SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name

Zinc Spray Dark

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

Relevant identified uses

Coating. An agent for protection against corrosion.

Uses advised against

No information.

1.3. Details of the supplier of the safety data sheet

Supplier

WINKEL GmbH
Lisztstraße 1
53881 Euskirchen - Germany
Tel.: +49 2251 77 69 400-401
Fax: +49 2251 77 69 402
E-Mail: info@winkelgroup.de
Internet: www.winkelgroup.de

1.4. Emergency telephone number

112

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Aerosol 1; H222 Extremely flammable aerosol.
Aerosol 1; H229 Pressurised container: May burst if heated.
Asp. Tox. 1; H304 May be fatal if swallowed and enters airways.
Skin Irrit. 2; H315 Causes skin irritation.
Eye Irrit. 2; H319 Causes serious eye irritation.
STOT SE 3; H336 May cause drowsiness or dizziness.
Aquatic Chronic 2; H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

Signal word: **Danger**

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.
EUH208 Contains 2-butanone oxime. May produce an allergic reaction.
P102 Keep out of reach of children.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P302 + P352 + P362 + P364 IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/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.
P391 Collect spillage.
P410 + P412 Protect from sunlight. Do no expose to temperatures exceeding 50 °C/122°F.
P501 Dispose of contents/container in accordance with national regulation.

2.2.2. Contains:

acetone (CAS: 67-64-1, EC: 200-662-2, Index: 606-001-00-8)
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (EC: 927-510-4)
hydrocarbons, C9, aromatics (EC: 918-668-5)

2.2.3. Special provisions

Special hazards are not known or expected.

2.3. Other hazards

No information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

For mixtures see 3.2.

3.2. Mixtures

Name	CAS EC Index	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Conc. Limits	REACH Registration No.
acetone	67-64-1 200-662-2 606-001-00-8	10-25	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066		01-2119471330-49
isobutane *[C, U]*	75-28-5 200-857-2 601-004-00-0	10-25	Flam. Gas 1; H220 Press. Gas; H280		01-2119485395-27
xylene *[C]*	1330-20-7 215-535-7 601-022-00-9	10-25	Flam. Liq. 3; H226 Acute Tox. 4; H312 Skin Irrit. 2; H315 Acute Tox. 4; H332		-
dimethyl ether *[U]*	115-10-6 204-065-8 603-019-00-8	10-25	Flam. Gas 1; H220 Press. Gas; H280		01-2119472128-37
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	- 927-510-4 -	2,5-10	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Aquatic Chronic 2; H411		01-2119475515-33
propane *[U]*	74-98-6 200-827-9 601-003-00-5	2,5-10	Flam. Gas 1; H220 Press. Gas; H280		01-2119486944-21
hydrocarbons, C9, aromatics	- 918-668-5 -	2,5-10	Flam. Liq. 3; H226 Asp. Tox. 1; H304 STOT SE 3; H335 STOT SE 3; H336 Aquatic Chronic 2; H411		01-2119455851-35
aluminium powder (stabilised) *[T]*	7429-90-5 231-072-3 013-002-00-1	2,5-10	Flam. Sol. 1; H228 Water-react. 2; H261		01-2119529243-45
zinc powder - zinc dust (stabilized)	7440-66-6 231-175-3 030-001-01-9	2,5-10	Aquatic Acute 1; H400 Aquatic Chronic 1; H410		01-2119467174-37
2-butanone oxime	96-29-7 202-496-6 616-014-00-0	< 1	Acute Tox. 4; H312 Skin Sens. 1; H317 Eye Dam. 1; H318 Carc. 2; H351		01-2119539477-28
n-hexane	110-54-3 203-777-6 601-037-00-0	< 1	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Repr. 2; H361f STOT RE 2; H373 Aquatic Chronic 2; H411	STOT RE 2; H373: C ≥ 5 %	-

Notes for substances:

C	Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.
T	This substance may be marketed in a form which does not have the physical hazards as indicated by the classification in the entry in Part 3. If the results of the relevant method or methods in accordance with Part 2 of Annex I of this Regulation show that the specific form of substance marketed does not exhibit this physical property or these physical hazards, the substance shall be classified in accordance with the result or results of this test or these tests. Relevant information, including reference to the relevant test method(s) shall be included in the safety data sheet.
U	When put on the market gases have to be classified as 'Gases under pressure', in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case. The following codes are assigned: Press. Gas (Comp.) Press. Gas (Liq.) Press. Gas (Ref. Liq.) Press. Gas (Diss.) Aerosols shall not be classified as gases under pressure (See Annex I, Part 2, Section 2.3.2.1, Note 2).

