



Safety Data Sheet

according to 29 CFR 1910.1200(g)

DruckWege Type D Flex Rev. 2

Revision date: 17.01.2020

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1. Identification

Product identifier

DruckWege Type D Flex Rev. 2

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

Acute toxicity: Acute Tox. 4 (inhalation)
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
Specific target organ toxicity single exposure: STOT SE 3 (respiratory tract irritation)

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
Harmful if inhaled
May cause respiratory 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.



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Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Use only outdoors or in a well-ventilated area.
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 inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a poison center/doctor if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists: Get medical advice/attention.
If exposed or concerned: Get medical advice/attention.
Store in a well-ventilated place. Keep container tightly closed.
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
63225-53-6	2-[[[butylamino)carbonyl]oxy]ethyl acrylate	45.35 %
84100-23-2	4-(1,1-dimethylethyl)cyclohexyl acrylate	10.5 %
28961-43-5	Propylidynetrimethanol, ethoxylated, esters with acrylic acid	7.5 %
75980-60-8	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	4.99 %
7575-23-7	Pentaerythritol tetrakis(3-mercaptopropionate)	2.5 %
159034-91-0	Propylidynetrimethanol, ethoxylated, esters with acrylic acid, reaction products with diethylamine (1 - 6.5 moles ethoxylated)	0.9975 %
818-61-1	2-hydroxyethyl acrylate	0.147 %

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 breathing is irregular or stopped, administer artificial respiration. Get medical advice/attention.

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. Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Medical treatment necessary.



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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

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. Remove persons to safety. 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.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

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

Hints on joint storage

No information available.

8. Exposure controls/personal protection

Control parameters

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Exposure limits

CAS No.	Substance	ppm	mg/m ³	f/cc	Category	Origin
128-37-0	2,6-Di-tert-butyl-p-cresol	-	10		TWA (8 h)	REL
128-37-0	Butylated hydroxytoluene (inhalable fraction and vapor)		2		TWA (8 h)	ACGIH-2019
110-82-7	Cyclohexane	300	1050		TWA (8 h)	REL
		300	1050		TWA (8 h)	REL
		100			TWA (8 h)	ACGIH-2019
-	Particles (insoluble or poorly soluble) not otherwise specified (inhalable fraction)		10		TWA (8 h)	ACGIH-2019
-	Particles (insoluble or poorly soluble) not otherwise specified (respirable fraction)		3		TWA (8 h)	ACGIH-2019
-	Particulates not Otherwise regulated (PNOR) Respirable fraction	529.5 mp/m ³	5		TWA (8 h)	REL
-	Particulates not Otherwise regulated (PNOR) Total dust	1765 mp/m ³	15		TWA (8 h)	REL

Exposure controls**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used.

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.

Eye/face protection

Wear eye protection/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

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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: > 103 °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

Ignition temperature: > 341 °C

Auto-ignition temperature

Solid: not applicable

Gas: not applicable

Decomposition temperature: not determined

Oxidizing properties

Not oxidising.

Vapor pressure:
(at 20 °C) < 1 hPa

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

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

No information available.

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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, Skin contact, oral, inhalative.

Acute toxicity

Harmful if inhaled

ATEmix calculated

ATE (inhalation aerosol) 3,307 mg/l

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
63225-53-6	2-[[[(butylamino)carbonyl]oxy]ethyl acrylate				
	inhalation vapour	ATE 11 mg/l			
	inhalation aerosol	ATE 1,5 mg/l			
28961-43-5	Propylidynetrimethanol, ethoxylated, esters with acrylic acid				
	oral	LD50 > 2000 mg/kg	Rat	Manufacturer	
	dermal	LD50 > 2000 mg/kg	Rabbit	Manufacturer	
75980-60-8	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide				
	oral	LD50 > 5000 mg/kg	Rat	Manufacturer	
	dermal	LD50 > 2000 mg/kg	Rat	Manufacturer	
7575-23-7	Pentaerythritol tetrakis(3-mercaptopropionate)				
	oral	LD50 1000 mg/kg	Rat	Manufacturer	OECD 423
818-61-1	2-hydroxyethyl acrylate				
	oral	ATE 500 mg/kg			
	dermal	ATE 300 mg/kg			

Irritation and corrosivity

Causes skin irritation

Causes serious eye irritation

Sensitizing effects

May cause an allergic skin reaction (2-[[[(butylamino)carbonyl]oxy]ethyl acrylate; 4-(1,1-dimethylethyl)cyclohexyl acrylate; Propylidynetrimethanol, ethoxylated, esters with acrylic acid; diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide; Pentaerythritol tetrakis(3-mercaptopropionate); Propylidynetrimethanol, ethoxylated, esters with acrylic acid, reaction products with diethylamine (1 - 6.5 moles ethoxylated); 2-hydroxyethyl acrylate)

Carcinogenic/mutagenic/toxic effects for reproduction

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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

May cause respiratory irritation (4-(1,1-dimethylethyl)cyclohexyl acrylate)

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): Butylated hydroxytoluene (BHT) (CAS 128-37-0) is listed in group 3.

