

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

NOROX[®]WPC-100



Version	Revision Date:	SDS Number:	Date of last issue: 09.12.2022
2.2	06.03.2023	600000000638	Date of first issue: 07.08.2017

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

1.1 Product identifier

Trade name : NOROX[®]WPC-100

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

Use of the Sub-
stance/Mixture : Hardener

1.3 Details of the supplier of the safety data sheet

Company : United Initiators GmbH
Dr.-Gustav-Adolph-Str. 3
82049 Pullach

Telephone : +49 / 89 / 74422 – 0

E-mail address of person
responsible for the SDS : contact@united-in.com

1.4 Emergency telephone number

+44 1235 239670

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Organic peroxides, Type D H242: Heating may cause a fire.

Eye irritation, Category 2 H319: Causes serious eye irritation.

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms : 

Signal word : Danger

Hazard statements : H242 Heating may cause a fire.
H317 May cause an allergic skin reaction.

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H319 Causes serious eye irritation.

Precautionary statements : **Prevention:**

P220 Keep/Store away from clothing/ strong acids, bases, heavy metal salts and other reducing substances /combustible materials.

P233 Keep container tightly closed.

P235 Keep cool.

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

P262 Do not get in eyes, on skin, or on clothing.

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

Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

3,5-dimethyl-1,2-dioxolane-3,5-diol (CAS-No. 13784-51-5)

tert-Butyl perbenzoate (CAS-No. 614-45-9)

2.3 Other hazards

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.

Ecological information: 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.

Toxicological information: 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.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Organic Peroxide
Liquid mixture

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
3,5-dimethyl-1,2-dioxolane-3,5-diol	13784-51-5 237-438-9 01-2119965139-28-0005	Org. Perox. D; H242 Eye Irrit. 2; H319 Skin Sens. 1; H317	>= 20 - < 25
tert-Butyl perbenzoate	614-45-9 210-382-2 01-2119513317-46-0003	Org. Perox. C; H242 Acute Tox. 4; H332 Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 3; H412 M-Factor (Acute aquatic toxicity): 1 Acute toxicity estimate Acute inhalation toxicity (dust/mist): 1.01 mg/l	>= 7.5 - < 10
Acetylacetone	123-54-6 204-634-0 606-029-00-0 01-2119458968-15	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 3; H331 Acute Tox. 3; H311 Acute toxicity estimate Acute oral toxicity: 570 mg/kg Acute inhalation toxicity (vapour): 5.1 mg/l Acute dermal toxicity: 790 mg/kg	>= 1 - < 5

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For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
Symptoms of poisoning may appear several hours later.
Call a physician immediately.
- Protection of first-aiders : First Aid responders should pay attention to self-protection
and use the recommended protective clothing
- If inhaled : Call a physician or poison control centre immediately.
If unconscious, place in recovery position and seek medical
advice.
Keep respiratory tract clear.
Call a physician immediately.
If breathed in, move person into fresh air.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water
for at least 15 minutes while removing contaminated clothing
and shoes.
Wash contaminated clothing before re-use.
If on skin, rinse well with water.
If on clothes, remove clothes.
If symptoms persist, call a physician.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty
of water and seek medical advice.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Call a physician immediately.
Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

- Risks : May cause an allergic skin reaction.
Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically and supportively.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray jet
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may auto-ignite.
The product burns violently.
Flash back possible over considerable distance.
Vapours may form explosive mixtures with air.
The product will float on water and can be reignited on surface water.
Cool closed containers exposed to fire with water spray.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

Specific extinguishing methods : Do not use a solid water stream as it may scatter and spread fire.
Remove undamaged containers from fire area if it is safe to do so.
Use water spray to cool unopened containers.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.
Follow safe handling advice and personal protective equip-

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ment recommendations.

Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Never return spills in original containers for re-use.

Treat recovered material as described in the section "Disposal considerations".

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contact with incompatible substances can cause decomposition at or below SADT.
Clear spills immediately.
Suppress (knock down) gases/vapours/mists with a water spray jet.
To clean the floor and all objects contaminated by this material, use plenty of water.
Soak up with inert absorbent material.
Isolate waste and do not reuse.
Non-sparking tools should be used.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Advice on safe handling : Do not swallow.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Avoid formation of aerosol.
Take precautionary measures against static discharges.
Never return any product to the container from which it was originally removed.
Provide sufficient air exchange and/or exhaust in work rooms.
Avoid confinement.

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Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Smoking, eating and drinking should be prohibited in the application area.
Wash thoroughly after handling.
For personal protection see section 8.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Protect from contamination.

Advice on protection against fire and explosion : Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from combustible material.