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

General notes

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency.
No action shall be taken involving any personal risk or without suitable training.

Following inhalation

Remove patient to fresh air - move out of dangerous area. Keep at rest in a position comfortable for breathing. If symptoms develop and persist, seek medical attention. If breathing is irregular or respiratory arrest occurs provide artificial respiration. Seek medical help immediately. In case of unconsciousness bring patient into stable side position and seek medical attention.

Following skin contact

Take off all contaminated clothing. Carefully and gently brush the contaminated body surfaces in order to remove all traces of the product. Wash affected skin areas thoroughly with plenty of water and soap. If symptoms develop and persist, seek medical attention. Wash contaminated clothes and shoes before reuse.

Following eye contact

Immediately flush eyes with running water, keeping eyelids apart. If irritation persists, seek professional medical attention.

Following ingestion

Not likely. Accidental ingestion: Rinse mouth thoroughly with water. Do not induce vomiting without prior consultation with a doctor. In case of doubt or if feeling unwell seek medical help. If vomiting occurs, the patient should hold the head lower than the hips, because it reduces the possibility of aspiration. Show the physician the safety data sheet or label.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation

Vapours may cause drowsiness and dizziness.
Excessive exposure to spray mist, fog, or vapours may cause respiratory irritation.
Coughing, sneezing, nasal discharge, labored breathing.

Skin contact

Irritating to the skin.
Itching, redness, pain.
May cause sensitisation by skin contact (itching, redness, rashes).

Eye contact

Causes severe eye irritation.
Redness, tearing, pain.

Ingestion

Not likely.
Accidental ingestion:
May cause abdominal discomfort.
May cause nausea/vomiting and diarrhea.
May cause irritation of the digestive tract.
May be fatal if swallowed and enters airways.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire extinguishing powder.
Carbon dioxide (CO_2).

Unsuitable extinguishing media

Water.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

In case of a fire toxic gases can be generated; do not inhale gases/smoke. In case of heating or fire dense black smoke is generated. In the event of fire the following can be generated: carbon monoxide (CO), carbon dioxide (CO_2). Hydrocarbons. Nitrogen oxides (NO_X).
Aldehydes. Soot.

5.3. Advice for firefighters

Protective actions

In case of fire or heating do not breathe fumes/vapours. Vapours can form explosive mixtures with air. Prolonged heating can cause an explosion. In case of fire aerosols can explode and be propelled to considerable distances in different directions. Cool containers at risk with water spray. If possible remove containers from endangered area. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for firefighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Additional information

Contaminated extinguishing agents must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment

Use personal protective equipment (Section 8).

Emergency procedures

Ensure adequate ventilation. Keep away from sources of ignition and/or heat; No smoking! Evacuate the danger zone. Prevent access to unprotected personnel. Prevent access to unauthorised personnel. Avoid contact with skin, eyes and clothing. Do not breathe vapour or mist.

6.1.2. For emergency responders

Use personal protective equipment.

6.2. Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. The product is an aerosol, which is why leakage of large amounts of product is not expected. In case of release into the environment, inform the relevant authorities.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

Stem the spill if this does not pose risks.

6.3.2. For cleaning up

Collect the spray cans and hand them over to an authorized waste disposal contractor. Release of liquid because of damaged aerosol can (release of large quantities): In case of bigger spill, dam the spillage, pump the liquid into appropriate labelled containers, absorb a residue with absorbent material and dispose of according to local regulations. Do not absorb spillage with sawdust or other combustible material. Dispose in accordance with applicable regulations (see Section 13). Prevent release into the sewer, water, basements or confined areas.