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

Aspiration hazard

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

12. Ecological information**Ecotoxicity**

Toxic to aquatic life with long lasting effects.

CAS No	Components					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
63225-53-6	2-[[[(butylamino)carbonyl]oxy]ethyl acrylate					
	Acute fish toxicity	LC50 2,52 mg/l	96 h	Piscis	Manufacturer	OECD 203
	Acute algae toxicity	ErC50 5,98 mg/l	72 h	Algae	Manufacturer	OECD 201
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	
7575-23-7	Pentaerythritol tetrakis(3-mercaptopropionate)					
	Acute fish toxicity	LC50 0,42 mg/l	96 h	Piscis	Manufacturer	OECD 203
	Acute crustacea toxicity	EC50 0,71 mg/l	48 h	Daphnia spec	Manufacturer	OECD 202

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
63225-53-6	2-[[[(butylamino)carbonyl]oxy]ethyl acrylate	1,82
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.



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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

Handle contaminated packages in the same way as the substance itself. Dispose of waste according to applicable legislation.

14. Transport information

US DOT 49 CFR 172.101

UN/ID number:

UN 3082

Proper shipping name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-
[[[(butylamino)carbonyl[oxy]ethyl acrylate)**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. (2-
[[[(butylamino)carbonyl[oxy]ethyl acrylate)**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. (2-
[[[(butylamino)carbonyl[oxy]ethyl acrylate)**Transport hazard class(es):**

9

Packing group:

III

Hazard label:

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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: 2-[[[(butylamino)carbonyl]oxy]ethyl acrylate

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**

- CAS No. 63225-53-6: Yes.
- CAS No. 110-82-7: Yes.
- CAS No. 84100-23-2: No.
- CAS No. 28961-43-5: Yes.
- CAS No. 75980-60-8: Yes.
- CAS No. 7575-23-7: Yes.
- CAS No. 159034-91-0: No.
- CAS No. 818-61-1: Yes.
- CAS No. 128-37-0: Yes.

National regulatory information

SARA Section 304 CERCLA:

Cyclohexane (110-82-7): Reportable quantity = 1,000 (454) lbs. (kg)

SARA Section 311/312 Hazards:

- 2-[[[(butylamino)carbonyl]oxy]ethyl acrylate (63225-53-6): Immediate (acute) health hazard
- 4-(1,1-dimethylethyl)cyclohexyl acrylate (84100-23-2): Immediate (acute) health hazard
- Propylidyntrimethanol, ethoxylated, esters with acrylic acid (28961-43-5): Immediate (acute) health hazard
- diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8): Immediate (acute) health hazard
- Pentaerythritol tetrakis(3-mercaptopropionate) (7575-23-7): Immediate (acute) health hazard
- Propylidyntrimethanol, ethoxylated, esters with acrylic acid, reaction products with diethylamine (1 - 6.5 moles ethoxylated) (159034-91-0): Immediate (acute) health hazard
- 2-hydroxyethyl acrylate (818-61-1): Immediate (acute) health hazard
- Cyclohexane (110-82-7): Fire hazard, Immediate (acute) health hazard

SARA Section 313 Toxic release inventory:

Cyclohexane (110-82-7): De minimis limit = 1.0 %, Reportable threshold = Standard

State Regulations



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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: 0
Physical Hazard: 1

NFPA Hazard Ratings

Health: 3
Flammability: 0
Reactivity: 1
Unique Hazard:

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Abbreviations and acronyms

ACGIH: American Conference of Governmental Industrial Hygienists
ATE: Acute toxicity estimate
BCF: Bio-concentration factor
CAS: Chemical Abstracts Service
EC50: Effective Concentration 50%
EL50: Effect loading, 50%
ErC50: Effective Concentration 50%, growth rate
GHS: Globally Harmonized System of Classification, Labelling and Packaging of Chemicals
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
IMDG: International Maritime Code for Dangerous Goods
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
NFPA: National Fire Protection Association
NOEC: No Observed Effect Concentration
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PBT: persistent, bioaccumulative, toxic
PEL: Permissible Exposure Limits
SARA: Superfund Amendments Reauthorization Act
TSCA: Toxic Substances Control Act
TWA: Total Weight Average
UN: United Nations
US DOT: United States Department of Transportation

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.



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