Hygiene measures : Keep away from food and drink. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Avoid impurities (e.g. rust, dust, ash), risk of decomposition. Electrical installations / working materials must comply with the technological safety standards. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Store in accordance with the particular national regulations.

Advice on common storage : Keep away from strong acids, bases, heavy metal salts and other reducing substances.

Recommended storage temperature : 0 - 25 °C

Further information on storage stability : No decomposition if stored normally.

7.3 Specific end use(s)

Specific use(s) : For further information, refer to the product technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
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Acetylacetone	123-54-6	OELV - 8 hrs (TWA)	25 ppm	IE OEL
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Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
	75-65-0	OELV - 8 hrs (TWA)	100 ppm 300 mg/m ³	IE OEL
		OELV - 15 min (STEL)	150 ppm 450 mg/m ³	IE OEL
	67-64-1	TWA	500 ppm 1,210 mg/m ³	2000/39/EC
Further information: Indicative				
		OELV - 8 hrs (TWA)	500 ppm 1,210 mg/m ³	IE OEL
Further information: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit value should be used, Indicative Occupational Exposure Limit Value				
Further information: Substantial contribution to the total burden via dermal exposure possible, Skin, Carcinogens or mutagens				
Further information: Binding Occupational Exposure Limit Value, Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body, Carc 1A - Substances known to have carcinogenic potential for humans, Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit value should be used				

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
3,5-dimethyl-1,2-dioxolane-3,5-diol	Workers	Inhalation	Long-term systemic effects	11.75 mg/m ³
	Workers	Skin contact	Long-term systemic effects	13.33 mg/kg bw/day
tert-Butyl perbenzoate	Workers	Inhalation	Long-term systemic effects	4 mg/m ³
	Workers	Skin contact	Long-term systemic effects	6.25 mg/kg bw/day
Acetylacetone	Workers	Inhalation		84 mg/m ³
	Workers	Skin contact		12 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
3,5-dimethyl-1,2-dioxolane-3,5-diol	Fresh water	0.054 mg/l
	Marine water	0.0054 mg/l
	Intermittent use/release	0.054 mg/l
	Fresh water sediment	0.48 mg/kg
	Marine sediment	0.048 mg/kg

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	Sewage treatment plant	6.2 mg/l
	Soil	0.065 mg/kg
tert-Butyl perbenzoate	Fresh water	0.0088 mg/l
	Marine water	0.0009 mg/l
	Intermittent use/release	0.008 mg/l
	Sewage treatment plant	0.6 mg/l
	Fresh water sediment	0.24 mg/kg
	Marine sediment	0.024 mg/kg
	Soil	0.043 mg/kg
Acetylacetone	Fresh water	0.026 mg/l
	Marine water	0.0026 mg/l
	Sewage treatment plant	1.32 mg/l
	Fresh water sediment	0.155 mg/kg wet weight
	Marine sediment	0.0155 mg/kg wet weight
	Soil	0.01582 mg/kg wet weight

8.2 Exposure controls

Engineering measures

Minimize workplace exposure concentrations.

Personal protective equipment

Eye protection : Tightly fitting safety goggles
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.
Ensure that eyewash stations and safety showers are close to the workstation location.
Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.

Equipment should conform to EN 166

Hand protection

Material : butyl-rubber
Break through time : < 120 min
Glove thickness : 0.47 mm
Directive : Equipment should conform to EN 374

Remarks : The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove. Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of

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- workday.
- Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.
Wear as appropriate:
Flame retardant antistatic protective clothing.
- Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.
Respirator with combination filter for vapour/particulate (EN 141)
- Filter type : ABEK-filter
- Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Physical state : liquid
- Colour : yellow, clear
- Odour : very faint
- Odour Threshold : not determined
- Melting point/freezing point : not determined
- Initial boiling point and boiling range : Decomposition at boiling point.
- Flammability : Not applicable
- Upper explosion limit / Upper flammability limit : Upper explosion limit
No data available
- Lower explosion limit / Lower flammability limit : Lower explosion limit
not determined
- Flash point : 68 °C
Method: closed cup

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Self-Accelerating decomposition temperature (SADT) : > 60 °C
Method: UN-Test H.4
SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction.

pH : not determined

Viscosity
Viscosity, dynamic : 80 - 90 mPa.s (20 °C)

Solubility(ies)
Water solubility : partly soluble

Solubility in other solvents : Solvent: organic solvents
soluble

Solvent: Esters
soluble

Solvent: Ketones
soluble

Partition coefficient: n-octanol/water : No data available

Vapour pressure : not determined

Density : ca. 1.1 g/cm³ (20 °C)

Relative vapour density : No data available

9.2 Other information

Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.
Organic peroxide

Flammability (liquids) : Flammable liquid, Organic peroxide

Self-ignition : The substance or mixture is not classified as pyrophoric.