6.3.3. Other information

-

6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1. Protective measures

Measures to prevent fire

Ensure adequate ventilation. Protect from open fire and other sources of ignition or heat. Pressurized container; protect from sunlight and do not expose to tempratures exceeding 50°C. Do not pierce or burn, even after use. Vapours and air form explosive mixtures. Take precautionary measures against static discharges. Use spark-proof tools.

Measures to prevent aerosol and dust generation

Use general or local exhaust ventilation to prevent inhaling vapours and aerosols.

Measures to protect the environment

Avoid release to the environment.

7.1.2. Advice on general occupational hygiene

Refer to instructions on label and regulations for safety and health at work. Consider measures required in Section 8 of this safety data sheet. Use personal protective equipment. Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with skin, eyes and clothes. Do not breathe vapours/mist.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1. Technical measures and storage conditions

Follow safe storage practices for packed compressed gas as described by the Compressed Gas Association or the relevant agency in the country where the product is used. Store in accordance with local regulations. Keep away from food, drink and animal feeding stuffs. Keep out of the reach of children. Keep in cool and well ventilated area. Keep in a dry place. Keep in well closed containers. Keep away from sources of ignition - no smoking. Protect against heat and direct sunlight. Store away from strong acids. Keep away from oxidising substances. Keep away from reducing agents.

7.2.2. Packaging materials

The original container of producer.

7.2.3. Requirements for storage rooms and vessels

Do not store in unlabelled containers.

7.2.4. Storage class

-

7.2.5. Further information on storage conditions

Keep away from incompatible materials (see Section 10).

7.3. Specific end use(s)

Recommendations

See identified uses in Section 1.2.

Industrial sector specific solutions

No specific data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limit values

Name (CAS)	Limit values		Short-term exposure limit		Remarks	Biological Tolerance Values
	ml/m³ (ppm)	mg/m³	ml/m³ (ppm)	mg/m³		
Dimethyl ether (115-10-6)	400	766	500	958		
Aluminium metal inhalable dust (7429-90-5)		10				
Aluminium metal respirable dust (7429-90-5)		4				
Acetone (67-64-1)	500	1210	1500	3620		
n-Hexane (110-54-3)	20	72				
Xylene, o-,m-,p- or mixed isomers (1330-20-7)	50	220	100	441	Sk, BMGV	650 mmol methyl hippuric acid/mol creatinine in urine - Post shift
Aluminium salts, soluble (-)		2				
Aluminium alkyl compounds (-)		2				

8.1.2. Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 482:2012+A1:2015 Workplace exposure. General requirements for the performance of procedures for the measurement of chemical agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values.

8.1.3. DNEL/DMEL values

For components

Name	Type	Exposure route	Exposure frequency	Value	Remark
acetone (67-64-1)	Worker	inhalation	long term (systemic effects)	1210 mg/m³	
acetone (67-64-1)	Worker	inhalation	short term (local effects)	2420 mg/m³	
acetone (67-64-1)	Worker	dermal	long term (systemic effects)	186 mg/kg bw/day	
acetone (67-64-1)	Consumer	inhalation	long term (systemic effects)	200 mg/m³	
acetone (67-64-1)	Consumer	dermal	long term (systemic effects)	62 mg/kg bw/day	

