

# SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519  
CN



## OKS 2581 不锈钢保护剂

Version 4.1      Revision Date: 2024-03-01      Date of last issue: 2023-09-15  
Date of first issue: 2023-09-15      Print Date: 2024-03-04

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : OKS 2581 不锈钢保护剂  
Chemical nature : Contains solvents, lacquer base, metal and metal oxide powder.  
Corrosion inhibitor

#### Manufacturer or supplier's details

Company name of supplier : OKS Spezialschmierstoffe GmbH  
Ganghoferstr. 47  
D-82216 Maisach-Gernlinden  
Tel.: +49 8142 3051 500  
Fax.: +49 8142 3051 599  
info@oks-germany.com  
E-mail address of person responsible for the SDS : mcm@oks-germany.com  
National contact :  
Emergency telephone number : +86 532 8388 9090 (NRCC, only for hazardous chemicals)  
+86 21 69225521

#### Recommended use of the chemical and restrictions on use

Recommended use : Corrosion inhibitor  
Restrictions on use : Restricted to professional users.

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

Appearance : aerosol  
Colour : silver  
Odour : characteristic

Extremely flammable aerosol. Pressurised container: May burst if heated. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. Toxic to aquatic life with long lasting effects.

#### GHS Classification

Aerosols : Category 1  
Skin irritation : Category 2  
Eye irritation : Category 2A

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Specific target organ toxicity - single exposure : Category 3 (Narcotic effects)

Short-term (acute) aquatic hazard : Category 2

Long-term (chronic) aquatic hazard : Category 2

### GHS label elements

Hazard pictograms :   

Signal word : Danger

Hazard statements : H222 Extremely flammable aerosol.  
H229 Pressurised container: May burst if heated.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.  
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces.  
No smoking.  
P211 Do not spray on an open flame or other ignition source.  
P251 Do not pierce or burn, even after use.  
P261 Avoid breathing mist.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ eye protection/ face protection.  
**Response:**  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air  
and keep comfortable for breathing. Call a POISON CENTER/  
doctor if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water  
for several minutes. Remove contact lenses, if present and  
easy to do. Continue rinsing.  
P332 + P313 If skin irritation 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.

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### Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

### Disposal:

P501 Dispose of contents/containers according the local government requirements.

### Physical and chemical hazards

Extremely flammable aerosol. Pressurised container: May burst if heated.

### Health hazards

Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness.

### Environmental hazards

Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

### Other hazards which do not result in classification

None known.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
butanone	78-93-3	>= 30 -< 50
Dimethyl ether	115-10-6	>= 30 -< 50
Acetone	67-64-1	>= 10 -< 20
Cyclopentanone	120-92-3	>= 1 -< 10
Zinc (stabilized)	7440-66-6	>= 2.5 -< 10
n-Butyl acetate	123-86-4	>= 1 -< 2.5
manganese	7439-96-5	>= 0.1 -< 0.3

## 4. FIRST AID MEASURES

If inhaled : Call a physician or poison control centre immediately.  
Remove person to fresh air. If signs/symptoms continue, get medical attention.  
Keep patient warm and at rest.  
If unconscious, place in recovery position and seek medical advice.

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- Keep respiratory tract clear.  
If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : Take off all contaminated clothing immediately.  
Wash off immediately with soap and plenty of water.  
Get medical attention immediately if irritation develops and persists.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,  
for at least 10 minutes.  
Seek medical advice.
- If swallowed : Move the victim to fresh air.  
If accidentally swallowed obtain immediate medical attention.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Rinse mouth with water.
- Most important symptoms and effects, both acute and delayed : Inhalation may provoke the following symptoms:  
Unconsciousness  
Dizziness  
Drowsiness  
Headache  
Nausea  
Tiredness  
Skin contact may provoke the following symptoms:  
Erythema  
Allergic appearance  
Central nervous system depression  
Causes skin irritation.
- Notes to physician : Treat symptomatically.

## 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : ABC powder
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard  
Do not let product enter drains.  
Contains gas under pressure; may explode if heated.  
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

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- Hazardous combustion products : Carbon oxides  
Halogenated compounds  
Metal oxides
- Specific extinguishing methods : Standard procedure for chemical fires.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Cool containers/tanks with water spray.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.  
Exposure to decomposition products may be a hazard to health.

## 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.  
Ensure adequate ventilation.  
Remove all sources of ignition.  
Do not breathe vapours or spray mist.  
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : 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).  
Keep in suitable, closed containers for disposal.  
Non-sparking tools should be used.
- Prevention of secondary hazards : Only qualified personnel equipped with suitable protective equipment may intervene.