Self-heating substances : The substance or mixture is not classified as self heating.

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SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Protect from contamination.
Contact with incompatible substances can cause decomposition at or below SADT.
Heat, flames and sparks.
Avoid confinement.

10.5 Incompatible materials

Materials to avoid : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents

10.6 Hazardous decomposition products

Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

SECTION 11: Toxicological information

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

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

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Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

- Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401
- Acute inhalation toxicity : LC50 (Rat, male): > 13.1 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Method: Expert judgement
Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: Expert judgement
Assessment: The substance or mixture has no acute dermal toxicity

tert-Butyl perbenzoate:

- Acute oral toxicity : LD0 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 423
Assessment: The substance or mixture has no acute oral toxicity
- Acute inhalation toxicity : LC50 (Rat): 1.01 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
- Acute toxicity estimate: 1.01 mg/l
Test atmosphere: dust/mist
Method: Calculation method
- Acute dermal toxicity : LD0 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Acetylacetone:

- Acute oral toxicity : LD50 (Rat): 570 mg/kg
- Acute toxicity estimate: 570 mg/kg
Method: Calculation method
- Acute inhalation toxicity : LC50 (Rat): 5.1 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

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Acute toxicity estimate: 5.1 mg/l
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : LD50 (Rabbit, female): 790 mg/kg

Acute toxicity estimate: 790 mg/kg
Method: Calculation method

Skin corrosion/irritation

Not classified based on available information.

Product:

Remarks : May cause skin irritation and/or dermatitis.

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

tert-Butyl perbenzoate:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

Acetylacetone:

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks : May cause irreversible eye damage.

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Eye irritation

tert-Butyl perbenzoate:

Species : Rabbit

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Method : OECD Test Guideline 405
Result : No eye irritation

Acetylacetone:

Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Remarks : Causes sensitisation.

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Probability or evidence of skin sensitisation in humans

Remarks : Causes sensitisation.

tert-Butyl perbenzoate:

Species : Mouse
Method : OECD Test Guideline 429
Result : May cause sensitisation by skin contact.

Acetylacetone:

Exposure routes : Skin contact
Species : Mouse
Method : OECD Test Guideline 429
Result : Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified based on available information.

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471

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Result: positive

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative

tert-Butyl perbenzoate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: positive

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: positive

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: positive

Test Type: Mouse Lymphoma
Result: positive

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Application Route: Oral
Result: negative

Acetylacetone:

Genotoxicity in vitro : Method: OECD Test Guideline 471
Result: negative

Method: OECD Test Guideline 479
Result: positive

Method: OECD Test Guideline 473
Result: positive

Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: positive

Method: OECD Test Guideline 483

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Result: negative

Method: OECD Test Guideline 475
Result: negative

Method: OECD Test Guideline 478
Result: Equivocal

Test Type: DNA Repair
Species: Rat
Application Route: Oral
Result: negative

Species: Rat
Application Route: inhalation (vapour)
Method: OPPTS 870.5395
Result: negative

Carcinogenicity

Not classified based on available information.

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Remarks : This information is not available.

tert-Butyl perbenzoate:

Remarks : This information is not available.

Reproductive toxicity

Not classified based on available information.

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

tert-Butyl perbenzoate:

Effects on fertility : Species: Rat
Application Route: Oral
General Toxicity - Parent: NOAEL: 300 mg/kg body weight
Method: OECD Test Guideline 421

Effects on foetal development : Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 300 mg/kg body weight

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Method: OECD Test Guideline 414

Acetylacetone:

Effects on foetal development : Species: Rat
Application Route: inhalation (vapour)
Duration of Single Treatment: 13 d
General Toxicity Maternal: NOAEC: 200
Teratogenicity: NOAEC Parent: 400
Embryo-foetal toxicity: NOAEC F1: 50
Method: OECD Test Guideline 414

Species: Rat
Application Route: inhalation (vapour)
Duration of Single Treatment: 13 d
General Toxicity Maternal: LOAEC: 400
Embryo-foetal toxicity: LOAEC F1: 200
Method: OECD Test Guideline 414

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

Acetylacetone:

Species : Rat
NOAEL : 200 mg/kg
LOAEL : 805 mg/kg
Application Route : inhalation (vapour)
Exposure time : 9 d

Species : Rat
NOAEL : 100 mg/kg
Application Route : inhalation (vapour)
Exposure time : 90 d
Method : OECD Test Guideline 413

Species : Rabbit
NOAEL : 244 mg/kg
LOAEL : 975 mg/kg
Application Route : Dermal
Exposure time : 9 d

Aspiration toxicity

Not classified based on available information.