acetone (67-64-1)	Consumer	oral	long term (systemic effects)	62 mg/kg bw/day	
xylene (1330-20-7)	Worker	inhalation	long term (systemic effects)	221 mg/m³	
xylene (1330-20-7)	Worker	inhalation	short term (systemic effects)	442 mg/m³	
xylene (1330-20-7)	Worker	inhalation	long term (local effects)	221 mg/m³	
xylene (1330-20-7)	Worker	inhalation	short term (local effects)	442 mg/m³	
xylene (1330-20-7)	Worker	dermal	long term (systemic effects)	212 mg/kg bw/day	
xylene (1330-20-7)	Consumer	inhalation	long term (systemic effects)	65,3 mg/m³	
xylene (1330-20-7)	Consumer	inhalation	short term (systemic effects)	260 mg/m³	
xylene (1330-20-7)	Consumer	inhalation	long term (local effects)	65,3 mg/m³	
xylene (1330-20-7)	Consumer	inhalation	short term (local effects)	260 mg/m³	
xylene (1330-20-7)	Consumer	dermal	long term (systemic effects)	125 mg/kg bw/day	
xylene (1330-20-7)	Consumer	oral	long term (systemic effects)	12,5 mg/kg bw/day	
dimethyl ether (115-10-6)	Worker	inhalation	long term (systemic effects)	1894 mg/m³	
dimethyl ether (115-10-6)	Consumer	inhalation	long term (systemic effects)	471 mg/m³	
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	Worker	inhalation	long term (systemic effects)	2085 mg/m³	
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	Worker	dermal	long term (systemic effects)	300 mg/kg bw/day	
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	Consumer	inhalation	long term (systemic effects)	447 mg/m³	
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	Consumer	dermal	long term (systemic effects)	149 mg/kg bw/day	
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	Consumer	oral	long term (systemic effects)	149 mg/kg bw/day	
hydrocarbons, C9, aromatics (-)	Worker	inhalation	long term (systemic effects)	150 mg/m³	
hydrocarbons, C9, aromatics (-)	Worker	dermal	long term (systemic effects)	25 mg/kg bw/day	
hydrocarbons, C9, aromatics (-)	Consumer	inhalation	long term (systemic effects)	32 mg/m³	
hydrocarbons, C9, aromatics (-)	Consumer	dermal	long term (systemic effects)	11 mg/kg bw/day	
hydrocarbons, C9, aromatics (-)	Consumer	oral	long term (systemic effects)	11 mg/kg bw/day	
aluminium powder (stabilised) (7429-90-5)	Worker	inhalation	long term (systemic effects)	3,72 mg/m³	
aluminium powder (stabilised) (7429-90-5)	Worker	inhalation	long term (local effects)	3,72 mg/m³	
aluminium powder (stabilised) (7429-90-5)	Consumer	oral	long term (systemic effects)	7,9 mg/kg bw/day	
zinc powder - zinc dust (stabilized) (7440-66-6)	Worker	inhalation	long term (systemic effects)	5 mg/m³	
zinc powder - zinc dust (stabilized) (7440-66-6)	Worker	dermal	long term (systemic effects)	83 mg/kg bw/day	

zinc powder - zinc dust (stabilized) (7440-66-6)	Consumer	inhalation	long term (systemic effects)	2,5 mg/m³	
zinc powder - zinc dust (stabilized) (7440-66-6)	Consumer	dermal	long term (systemic effects)	83 mg/kg bw/day	
zinc powder - zinc dust (stabilized) (7440-66-6)	Consumer	oral	long term (systemic effects)	0,83 mg/kg bw/day	
n-hexane (110-54-3)	Worker	inhalation	long term (systemic effects)	75 mg/m³	
n-hexane (110-54-3)	Worker	dermal	long term (systemic effects)	11 mg/kg bw/day	
n-hexane (110-54-3)	Consumer	inhalation	long term (systemic effects)	16 mg/m³	
n-hexane (110-54-3)	Consumer	dermal	long term (systemic effects)	5,3 mg/kg bw/day	
n-hexane (110-54-3)	Consumer	oral	long term (systemic effects)	4 mg/kg bw/day	

