



# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## DruckWege Type D Standard Rev. 3

Revision date: 03.07.2019

Page 1 of 9

### 1. Identification

#### Product identifier

DruckWege Type D Standard Rev. 3

#### Product code:

TDS

#### 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 GmbH	
Street:	Schulstr. 38	
Place:	D-53773 Hennef	
Telephone:	+49 2242 9185 137	
e-mail:	mail@druckwege.de	
Contact person:	Florian Reil / Anton Gillert	Telephone: +49 2242 9185 137

**Emergency phone number:** Emergency telephone: +49 (0)89 41407483 (24 h, Munich, Germany)

### 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 Dam. 1  
Respiratory or skin sensitization: Skin Sens. 1  
Reproductive toxicity: Repr. 2

#### Label elements

##### 29 CFR Part 1910.1200

**Signal word:** Danger**Pictograms:**

#### **Hazard statements**

Causes skin irritation  
May cause an allergic skin reaction  
Causes serious eye damage  
Suspected of damaging fertility or the unborn child

#### **Precautionary statements**

If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
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.



# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## DruckWege Type D Standard Rev. 3

Revision date: 03.07.2019

Page 2 of 9

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.  
Continue rinsing.  
Immediately call a poison center/doctor.  
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
13048-33-4	hexamethylene diacrylate; hexane-1,6-diol diacrylate	59.6 %
2123508-19-8	Hexane, 1,6-diisocyanato-, polymers with 2-hydroxyethyl acrylate-blocked 1,6-diisocyanatohexane homopolymer, 2-hydroxyethyl acrylate- and pentaerythritol triacylate-blocked	28.81 %
4986-89-4	pentaerythritol tetraacrylate	9.595 %
75980-60-8	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	1.996 %

## 4. First-aid measures

### Description of first aid measures

#### **General information**

First aider: Pay attention to self-protection!

#### **After inhalation**

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

#### **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**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing.

#### **After ingestion**

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

### Most important symptoms and effects, both acute and delayed

Persons already sensitised to diisocyanates may develop allergic reactions when using this product.

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## 5. Fire-fighting measures

### Extinguishing media



## Safety Data Sheet

according to 29 CFR 1910.1200(g)

### DruckWege Type D Standard Rev. 3

Revision date: 03.07.2019

Page 3 of 9

#### **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: Gases/vapors, toxic

#### **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.

#### **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.

##### **Further information on handling**

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

#### **Conditions for safe storage, including any incompatibilities**

##### **Requirements for storage rooms and vessels**

Keep container tightly closed. Store in a dry place. Provide adequate ventilation as well as local exhaustion at critical locations. Keep locked up. Store in a place accessible by authorized persons only.

##### **Hints on joint storage**

No information available.

##### **Further information on storage conditions**

Protect against: UV-radiation/sunlight, Humidity.

### 8. Exposure controls/personal protection

#### **Control parameters**

##### **Additional advice on limit values**

To date, no national critical limit values exist.



# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## DruckWege Type D Standard Rev. 3

Revision date: 03.07.2019

Page 4 of 9

### Exposure controls



#### **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. Do not breathe gas/fume/vapour/spray. Avoid contact with skin, eyes and clothes.

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

#### **Eye/face protection**

Wear eye/face protection.

#### **Hand protection**

Wear protective 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
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:	> 110 °C

#### **Flammability**

Solid:	not applicable
Gas:	not applicable

#### **Explosive properties**

The product is not: Explosive.

Lower explosion limits:	not determined
Upper explosion limits:	not determined

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**DruckWege Type D Standard Rev. 3**

Revision date: 03.07.2019

Page 5 of 9

Ignition temperature:	> 230 °C
<b>Auto-ignition temperature</b>	
Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not determined
<b>Oxidizing properties</b>	
Not oxidising.	
Vapor pressure: (at 20 °C)	< 1 hPa
Density:	not determined
Water solubility:	poorly soluble
<b>Solubility in other solvents</b>	
not determined	
Partition coefficient:	not determined
Viscosity / dynamic:	not determined
Viscosity / kinematic:	not determined
Vapor density:	not determined
Evaporation rate:	not determined

**Other information**

Odor threshold: not determined

**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**

Protect against: UV-radiation/sunlight, Humidity.

