Manufacturer:
Covestro

Product Name:
Covestro Bufferlite DU-2008 Tight Buffer Optical Fiber Coating (Matrix Coating), UV Cure (10 kg)

Manufacturer Part Number:
COV-DU-2008-10KG

Safety Data Sheet according to Regulation (EU) No. 1907/2006 as amended

Bufferlite DU-2008

Version 1.0 Revision Date 28.04.2023 Print Date 29.04.2023

This document is formatted for A4 paper size

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

1.1 Product identifier

BUFFERLITE DU-2008

Material number: 50025003

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use:
UV-curable coatings, inks and matrix materials.

1.3 Details of the supplier of the safety data sheet

Covestro Deutschland AG
COVDEAG-CEO-GI-GQ-GPS&RA-GPS&I
51365 Leverkusen

Tel.: +49 214 6009 8134
Email: ProductSafetyEMLA@covestro.com

1.4 Emergency telephone number

+1-703-527-3887 (Chemtrec)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Skin irritation, Category 2 (H315)
Eye irritation, Category 2 (H319)
Sensitization of the skin, Category 1 (H317)
Specific target organ toxicity (single exposure), Category 3 (H335 (Respiratory system))
Chronically hazardous to the aquatic environment, Category 2 (H411)

2.2 Label elements

Warning

Hazardous components which must be listed on the label
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate

Hazard statements:
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:
P261 Avoid breathing mist or vapours.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P391 Collect spillage.

2.3 Other hazards

The following percentage of the mixture consists of ingredient(s) with unknown acute oral toxicity: 15 %
The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 15 %
The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 20 %

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 15 %

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

Type of product: Mixture

3.2 Mixtures

Hazardous components

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Concentration [wt.-%]: >= 25 - < 50
Index-No.: 607-249-00-X
EC-No.: 256-032-2
CAS-No.: 42978-66-5
Classification (1272/2008/CE): Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315 Skin Sens. 1 H317 Aquatic Chronic 2 H411
Specific threshold concentration (GHS):
STOT SE 3 H335 >= 10 %

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Concentration [wt.-%]: >= 25 - < 50
EC-No.: 500-130-2
CAS-No.: 55818-57-0
Classification (1272/2008/CE): Skin Sens. 1 H317 Aquatic Chronic 2 H411

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Concentration [wt.-%]: >= 3 - < 5
EC-No.: 231-272-0
CAS-No.: 7473-98-5
Classification (1272/2008/CE): Acute Tox. 4 Oral H302 Aquatic Chronic 3 H412
ATE (oral): 1.694 mg/kg

octamethylcyclotetrasiloxane
Concentration [wt.-%]: >= 0,0025 - < 0,025
Index-No.: 014-018-00-1
EC-No.: 209-136-7
REACH Registration Number: 01-2119529238-36-0031, 01-2119529238-36-0048
CAS-No.: 556-67-2
Classification (1272/2008/CE): Flam. Liq. 3 H226 Repr. 2 H361f Aquatic Chronic 1 H410
M-factor (chron. aquat. tox.): 10

Candidate List of Substances of Very High Concern for Authorisation
This product contains no substances of very high concern in concentrations where an information obligation applies (REACH Regulation (EC) No. 1907/2006, Article 59).

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: Take off all contaminated clothing immediately.

For effective first-aid, special training / education is needed.

If inhaled: Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required. If unconscious, place in recovery position and seek medical advice. Oxygen or artificial respiration if needed. If breathing is irregular or stopped, administer artificial respiration. Keep respiratory tract clear. Consult a physician if necessary.

Inhalation may provoke the following symptoms: respiratory tract irritation coughing

In the case of hazardous fumes, wear self contained breathing apparatus.

In case of skin contact: In case of skin contact wash affected areas thoroughly with soap and plenty of water. Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Thoroughly clean shoes before reuse. Consult a doctor in the event of a skin reaction.

Most important symptoms Skin irritation Redness

In case of eye contact: Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist. Remove contact lenses.

Eye contact may provoke the following symptoms irritant effects eye redness

If swallowed: Do not induce vomiting without medical advice. Rinse mouth. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person.

If victim is conscious: Give small amounts of water to drink.

If symptoms persist, call a physician or Poison Control Centre immediately.