8.1.4. PNEC values

For components

Name	Exposure route	Value	Remark
acetone (67-64-1)	fresh water	10,6 mg/L	
acetone (67-64-1)	marine water	1,06 mg/L	
acetone (67-64-1)	water, intermittent release	21 mg/L	
acetone (67-64-1)	water treatment plant	100 mg/L	
acetone (67-64-1)	fresh water sediment	30,4 mg/kg	dry weight
acetone (67-64-1)	marine water sediment	3,04 mg/kg	dry weight
acetone (67-64-1)	soil	29,5 mg/kg	dry weight
xylene (1330-20-7)	fresh water	0,327 mg/L	
xylene (1330-20-7)	water, intermittent release	0,327 mg/L	fresh water
xylene (1330-20-7)	marine water	0,327 mg/L	
xylene (1330-20-7)	fresh water sediment	12,46 mg/kg	dry weight
xylene (1330-20-7)	marine water sediment	12,46 mg/kg	dry weight
xylene (1330-20-7)	soil	2,31 mg/kg	dry weight
dimethyl ether (115-10-6)	fresh water	0,155 mg/L	
dimethyl ether (115-10-6)	marine water	0,016 mg/L	
dimethyl ether (115-10-6)	water, intermittent release	1,549 mg/L	fresh water
dimethyl ether (115-10-6)	water treatment plant	160 mg/L	
dimethyl ether (115-10-6)	fresh water sediment	0,681 mg/kg	dry weight
dimethyl ether (115-10-6)	marine water sediment	0,069 mg/kg	dry weight
dimethyl ether (115-10-6)	soil	0,045 mg/kg	dry weight
zinc powder - zinc dust (stabilized) (7440-66-6)	fresh water	20,6 µg/l	
zinc powder - zinc dust (stabilized) (7440-66-6)	marine water	6,1 µg/l	
zinc powder - zinc dust (stabilized) (7440-66-6)	water treatment plant	100 µg/l	
zinc powder - zinc dust (stabilized) (7440-66-6)	fresh water sediment	117,8 mg/kg	dry weight
zinc powder - zinc dust (stabilized) (7440-66-6)	marine water sediment	56,5 mg/kg	dry weight
zinc powder - zinc dust (stabilized) (7440-66-6)	soil	45,6 mg/kg	dry weight

8.2. Exposure controls

8.2.1. Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Handle in accordance with good industrial hygiene and safety practice. Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with skin, eyes and clothes. Do not breathe vapours/aerosols. Keep away from foodstuffs, beverages and feed. If technical measures to reduce workers' exposure are not sufficient, and the limit values of hazardous substances in the air are exceeded, it is necessary to use personal protective equipment.

Organisational measures to prevent exposure

Remove all contaminated clothes immediately and wash them before reuse. If this product contains ingredients with exposure limits, personal, workplace atmosphere monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protection.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration.

8.2.2. Personal protective equipment

Eye and face protection

Tight fitting protective goggles (EN 166).

Hand protection

Protective gloves (EN 374). Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. The penetration time is determined by the protective glove manufacturer and must be observed.

Skin protection

Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345).

Respiratory protection

In case of insufficient ventilation wear suitable respiratory protection. If the concentration limit values are exceeded, it is necessary to wear appropriate respiratory protection. Wear suitable protective breathing mask (EN 136) with filter A2-P2 (EN 14387). For dust/gas/ vapor concentrations above the applicable filter limit, in case of oxygen concentrations below 17% or in vague conditions, autonomous self-contained breathing apparatus should be used, according to standard EN 137, EN 138.

Thermal hazards

-

8.2.3. Environmental exposure controls

Substance/mixture related measures to prevent exposure

Implement measures to protect the environment.

Technical measures to prevent exposure

Do not allow product to reach drains, sewage systems or ground water.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

-	**Physical state:**	liquid; aerosol
-	**Colour:**	silver
-	**Odour:**	characteristic

Important health, safety and environmental information

-	**pH**	No information.
-	**Melting point/freezing point**	No information.
-	**Initial boiling point/boiling range**	No information.
-	**Flash point**	No information.
-	**Evaporation rate**	No information.
-	**Flammability (solid, gas)**	No information.
-	**Explosion limits (vol%)**	1,5 – 10,9 vol % (propellant) 2,1 – 13 vol % (acetone) 3,3 – 26,2 vol % (dimethylether)
-	**Vapour pressure**	< 70 hPa at 20 °C
-	**Vapour density**	No information.
-	**Density**	**Density**: 0,884 kg/L at 20 °C (data refers to the liquid portion of the product)
-	**Solubility**	No information.
-	**Partition coefficient**	No information.
-	**Auto-ignition temperature**	No information.
-	**Decomposition temperature**	No information.
-	**Viscosity**	No information.
-	**Explosive properties**	Product is not explosive. However, formation of explosive air/ vapour mixtures are possible.
-	**Oxidising properties**	No information.