## 7. HANDLING AND STORAGE

### Handling

- Advice on safe handling : Do not use in areas without adequate ventilation.  
Do not breathe vapours or spray mist.  
In case of insufficient ventilation, wear suitable respiratory equipment.  
Avoid contact with skin and eyes.

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For personal protection see section 8.  
Keep away from fire, sparks and heated surfaces.  
Persons with a history of 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.  
Smoking, eating and drinking should be prohibited in the application area.  
Wash hands and face before breaks and immediately after handling the product.  
Do not get in eyes or mouth or on skin.  
Do not get on skin or clothing.  
Do not ingest.  
Do not use sparking tools.  
These safety instructions also apply to empty packaging which may still contain product residues.  
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use.

Avoidance of contact : Oxidizing agents

### Storage

Conditions for safe storage : BEWARE: Aerosol is pressurized. Keep away from direct sun exposure and temperatures over 50 °C. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects.  
Store in accordance with the particular national regulations.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
butanone	78-93-3	PC-TWA	300 mg/m <sup>3</sup>	CN OEL (2019-08-27)
		PC-STEL	600 mg/m <sup>3</sup>	CN OEL (2019-08-27)
		TWA	200 ppm	ACGIH (2013-03-01)
		STEL	300 ppm	ACGIH (2013-03-01)
Acetone	67-64-1	PC-TWA	300 mg/m <sup>3</sup>	CN OEL (2019-08-27)
		PC-STEL	450 mg/m <sup>3</sup>	CN OEL

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				(2019-08-27)
		TWA	250 ppm	ACGIH (2021-01-01)
		STEL	500 ppm	ACGIH (2021-01-01)
n-Butyl acetate	123-86-4	PC-TWA	200 mg/m3	CN OEL (2019-08-27)
		PC-STEL	300 mg/m3	CN OEL (2019-08-27)
		TWA	50 ppm	ACGIH (2017-03-01)
		STEL	150 ppm	ACGIH (2017-03-01)
manganese	7439-96-5	PC-TWA	0.15 mg/m3 (MnO <sub>2</sub> )	CN OEL (2019-08-27)
		TWA (Inhalable particulate matter)	0.1 mg/m3 (Manganese)	ACGIH (2015-04-10)
		TWA (Respirable particulate matter)	0.02 mg/m3 (Manganese)	ACGIH (2015-04-10)

### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
butanone	78-93-3	methyl ethyl ketone	Urine	End of shift (As soon as possible after exposure ceases)	2 mg/l	ACGIH BEI (2014-03-01)
Acetone	67-64-1	Acetone	Urine	End of shift	50 mg/l	CN BEI (2019-08-27)
		Acetone	Urine	End of shift (As soon as possible after exposure ceases)	25 mg/l	ACGIH BEI (2017-03-01)

**Engineering measures** : Use only in an area equipped with explosion proof exhaust ventilation.  
Handle only in a place equipped with local exhaust (or other appropriate exhaust).

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### Personal protective equipment

- Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
- Filter type : Recommended Filter type:  
Organic gas and low boiling vapour type
- Eye/face protection : Safety glasses with side-shields
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
- Hand protection  
Material : butyl-rubber  
Break through time : > 10 min  
Protective index : Class 1
- Remarks : Wear protective gloves. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.
- Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- Hygiene measures : Wash face, hands and any exposed skin thoroughly after handling.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : aerosol
- Colour : silver
- Odour : characteristic
- Odour Threshold : No data available



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pH	:	Not applicable substance/mixture is non-soluble (in water)
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	-42 °C  Method: Abel-Pensky
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Extremely flammable aerosol.
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	26.2 %(V)
Lower explosion limit / Lower flammability limit	:	1 %(V)
Vapour pressure	:	3,200 hPa (20 °C)
Relative vapour density	:	No data available
Relative density	:	0.86 (20 °C) Reference substance: Water The value is calculated
Density	:	0.86 g/cm <sup>3</sup> (20 °C)
Bulk density	:	No data available
Solubility(ies)	:	
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	350 °C (1,013 hPa)
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, dynamic	:	No data available

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Viscosity, kinematic : < 20.5 mm<sup>2</sup>/s ( 40 °C)  
Explosive properties : Not explosive  
Oxidizing properties : No data available  
Sublimation point : No data available

### 10. STABILITY AND REACTIVITY

Reactivity : No hazards to be specially mentioned.  
Chemical stability : Stable under normal conditions.  
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.  
Conditions to avoid : Heat, flames and sparks.  
Strong sunlight for prolonged periods.  
Risk of receptacle bursting.  
Incompatible materials : Oxidizing agents  
Hazardous decomposition products : No decomposition if stored and applied as directed.

### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

Remarks: Effects due to ingestion may include:

Symptoms: Central nervous system depression

Acute inhalation toxicity : Remarks: Respiration of solvent vapour may cause dizziness.  
Harmful by inhalation.

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Symptoms: Inhalation may provoke the following symptoms:  
Respiratory disorder, Respiratory disorders, Dizziness,  
Drowsiness, Asthma, Shortness of breath, Vomiting, Fatigue,  
Vertigo, Central nervous system depression

Acute toxicity estimate: > 40 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Calculation method

Acute dermal toxicity : Symptoms: Redness, Local irritation

### Components:

#### **butanone:**

Acute oral toxicity : LD50 (Rat): 2,193 mg/kg  
Method: OECD Test Guideline 423  
GLP: yes

Acute inhalation toxicity : LC50 (Rat): 34 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402

#### **Dimethyl ether:**

Acute inhalation toxicity : LC50 (Rat): 309 mg/l  
Exposure time: 4 h  
Test atmosphere: gas

#### **Acetone:**

Acute oral toxicity : LD50 Oral (Rat): 5,800 mg/kg

#### **Cyclopentanone:**

Acute oral toxicity : LD50 Oral (Rat): > 2,000 mg/kg

#### **Zinc (stabilized):**

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Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.41 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
GLP: yes  
Assessment: The substance or mixture has no acute inhalation toxicity

### **n-Butyl acetate:**

Acute oral toxicity : LD50 (Rat): 10,768 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 21 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403  
GLP: yes  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 17,600 mg/kg

### **Skin corrosion/irritation**

#### **Product:**

Result : Skin irritation

Remarks : Irritating to skin.

#### **Components:**

##### **butanone:**

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

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Result : Repeated exposure may cause skin dryness or cracking.

### Dimethyl ether:

Assessment : No skin irritation  
Result : No skin irritation

### Cyclopentanone:

Species : Rabbit  
Result : Skin irritation

### Zinc (stabilized):

Species : Rabbit  
Assessment : No skin irritation  
Result : No skin irritation

### n-Butyl acetate:

Species : Rabbit  
Assessment : No skin irritation  
Method : OECD Test Guideline 404  
Result : Repeated exposure may cause skin dryness or cracking.

### Serious eye damage/eye irritation

#### Product:

Remarks : Irritating to eyes.

#### Components:

##### butanone:

Species : Rabbit  
Result : Irritating to eyes.  
Assessment : Irritating to eyes.  
Method : OECD Test Guideline 405

##### Dimethyl ether:

Result : No eye irritation  
Assessment : No eye irritation

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### Acetone:

Species : Rabbit  
Result : Eye irritation

### Cyclopentanone:

Species : Rabbit  
Result : Eye irritation

### Zinc (stabilized):

Species : Rabbit  
Result : No eye irritation  
Exposure time : 24 h  
Assessment : No eye irritation  
Method : OECD Test Guideline 405  
GLP : yes

### n-Butyl acetate:

Species : Rabbit  
Result : No eye irritation  
Assessment : No eye irritation  
Method : OECD Test Guideline 405  
GLP : yes

### Respiratory or skin sensitisation

#### Product:

Remarks : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### Components:

##### butanone:

Test Type : Buehler Test  
Species : Guinea pig  
Assessment : Does not cause skin sensitisation.  
Method : OECD Test Guideline 406  
Result : Does not cause skin sensitisation.  
GLP : yes

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### Dimethyl ether:

Assessment : Does not cause skin sensitisation.  
Result : Does not cause skin sensitisation.

### Zinc (stabilized):

Species : Guinea pig  
Assessment : Did not cause sensitisation on laboratory animals.  
Method : OECD Test Guideline 406  
Result : Did not cause sensitisation on laboratory animals.  
GLP : yes

### n-Butyl acetate:

Test Type : Maximisation Test  
Exposure routes : Dermal  
Species : Guinea pig  
Assessment : Does not cause skin sensitisation.  
Method : OECD Test Guideline 406  
Result : Does not cause skin sensitisation.

### Germ cell mutagenicity

#### Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

#### Components:

##### butanone:

Germ cell mutagenicity - Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

##### Dimethyl ether:

Genotoxicity in vitro : Test Type: Ames test  
Method: OECD Test Guideline 471  
Result: negative

Genotoxicity in vivo : Species: Drosophila melanogaster (vinegar fly)  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 477

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Result: negative

### Zinc (stabilized):

Germ cell mutagenicity - Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

### n-Butyl acetate:

Genotoxicity in vitro : Test Type: Ames test  
Test system: Salmonella typhimurium  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster cells  
Method: OECD Test Guideline 473  
Result: negative

Genotoxicity in vivo : Species: Mouse  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity - Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects., Animal testing did not show any mutagenic effects.