**Incompatible materials**

No information available.

**Hazardous decomposition products**

In case of fire may be liberated: Gases/vapors, toxic

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

Eye contact, dermal, inhalative, oral.

**Acute toxicity**

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

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**DruckWege Type D Standard Rev. 3**

Revision date: 03.07.2019

Page 6 of 9

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
13048-33-4	hexamethylene diacrylate; hexane-1,6-diol diacrylate				
	oral	LD50 mg/kg 5000	Rat	Manufacturer	
	dermal	LD50 mg/kg 3650	Rabbit	Manufacturer	OECD 402
4986-89-4	pentaerythritol tetraacrylate				
	oral	ATE mg/kg 500			
75980-60-8	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide				
	oral	LD50 mg/kg > 5000	Rat	Manufacturer	
	dermal	LD50 mg/kg > 2000	Rat	Manufacturer	

**Irritation and corrosivity**

- Causes skin irritation
- Causes serious eye damage

**Sensitizing effects**

May cause an allergic skin reaction (hexamethylene diacrylate; hexane-1,6-diol diacrylate; Hexane, 1,6-diisocyanato-, polymers with 2-hydroxyethyl acrylate-blocked 1,6-diisocyanatohexane homopolymer, 2-hydroxyethyl acrylate- and pentaerythritol triacrylate-blocked; pentaerythritol tetraacrylate; diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)

**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.

- 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**

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

**12. Ecological information****Ecotoxicity**

Toxic to aquatic life with long lasting effects.

**Persistence and degradability**

The product has not been tested.

**Bioaccumulative potential**

The product has not been tested.

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**DruckWege Type D Standard Rev. 3**

Revision date: 03.07.2019

Page 7 of 9

**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****Advice on disposal**

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

**Proper shipping name:**ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(hexamethylene diacrylate; hexane-1,6-diol diacrylate; pentaerythritol tetraacrylate)**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.  
(hexamethylene diacrylate; hexane-1,6-diol diacrylate; pentaerythritol tetraacrylate)**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.  
(hexamethylene diacrylate; hexane-1,6-diol diacrylate; pentaerythritol tetraacrylate)**Transport hazard class(es):**

9

**Packing group:**

III

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**DruckWege Type D Standard Rev. 3**

Revision date: 03.07.2019

Page 8 of 9

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**

ENVIRONMENTALLY HAZARDOUS:

yes



Danger releasing substance:

hexamethylene diacrylate; hexane-1,6-diol diacrylate; pentaerythritol tetraacrylate

**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**

hexamethylene diacrylate; hexane-1,6-diol diacrylate: Yes.

Hexane, 1,6-diisocyanato-, polymers with 2-hydroxyethyl acrylate-blocked 1,6-diisocyanatohexane homopolymer, 2-hydroxyethyl acrylate- and pentaerythritol triacrylate-blocked: No.

pentaerythritol tetraacrylate: Yes.

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide: Yes.

**National regulatory information**

SARA Section 311/312 Hazards:

hexamethylene diacrylate; hexane-1,6-diol diacrylate (13048-33-4): Immediate (acute) health hazard

Hexane, 1,6-diisocyanato-, polymers with 2-hydroxyethyl acrylate-blocked 1,6-diisocyanatohexane homopolymer, 2-hydroxyethyl acrylate- and pentaerythritol triacrylate-blocked (2123508-19-8): Immediate (acute) health hazard

pentaerythritol tetraacrylate (4986-89-4): Immediate (acute) health hazard

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8): 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: \*3

Flammability: 1

Physical Hazard: 0



**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**DruckWege Type D Standard Rev. 3**

Revision date: 03.07.2019

Page 9 of 9

**NFPA Hazard Ratings**

Health:	3
Flammability:	1
Reactivity:	0
Unique Hazard:	
Revision date:	03.07.2019
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  
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 present level of our knowledge. It does not, however, give assurances 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.)*