4.2 Most important symptoms and effects, both acute and delayed

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

4.3 Indication of any immediate medical attention and special treatment needed

Therapeutic measures: No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Formation of carbon monoxide, carbon dioxide and other toxic gases in the event of fire or during thermal decomposition. Fire will produce dense black smoke containing hazardous combustion products (see section 10). In case of fire, may produce hazardous decomposition products such as: Acrylate monomers Aldehydes Organic acids

In the event of fire and/or explosion do not breathe fumes. Cool endangered vessels and containers with sprayed water. Heating raises pressure with consequent risk of bursting and explosion.

5.3 Advice for fire-fighters

Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear. Wear a positive-pressure supplied-air respirator with full facepiece. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters. Immediately evacuate personnel to safe areas.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Immediately evacuate personnel to safe areas. Avoid breathing mist or vapours. Put on protective equipment (see section 8). Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away. In case of insufficient ventilation, wear suitable respiratory equipment.

6.2 Environment related measures

Do not allow to escape into waterways, wastewater or soil. If the product contaminates rivers and lakes or drains inform respective authorities. Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains. Collect spillage. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Dispose of wastes in an approved waste disposal facility. Do not discharge large quantities of concentrated spills or residues into surface water or sanitary sewer system.

6.4 Reference to other sections

For personal protection see section 8. For further disposal measures see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

For personal protection see section 8. Avoid contact with skin, eyes and clothing. Do not breathe mist or vapours. Do not ingest. Ensure adequate ventilation and, if necessary, exhaust ventilation when handling or transferring the product. In case of insufficient ventilation, wear suitable respiratory equipment. The precautions required in the handling of acrylic acid esters must be taken. Do not re-use empty containers.

Smoking, eating and drinking should be prohibited in the application area. Wash skin thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas.

Persons who suffer from skin complaints or other hypersensitivity reactions of skin should not work with the product.

The personal protective measures described in section 8 must be observed. Avoid contact with skin and eyes absolutely.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Keep working clothes separately. Change contaminated or soaked clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Keep container dry and tightly closed in a cool and well ventilated place. Store in original container. Protect against heat and direct sunlight. Store locked up. When not in use, keep containers tightly closed. Keep in properly labelled containers. Use appropriate container to avoid environmental contamination. Polymerisation is a highly exothermic reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers. Inhibitor only effective in the presence of oxygen.

Storage class (TRGS 510) : 10: Combustible liquids
Recommended storage temperature: 15 - 30 °C

7.3 Specific end use(s)

UV-curable coatings, inks and matrix materials.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL)

octamethylcyclotetrasiloxane

Value type	Route of exposure	Health Effects	Value	Remarks
Workers	Inhalation	Long-term systemic effects	73 mg/m3	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Workers	Inhalation	Acute systemic effects	73 mg/m3	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Workers	Inhalation	Long-term local effects	73 mg/m3	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Workers	Inhalation	Acute local effects	73 mg/m3	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Workers	Dermal	Long-term systemic effects		No hazard identified
Workers	Dermal	Acute systemic effects		No hazard identified
Workers	Dermal	Long-term local effects		No hazard identified
Workers	Dermal	Acute local effects		No hazard identified
Workers	Eye contact	Local effects		No hazard identified
Consumers	Inhalation	Long-term systemic effects	13 mg/m3	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Consumers	Inhalation	Acute systemic effects	13 mg/m3	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Consumers	Inhalation	Long-term local effects	13 mg/m3	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Consumers	Inhalation	Acute local effects	13 mg/m3	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Consumers	Dermal	Long-term systemic effects		No hazard identified

Consumers	Dermal	Acute systemic effects		No hazard identified
Consumers	Dermal	Long-term local effects		No hazard identified
Consumers	Dermal	Acute local effects		No hazard identified
Consumers	Oral	Long-term systemic effects	3,7 mg/kg bw/day	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Consumers	Oral	Acute systemic effects	3,7 mg/kg bw/day	Most sensitive endpoint: Repeated dose toxicity (By inhalation)
Consumers	Eye contact	Local effects		No hazard identified

Predicted No Effect Concentration (PNEC)

octamethylcyclotetrasiloxane

Compartment	Value	Remarks
Fresh water	>= 1,5 µg/l	
Fresh water sediment	3,0 mg/kg dry weight (d.w.)	
Marine water	>= 0,15 µg/l	
Marine sediment	0,3 mg/kg dry weight (d.w.)	
Sewage treatment plant	> 10 mg/l	
Air		No hazard identified
Soil	0,54 mg/kg dry weight (d.w.)	
Oral	41 mg/kg	
Intermittent use/release		not applicable

8.2 Exposure controls

Appropriate engineering controls
If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Respiratory protection
Respirator with a gas filter

Hand protection
Protective gloves complying with EN 374.
Nitrile rubber: thickness >=0,12mm; Break through time: < 60 min
Contaminated and/or damaged gloves must be changed. Avoid natural rubber gloves. Do not wear PVC gloves, as PVC absorbs acrylates.