### Carcinogenicity

#### Product:

Remarks : No data available

#### Components:

##### butanone:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

##### Dimethyl ether:

Species : Rat  
Application Route : inhalation (gas)



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Exposure time                   : 2 Years  
  : 47 mg/l  
Method                             : OECD Test Guideline 453  
Result                              : negative

### Zinc (stabilized):

Carcinogenicity - Assessment                   : No evidence of carcinogenicity in animal studies.

### n-Butyl acetate:

Carcinogenicity - Assessment                   : Not classifiable as a human carcinogen.

### Reproductive toxicity

#### Product:

Effects on fertility                   : Remarks: No data available

Effects on foetal development                   : Remarks: No data available

#### Components:

##### butanone:

Reproductive toxicity - Assessment                   : - Fertility -  
No toxicity to reproduction  
- Teratogenicity -  
No effects on or via lactation

##### Dimethyl ether:

Reproductive toxicity - Assessment                   : - Fertility -  
Animal testing did not show any effects on fertility.

##### Zinc (stabilized):

Reproductive toxicity - Assessment                   : - Fertility -  
No toxicity to reproduction  
- Teratogenicity -  
No effects on or via lactation

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### n-Butyl acetate:

Effects on fertility : Test Type: Two-generation study  
Species: Rat  
Application Route: inhalation (vapour)  
General Toxicity - Parent: NOAEC: 750 mg/l  
General Toxicity F1: NOAEC: 750 mg/l  
General Toxicity F2: NOAEC: 750 mg/l  
Method: OECD Test Guideline 416  
Result: Embryotoxic effects and adverse effects on the offspring were detected.

Reproductive toxicity - Assessment : - Fertility -  
No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.  
- Teratogenicity -  
No toxicity to reproduction

### STOT - single exposure

#### Product:

Remarks : No data available

#### Components:

##### butanone:

Exposure routes : Inhalation  
Target Organs : Respiratory system  
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.  
May cause drowsiness or dizziness.

##### Acetone:

Exposure routes : Inhalation  
Assessment : May cause drowsiness or dizziness.

##### n-Butyl acetate:

Exposure routes : Inhalation  
Target Organs : Central nervous system  
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

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### STOT - repeated exposure

**Product:**

Remarks : No data available

**Components:**

**butanone:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**n-Butyl acetate:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Repeated dose toxicity

**Product:**

Remarks : This information is not available.

**Components:**

**n-Butyl acetate:**

Species : Rat  
NOAEL : 125 mg/kg  
Application Route : Oral

### Aspiration toxicity

**Product:**

This information is not available.

**Components:**

**butanone:**

No aspiration toxicity classification

**Dimethyl ether:**

No aspiration toxicity classification

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### Zinc (stabilized):

No aspiration toxicity classification

### n-Butyl acetate:

No aspiration toxicity classification

### Further information

#### Product:

Remarks : Risks of irreversible effects after a single exposure.  
Ingestion causes irritation of upper respiratory system and  
gastrointestinal disturbance.

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## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

Toxicity to fish : Remarks: Toxic to aquatic organisms, may cause long-term  
adverse effects in the aquatic environment.

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae/aquatic plants : Remarks: No data available

Toxicity to microorganisms : Remarks: No data available

#### Components:

##### butanone:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2,993 mg/l  
Exposure time: 96 h  
Test Type: static test

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Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 308 mg/l  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 1,972 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

Toxicity to microorganisms : EC50 (Pseudomonas putida): 1,150 mg/l  
Exposure time: 16 h  
Test Type: static test  
Method: DIN 38 412 Part 8

### Dimethyl ether:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): > 4,100 mg/l  
Exposure time: 96 h  
Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 4,400 mg/l  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (green algae): 154.9 mg/l  
Exposure time: 96 h

### Zinc (stabilized):

Toxicity to fish : LC50 (Oncorhynchus kisutch (coho salmon)): 0.727 mg/l  
Exposure time: 96 h  
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.937 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202

M-Factor (Acute aquatic toxicity) : 1

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M-Factor (Chronic aquatic toxicity) : 1

### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

### n-Butyl acetate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 18 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): 44 mg/l  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 397 mg/l  
Exposure time: 72 h  
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 23 mg/l  
Exposure time: 21 d  
Test Type: Reproduction Test  
GLP: yes