9.2. Other information

-	**Weight organic solvents**	646 g/l (VOC) 88 % (VOC)
-	**Remarks:**	

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Stable under recommended transport or storage conditions.

10.2. Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3. Possibility of hazardous reactions

The product is stable under recommended storage and handling conditions. Vapours and air can form flammable or explosive mixtures.

10.4. Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not expose to heat and direct sunlight. Do not store above 50°C.

10.5. Incompatible materials

Strong reducing agents.
Oxidants.
Peroxide. Halogenated compounds. Alkali metal. Ethanolamine. Hydrogen peroxide. Attacks many plastics and rubbers. HF (hydrofluoric acid). Oxygen. Viton.

10.6. Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released. Hazardous combustion products, see Section 5 of the safety data sheet.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

(a) Acute toxicity

Name	Exposure route	Type	Species	Time	Value	Method	Remark
acetone (67-64-1)	inhalation	LC_{50}	rat	4 h	76 mg/l		
acetone (67-64-1)	dermal	LD_{50}	rabbit		> 15800 mg/kg		
acetone (67-64-1)	oral	LD_{50}	rat		5800 mg/kg	OECD 401	
xylene (1330-20-7)	oral	LD_{50}	rat		4300 mg/kg		
xylene (1330-20-7)	dermal	LD_{50}	rabbit		2000 mg/kg		
xylene (1330-20-7)	inhalation	LC_{50}	rat	4 h	21,7 mg/l		
dimethyl ether (115-10-6)	Inhalation (gases)	LC_{50}	rat	4 h	309 mg/l		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	oral	LD_{50}	rat		> 5840 mg/kg bw		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	dermal	LD_{50}	rat	24 h	> 2920 mg/kg bw		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	inhalation (vapours)	LC_{50}	rat	4 h	> 23300 mg/m^3	OECD 403	
hydrocarbons, C9, aromatics (-)	oral	LD_{50}	rat		> 2000 mg/kg		
hydrocarbons, C9, aromatics (-)	dermal	LD_{50}	rat		> 2000 mg/kg		
2-butanone oxime (96-29-7)	oral	LD_{50}	rat		3700 mg/kg		
2-butanone oxime (96-29-7)	dermal	LD_{50}			200 – 2000 mg/kg		
2-butanone oxime (96-29-7)	inhalation	LC_{50}	rat	4 h	20 mg/l		

Additional information: The product is not classified for acute toxicity.

(b) Skin corrosion/irritation

Name	Species	Time	Result	Method	Remark
acetone (67-64-1)	guinea pig		Non-irritant.		
dimethyl ether (115-10-6)			May cause frostbite.		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)			Irritating.		

Additional information: Causes skin irritation.

(c) Serious eye damage/irritation

Name	Species	Time	Result	Method	Remark
acetone (67-64-1)	rabbit		Irritates the eyes. The occurrence of corneal injuries is possible.	OECD 405	
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)			May cause irritation.		

Additional information: Causes serious eye irritation.

(d) Respiratory or skin sensitisation

Name	Exposure route	Species	Time	Result	Method	Remark
acetone (67-64-1)	-	guinea pig		Non sensitising.	OECD 406	
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	-			Not classified.		

Additional information: It contains at least one ingredient that can cause sensitisation. Can cause allergic reaction.

(e) (Germ cell) mutagenicity

Name	Type	Species	Time	Result	Method	Remark
For product				The chemical is not classified as mutagenic.		
acetone (67-64-1)		Bacteria		The tests did not show mutagenic effects		
acetone (67-64-1)		Cell: Mammalian-Animal		The tests did not show mutagenic effects		
acetone (67-64-1)	in-vitro mutagenicity			Negative.	OECD 473	Chromosome aberration assay
acetone (67-64-1)	in-vitro mutagenicity	Cell: Mammalian-Animal		Negative.	OECD 476	
acetone (67-64-1)	in-vitro mutagenicity	Bacteria		Negative.	OECD 471	
acetone (67-64-1)	in-vivo mutagenicity	mouse		Negative.	The micronucleus test	
dimethyl ether (115-10-6)				The chemical is not classified as mutagenic.		
dimethyl ether (115-10-6)	in-vitro mutagenicity			Negative.	OECD 471	Ames test
dimethyl ether (115-10-6)	in-vitro mutagenicity	Human (lymphocytes)		Negative.	cytogenetic test	OECD 473
dimethyl ether (115-10-6)	in-vivo mutagenicity	*Drosophila melanogaster*		Negative.	OECD 477	
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	in-vivo mutagenicity			Negative.		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	in-vitro mutagenicity			Negative.		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)				Negative.		