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Components:

Acetylacetone:

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : 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.

Further information

Product:

Remarks : No data available

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Remarks : No data available

Acetylacetone:

Remarks : Solvents may degrease the skin.

SECTION 12: Ecological information

12.1 Toxicity

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 67.6 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 7.05 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 5.36 mg/l

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Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 : 614 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

tert-Butyl perbenzoate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1.6 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 11 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.8 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.72 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 : 43 mg/l
Exposure time: 0.5 h
Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: 0.49 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Acetylacetone:

Toxicity to fish : LC50 (Fish): 104 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 25.9 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 83.22 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

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NOEC (Pseudokirchneriella subcapitata (green algae)): 3.2 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 : 107.6 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

EC10 : 13.2 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity) : NOEC: 10 mg/l
Exposure time: 34 d
Species: Pimephales promelas (fathead minnow)
Method: OECD Test Guideline 210

LOEC: 22 mg/l
Exposure time: 34 d
Species: Pimephales promelas (fathead minnow)
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 18 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

12.2 Persistence and degradability

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301D

tert-Butyl perbenzoate:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301D

Acetylacetone:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301C

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12.3 Bioaccumulative potential

Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Partition coefficient: n-octanol/water : log Pow: 1.1 (25 °C)
Method: OECD Test Guideline 117

tert-Butyl perbenzoate:

Partition coefficient: n-octanol/water : log Pow: 2.89 (25 °C)

Acetylacetone:

Bioaccumulation : Bioconcentration factor (BCF): 3.16
Remarks: Calculation

Partition coefficient: n-octanol/water : log Pow: 0.68 (40 °C)

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

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

Product:

Assessment : 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

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

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Components:

3,5-dimethyl-1,2-dioxolane-3,5-diol:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of wastes in an approved waste disposal facility.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.
Dispose of in accordance with local regulations.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 3105
IMDG : UN 3105

14.2 UN proper shipping name

ADR : ORGANIC PEROXIDE TYPE D, LIQUID
(ACETYL ACETONE PEROXIDE, tert-BUTYL PEROXYBENZOATE)

IMDG : ORGANIC PEROXIDE TYPE D, LIQUID
(ACETYL ACETONE PEROXIDE, tert-BUTYL PEROXYBENZOATE)

14.3 Transport hazard class(es)

ADR : 5.2
IMDG : 5.2

14.4 Packing group

ADR
Packing group : Not assigned by regulation
Classification Code : P1
Labels : 5.2

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Tunnel restriction code : (D)

IMDG

Packing group : Not assigned by regulation
Labels : 5.2
EmS Code : F-J, S-R

14.5 Environmental hazards

ADR

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

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: Number on list 3

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P6b	SELF-REACTIVE	Quantity 1 50 t	Quantity 2 200 t
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Other regulations:

Gefahrgruppe nach DGUV 13 Vorschrift 13 (bisher BGV B4): III (German regulatory requirements)

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

The components of this product are reported in the following inventories:

TCSI (TW)	: On the inventory, or in compliance with the inventory
TSCA (US)	: All substances listed as active on the TSCA inventory
AIIIC (AU)	: On the inventory, or in compliance with the inventory
DSL (CA)	: All components of this product are on the Canadian DSL
ENCS (JP)	: On the inventory, or in compliance with the inventory
ISHL (JP)	: On the inventory, or in compliance with the inventory
KECI (KR)	: On the inventory, or in compliance with the inventory
PICCS (PH)	: On the inventory, or in compliance with the inventory
IECSC (CN)	: On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H226	: Flammable liquid and vapour.
H242	: Heating may cause a fire.
H302	: Harmful if swallowed.
H311	: Toxic in contact with skin.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H319	: Causes serious eye irritation.
H331	: Toxic if inhaled.
H332	: Harmful if inhaled.

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H400 : Very toxic to aquatic life.
H412 : Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
Org. Perox. : Organic peroxides
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
IE OEL : Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1
2000/39/EC / TWA : Limit Value - eight hours
IE OEL / OELV - 8 hrs (TWA) : Occupational exposure limit value (8-hour reference period)
IE OEL / OELV - 15 min (STEL) : Occupational exposure limit value (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA

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- Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : This safety datasheet only contains information relating to safety and does not replace any product information or product specification.
These safety instructions also apply to empty packaging which may still contain product residues.

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Classification of the mixture:

Org. Perox. D	H242
Eye Irrit. 2	H319
Skin Sens. 1	H317

Classification procedure:

Based on product data or assessment
Calculation method
Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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