Eye protection
Safety glasses with side-shields
Equipment should conform to EN 166

Skin and body protection
Use protective clothing (chemically resistant). Protective suit
Equipment should conform to EN 1149

Further protective measures
Wash face, hands and any exposed skin thoroughly after handling. Use appropriate degowning techniques to remove potentially contaminated clothing. Take off contaminated clothing and wash it before reuse. Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	liquid at 20 °C at 1.013 hPa
Appearance:	liquid
Colour:	yellowish
Odour:	characteristic
Odour Threshold:	not established
pH:	not established
Melting point/freezing point:	not established
Boiling point/boiling range:	not established
Flash point:	> 100 °C, closed cup
Evaporation rate:	not established
Flammability (solid, gas):	not applicable
Burning number:	not applicable
Upper/lower flammability or explosive limits:	not established
Vapour pressure:	not established
Relative vapour density:	not established
Density:	1,12 g/cm³ at 20 °C
Miscibility with water:	not established
Water solubility:	not established
Surface tension:	not established
Partition coefficient (n−octanol/water):	not established
Auto-ignition temperature:	not applicable
Ignition temperature:	not established
Decomposition temperature:	not established
Heat of combustion:	not established
Viscosity, dynamic:	1.200 mPa.s at 20 °C
Viscosity, kinematic:	not established

9.2 Other information

The indicated values do not necessarily correspond to the product specification. Please refer to the technical information sheet for specification data.

Explosive properties:	not established
Dust explosion class:	not applicable
Oxidising properties:	not established

SECTION 10: Stability and reactivity

10.1 Reactivity

None known.

10.2 Chemical stability

Stable under recommended storage conditions. The product is chemically stable.

10.3 Possibility of hazardous reactions

In case of heating risk of exothermic polymerisation. Strong exothermic reactions with peroxides may occur in presence of heavy metal ions.

10.4 Conditions to avoid

Keep away from heat and sources of ignition.
Exposure to sunlight.

10.5 Incompatible materials

Exothermic reaction with: Strong acids and strong bases polymerisation initiators Avoid radical-forming starting agents, peroxides and reactive metals.

10.6 Hazardous decomposition products

No hazardous decomposition products when stored and handled correctly.

SECTION 11: Toxicological information

octamethylcyclotetrasiloxane
Toxicological studies on the product are not yet available.

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity, oral
ATEmix (oral): > 2.000 mg/kg
Method: Calculation method

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
LD50 rat, female: > 2.000 mg/kg
Method: OECD Test Guideline 423

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
LD50 rat, male/female: > 2.000 mg/kg
Method: OECD Test Guideline 401

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
LD50 rat, male/female: 1.694 mg/kg
Method: OECD Test Guideline 401

octamethylcyclotetrasiloxane
LD50 rat, male: > 4.800 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Method: OECD Test Guideline 401

Acute toxicity, dermal
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
LD50 rabbit, male/female: > 2.000 mg/kg
Method: OECD Test Guideline 402

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
LD50 rat, male/female: > 2.000 mg/kg
Method: OECD Test Guideline 402

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
LD50 rat, male/female: 6.929 mg/kg
Method: OECD Test Guideline 402

octamethylcyclotetrasiloxane
LD50 rat, male/female: > 2.375 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Method: OECD Test Guideline 402

Acute toxicity, inhalation
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Inhalation risk test (IRT): No mortality after 8 h exposure in studies with rats.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Assessment: no data available

octamethylcyclotetrasiloxane
LC50 rat, male/female: 36 mg/l, 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Method: OECD Test Guideline 403

Primary skin irritation
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Species: rabbit
Result: irritating
Classification: Causes skin irritation.

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

octamethylcyclotetrasiloxane
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

Primary mucosae irritation
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Species: rabbit
Result: irritating
Classification: Causes serious eye irritation.