Toxicity to microorganisms : EC50 (Tetrahymena pyriformis): 356 mg/l  
Exposure time: 40 h  
Test Type: Growth inhibition

### Persistence and degradability

#### Product:

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

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### Components:

#### **butanone:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Result: rapidly biodegradable  
Biodegradation: 98 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D  
GLP: yes

#### **Dimethyl ether:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Not readily biodegradable.  
Biodegradation: 5 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

#### **Acetone:**

Biodegradability : Result: rapidly biodegradable

#### **Cyclopentanone:**

Biodegradability : Result: rapidly biodegradable

#### **n-Butyl acetate:**

Biodegradability : Primary biodegradation  
Result: rapidly biodegradable  
Biodegradation: 83 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

### **Bioaccumulative potential**

#### Product:

Bioaccumulation : Remarks: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).  
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

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### Components:

#### **butanone:**

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Partition coefficient: n-octanol/water : log Pow: 0.3 (40 °C)  
Method: OECD Test Guideline 117  
GLP: yes

#### **Dimethyl ether:**

Partition coefficient: n-octanol/water : log Pow: 0.07 (25 °C)

#### **Acetone:**

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 0.2

#### **Cyclopentanone:**

Bioaccumulation : Remarks: No data available

#### **n-Butyl acetate:**

Partition coefficient: n-octanol/water : log Pow: 2.3 (25 °C)  
pH: 7  
Method: OECD Test Guideline 117  
GLP: yes

### **Mobility in soil**

#### Product:

Mobility : Remarks: No data available

Distribution among environmental compartments : Remarks: No data available

### **Other adverse effects**

#### Product:

Additional ecological : Toxic to aquatic life with long lasting effects.



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information

### Components:

#### **butanone:**

Results of PBT and vPvB assessment : Non-classified PBT substance Non-classified vPvB substance

#### **Dimethyl ether:**

Results of PBT and vPvB assessment : Non-classified vPvB substance Non-classified PBT substance

#### **n-Butyl acetate:**

Results of PBT and vPvB assessment : Non-classified PBT substance Non-classified vPvB substance

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## 13. DISPOSAL CONSIDERATIONS

### **Disposal methods**

Waste from residues : Do not dispose of with domestic refuse.  
Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging : Packaging that is not properly emptied must be disposed of as the unused product.  
Offer empty spray cans to an established disposal company.  
Pressurized container: Do not pierce or burn, even after use.

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## 14. TRANSPORT INFORMATION

### **International Regulations**

#### **UNRTDG**

UN number : UN 1950  
Proper shipping name : AEROSOLS  
Class : 2.1  
Packing group : Not assigned by regulation  
Labels : 2.1

#### **IATA-DGR**

UN/ID No. : UN 1950  
Proper shipping name : Aerosols, flammable  
Class : 2.1  
Packing group : Not assigned by regulation

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Labels : Flammable Gas  
Packing instruction (cargo aircraft) : 203  
Packing instruction (passenger aircraft) : 203

### IMDG-Code

UN number : UN 1950  
Proper shipping name : AEROSOLS  
(zinc powder - zinc dust (stabilized))  
Class : 2.1  
Packing group : Not assigned by regulation  
Labels : 2.1  
EmS Code : F-D, S-U  
Marine pollutant : yes

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### National Regulations

#### GB 6944/12268

UN number : UN 1950  
Proper shipping name : AEROSOLS  
Class : 2.1  
Packing group : Not assigned by regulation  
Labels : 2.1

### 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.

## 15. REGULATORY INFORMATION

### National regulatory information

#### Law on the Prevention and Control of Occupational Diseases

#### Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals : Listed

#### Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)

No. / Code	Chemical name / Category	Threshold quantity
W3	Aerosols	150 t

Hazardous Chemicals for Priority Management under SAWS : Not applicable

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### Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

China Severely Restricted Toxic Chemicals (2023) : Not applicable

### International Regulations

Montreal Protocol : Not applicable

Rotterdam Convention (Prior Informed Consent) : Not applicable

Stockholm Convention (Persistent Organic Pollutants) : Not applicable

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

IECSC : Not in compliance with the inventory

## 16. OTHER INFORMATION

Date format : yyyy/mm/dd

### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)  
CN BEI : China. Biological Occupational Exposure Indices  
CN OEL : Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.

ACGIH / TWA : 8-hour, time-weighted average  
ACGIH / STEL : Short-term exposure limit  
CN OEL / PC-TWA : Permissible concentration - time weighted average  
CN OEL / PC-STEL : Permissible concentration - short term exposure limit

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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 -

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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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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