations
UN: United Nations
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
VOC: Volatile Organic Compounds

Other data

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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