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Species: rabbit
Result: non-irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

octamethylcyclotetrasiloxane
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

Sensitisation
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 429

Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Method: OECD Test Guideline 429

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 429

Respiratory sensitization

No data available.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Skin sensitisation:
Species: Guinea pig
Result: negative
Classification: Does not cause skin sensitization.
Method: OECD Test Guideline 406

Sensitization of the respiratory airways

no data available

octamethylcyclotetrasiloxane
Skin sensitisation according to Magnusson/Kligmann (maximizing test):
Species: Guinea pig
Result: negative
Classification: Does not cause skin sensitization.
Method: OECD Test Guideline 406

Respiratory sensitization

No data available.

Subacute, subchronic and prolonged toxicity
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
LOAEL (Lowest observable adverse effect level): 100 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 100 - 300 - 1000 mg/kg bw/day
Method: OECD Test Guideline 408

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
NOAEL: 50 mg/kg
Application Route: Oral
Species: rat, male/female
Exposure duration: 90 d
Frequency of treatment: daily
Method: OECD Test Guideline 408

octamethylcyclotetrasiloxane
NOAEL: 150 ppm
Application Route: inhalation (vapour)
Species: rat, male/female
Dose Levels: 0 - 10 -30 - 150 - 700 ppm
Exposure duration: 2 Years
Frequency of treatment: 6 hours a day, 5 days a week
Method: OECD Test Guideline 453

NOAEL: 960 mg/kg
Application Route: Dermal
Species: rabbit, male/female
Dose Levels: 0 - 96 - 190 - 960 mg/kg bw/day
Exposure duration: 3 Weeks
Frequency of treatment: 5 days/week
Method: OECD Test Guideline 410

Carcinogenicity
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
No data available.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
No data available.

octamethylcyclotetrasiloxane
NOAEL (Toxicity): 150 ppm

Species: rat, male/female
Application Route: Inhalative
Dose Levels: 0 - 10 - 30 - 150 - 700 ppm
Exposure duration: 24 month(s)
Frequency of treatment: 6 hours/day, 5 days/week
Method: OECD Test Guideline 453
Result: positive
Based on available data, the classification criteria are not met.

Reproductive toxicity/Fertility
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
NOAEL (parents, generelly toxicity): > 900 mg/kg
NOAEL (parents, fertility): > 900 mg/kg
Test type: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test
Species: rat, male/female
Application Route: Oral
Method: OECD Test Guideline 422

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
No data available.

octamethylcyclotetrasiloxane
NOAEL (parents, generelly toxicity): 300 ppm
NOAEL (parents, fertility): 300 ppm
NOAEL (offspring): 300 ppm
Test type: Two-generation study
Species: rat, male/female
Application Route: Inhalative
Dose Levels: 0 - 70 - 300 - 500 - 700 ppm
Frequency of treatment: 6 hours/day 7 days/week
Method: OECD Test Guideline 416
Suspected of damaging fertility (Repr. 2).

Reproductive toxicity/Developmental Toxicity/Teratogenicity
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
NOAEL (teratogenicity): 1.000 mg/kg
NOAEL (maternal): > 1.000 mg/kg
Species: rat, female
Application Route: Oral
Dose Levels: 100 - 300 -1000 mg/kg body weight/day
Method: OECD Test Guideline 414

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
NOAEL (maternal): 500 mg/kg
NOAEL (developmental toxicity): 500 mg/kg body weight/day
Species: rat, male and female
Application Route: Oral
Frequency of treatment: Daily from day 6 to day 20 of the gestation
Method: OECD Test Guideline 414

octamethylcyclotetrasiloxane
NOAEL (teratogenicity): 700 ppm
NOAEL (maternal): 300 ppm
Species: rabbit, female
Application Route: Inhalative
Dose Levels: 0 - 100 - 300 - 700 ppm
Frequency of treatment: 6 hours/day
Method: OECD Test Guideline 414

Genotoxicity in vitro
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Test type: Ames test
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Chromosome aberration test in vitro
Test system: Chinese hamster V79 cell line
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473

Test type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary (CHO) cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

octamethylcyclotetrasiloxane
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary (CHO) cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473

Test type: In vitro mammalian cell gene mutation test
Test system: Mouse lymphoma cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

Genotoxicity in vivo
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Test type: In vivo micronucleus test
Species: Mouse, male
Application Route: Oral
Result: negative
Method: OECD Test Guideline 474

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
no data available

octamethylcyclotetrasiloxane
Test type: Cytogenetic assay
Species: rat, male/female
Application Route: Inhalative
Result: negative
Method: OECD Test Guideline 475

Test type: Dominant Lethal Assay
Species: rat, male/female
Application Route: Oral
Result: negative
Method: OECD Test Guideline 478

STOT evaluation – one-time exposure
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
May cause respiratory irritation.

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Based on available data, the classification criteria are not met.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Based on available data, the classification criteria are not met.

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

STOT evaluation – repeated exposure
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Based on available data, the classification criteria are not met.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Based on available data, the classification criteria are not met.

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

Aspiration toxicity

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Based on available data, the classification criteria are not met.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Based on available data, the classification criteria are not met.

octamethylcyclotetrasiloxane
No data available.

CMR Assessment
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: No data available.

octamethylcyclotetrasiloxane
Carcinogenicity: Based on available data, the classification criteria are not met.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Suspected of damaging fertility (Repr. 2).

Toxicology Assessment
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Acute effects: Based on available data, the classification criteria are not met.
Sensitization: May cause an allergic skin reaction.

octamethylcyclotetrasiloxane
Acute effects: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Acute Fish toxicity
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
LC50 1 - 10 mg/l
Species: Leuciscus idus (Golden orfe)
Exposure duration: 96 h
Method: DIN 38412

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
LC50 > 0,082 mg/l
Species: Cyprinus carpio (Carp)
Exposure duration: 96 h
No toxic effects in the water-soluble range.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
LC50 160 mg/l
Exposure duration: 96 h

LC50 160 mg/l
Species: Leuciscus idus (Golden orfe)
Exposure duration: 96 h
Method: Regulation (EC) No. 440/2008, Annex, C.15

octamethylcyclotetrasiloxane
LC50 > 0,022 mg/l
Species: Oncorhynchus mykiss (rainbow trout)
Exposure duration: 96 h
No toxic effects in the water-soluble range.

Chronic Fish toxicity
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Study scientifically not justified.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
No data available.

octamethylcyclotetrasiloxane
NOEC > 0,0044 mg/l
Species: Oncorhynchus mykiss (rainbow trout)
Exposure duration: 93 d
No toxic effects in the water-soluble range.

Acute toxicity for daphnia
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
EC50 10 - 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
EL50 > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
EC50 > 119 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

octamethylcyclotetrasiloxane
EC50 > 0,015 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
No toxic effects in the water-soluble range.

Chronic toxicity to daphnia
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Study scientifically not justified.

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
no data available

octamethylcyclotetrasiloxane
NOEC 0,0079 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
No toxic effects in the water-soluble range.

Acute toxicity for algae
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
ErC50 10 - 100 mg/l
Species: scenedesmus subspicatus
Exposure duration: 72 h
Method: OECD Test Guideline 201

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
EL50 105 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
EC50 1,95 mg/l
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

NOEC 0,194 mg/l
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

octamethylcyclotetrasiloxane
ErC50 > 0,022 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 96 h
No toxic effects in the water-soluble range.

EC10 >= 0,022 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 96 h
No toxic effects in the water-soluble range.

Acute bacterial toxicity
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
EC50 > 10.000 mg/l
Species: Pseudomonas putida
Exposure duration: 0,5 h
Method: DIN 38412

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
EC50 > 1.000 mg/l
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
EC50 > 1.000 mg/l
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209

octamethylcyclotetrasiloxane
EC50 > 10.000 mg/l
Species: activated sludge
Exposure duration: 30 h

Ecotoxicology Assessment
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.

octamethylcyclotetrasiloxane
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Very toxic to aquatic life with long lasting effects. Classification/labelling according to Regulation (EC) No. 1272/2008, Annex VI

M-Factor
octamethylcyclotetrasiloxane
M-factor (chron. aquat. tox.): 10

12.2 Persistence and degradability

Biodegradability
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Biodegradation: 40 - 50 %, i.e. not readily degradable
Method: OECD Test Guideline 301 B

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Biodegradation: 42 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 F

2-Hydroxy-2-methyl-1-phenyl-propan-1-one
Test type: aerobic
Inoculum: activated sludge
Biodegradation: >= 90 %, 28 d, i.e. readily biodegradable
Method: OECD Test Guideline 301 B

octamethylcyclotetrasiloxane
Test type: aerobic
Inoculum: activated sludge
Biodegradation: 3,7 %, 29 d, i.e. not readily degradable
Method: OECD Test Guideline 310

12.3 Bioaccumulative potential

Bioaccumulation
octamethylcyclotetrasiloxane
Bioconcentration factor (BCF): 12.400
Species: Fish

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. Reference number 2008/98/EC

Dispose in accordance with applicable international, national and local laws, ordinances and statutes. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. The classification of the product may meet the criteria for a hazardous waste. Offer surplus and non-recyclable solutions to a licensed disposal company. Do not dispose of waste into sewer.

13.1 Waste treatment methods

After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), they can be sent to an appropriate collection point set up within the framework of the existing take-back scheme of the chemical industry. Empty containers retain residue and can be dangerous. Containers must be recycled in compliance with national legislation and environmental regulations. Dispose of empty containers and wastes safely. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Where possible recycling is preferred to disposal or incineration.

No disposal into waste water.

SECTION 14: Transport information

ADR/RID

14.1 UN number or ID number	:	UN 3082
14.2 UN proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tripropylene glycol diacrylate, Bisphenol A diglycidyl diacrylate)
14.3 Transport hazard class(es)	:	9
Hazard Identification Number	:	90
14.4 Packing group	:	III
14.5 Environmental hazards	:	yes

Limited quantity regulations applicable in accordance with chapter 3.4 ADR/RID in compliance with threshold value

ADN

14.1 UN number or ID number	:	UN 3082
14.2 UN proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tripropylene glycol diacrylate, Bisphenol A diglycidyl diacrylate)
14.3 Transport hazard class(es)	:	9
Hazard Identification Number	:	90
14.4 Packing group	:	III
14.5 Environmental hazards	:	yes

This classification data does not apply to transportation by tanker. If required, additional information can be requested from the manufacturer.

IATA

14.1 UN number or ID number	:	UN 3082
14.2 UN proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tripropylene glycol diacrylate, Bisphenol A diglycidyl diacrylate)
14.3 Transport hazard class(es)	:	9
14.4 Packing group	:	III
14.5 Environmental hazards	:	yes

IMDG

14.1 UN number or ID number	:	UN 3082
14.2 UN proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tripropylene glycol diacrylate, Bisphenol A diglycidyl diacrylate)
14.3 Transport hazard class(es)	:	9
14.4 Packing group	:	III
14.5 Environmental hazards	:	Marine pollutant
EmS Code	:	F-A - S-F
Segregation Group IMDG	:	not applicable

14.6 Special precautions for user

See section 6 - 8.

Additional information	:	Environmentally hazardous substance. Keep separated from foodstuffs.

14.7 Maritime transport in bulk according to IMO instruments

Product is not transported by us in bulk.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.
E2 Environmental hazards
Quantity1: 200 t Quantity2: 500 t

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)
Conditions of restriction for the following entries should be considered: 3

TA Luft List (Germany)
Type: 5.2.5 Organic Substances
Fraction of other substances: 99,17 %

portion Class 1: 0,02 %

Type: 5.2.7.1.1 Carcinogenic substance
portion Class 3: < 0,01 %

portion Class 1: < 0,01 %

Water contaminating class (Germany)
2 significantly water endangering

Other regulations
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been conducted for this substance / mixture resp. its components.

SECTION 16: Other information

Full text of the hazard statements of the CLP classification (1272/2008/CE) referred to under sections 2, 3 and 10.

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H361f	Suspected of damaging fertility.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Abbreviations and acronyms

ADN	Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation intérieure
ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ANSI	American National Standards Institute
ASTM	American Society of Testing and Materials (US)
ATE	Acute Toxic Estimate
AwSv	Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen
BCF	Bioconcentration Factor
CAS	Chemical Abstract Service
CLP	Regulation on Classification, Labelling and Packaging of Substances and Mixtures
CMR	Cancerogenic Mutagenic Reprotoxic
DIN	Deutsches Institut für Normung
DNEL	Derived No-Effect Level
EC…	Effect Concentration ... %
EWC	European Waste Catalogue
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LOAEL	Lowest Observable Adverse Effect Level
LC…	Lethal Concentration, ...%
LD…	Lethal Dose, ...%
MARPOL	International Convention for the Prevention of Pollution From Ships
NOAEL	No Observed Adverse Effect Level
NOEL/NOEC	No Observed Effect Level/Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	persistent, bioaccumulative, toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire de marchandises Dangereuses
STOT	Specific Target Organ Toxicity
TRGS	Technische Regeln für Gefahrstoffe
vPvB	very Persistent, very Bioaccumulative
WGK	Wassergefährdungsklasse

Further information

Classification of the mixture:	Classification procedure:
Skin Irrit. 2 H315	Calculation method
Eye Irrit. 2 H319	Calculation method
Skin Sens. 1 H317	Calculation method
STOT SE 3 H335	Calculation method
Aquatic Chronic 2 H411	Calculation method

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