(f) Carcinogenicity

Name	Exposure route	Type	Species	Time	Value	Result	Method	Remark
For product						The chemical is not classified as carcinogenic.		
acetone (67-64-1)						Animal testing did not show any carcinogenic effects.		
acetone (67-64-1)	dermal		mouse			negative		
dimethyl ether (115-10-6)						Substance is not classified as carcinogenic.		
dimethyl ether (115-10-6)	inhalation (vapours)	NOAEL	rat	2 years	47 mg/l	Animal testing did not show any carcinogenic effects.	OECD 453	
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)						Substance is not classified as carcinogenic.		

(g) Reproductive toxicity

Name	Reproductive toxicity type	Type	Species	Time	Value	Result	Method	Remark
For product						The chemical is not classified as toxic for reproduction.		
acetone (67-64-1)	Reproductive toxicity					Animal testing did not show any effects on fertility.		
acetone (67-64-1)	Teratogenicity		rat			Negative.	OECD 414	
dimethyl ether (115-10-6)	Reproductive toxicity	inhalation	rat		47 mg/L	Animal testing did not show any effects on fertility.	OECD 452	
dimethyl ether (115-10-6)	Maternal toxicity	NOAEL	rat		5000 ppm			Inhalation
dimethyl ether (115-10-6)	Teratogenicity	NOAEL	rat		40000 ppm			Inhalation
dimethyl ether (115-10-6)	Developmental toxicity	NOAEL	rat		40000 ppm			Inhalation
dimethyl ether (115-10-6)	-	NOAEL	rat		20000 ppm		OECD 414	inhalation (vapor), embryo-fetal development
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	Reproductive toxicity		rat			Negative.		
n-hexane (110-54-3)	Reproductive toxicity					Suspected of damaging fertility.		

Summary of evaluation of the CMR properties

The product is not classified as carcinogenic, mutagenic or toxic for reproduction.

(h) STOT-single exposure

Name	Exposure route	Type	Species	Time	Organ	Value	Result	Method	Remark
acetone (67-64-1)	-	-					May cause drowsiness or dizziness.		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	inhalation	-			central nervous system		May cause drowsiness or dizziness.		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	oral	-					May cause irritation of the digestive tract.		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	inhalation	-					Symptoms: mucous membrane irritation.		high vapours concentrations
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	inhalation	-					Symptoms: nausea, unconsciousness.		high vapours concentrations

Additional information: May cause drowsiness or dizziness.

(i) STOT-repeated exposure

Name	Exposure route	Type	Species	Time	Organ	Value	Result	Method	Remark
acetone (67-64-1)	dermal	-					Repeated exposure may cause dry and cracked skin.		
acetone (67-64-1)	Repeated dose toxicity	NOAEL	rat	90 days	oral	900 mg/kg bw/day			
acetone (67-64-1)	Repeated dose toxicity	NOAEC	rat			22500 mg/m^3			inhalation
acetone (67-64-1)	inhalation	-	human				Headache, dizziness, fatigue, nausea and vomiting.		excessive exposure to vapors
acetone (67-64-1)	dermal	-	human				Repeated or prolonged exposure may cause dermatitis.		
acetone (67-64-1)	inhalation	-	human		Nasal inner lining		Symptoms: inflammation of the mucous membranes.		
dimethyl ether (115-10-6)	Repeated dose toxicity	NOEL	rat	2 years		47 mg/L		OECD 452	inhalation

Additional information: STOT RE (repeated exposure): Not classified.

(j) Aspiration hazard

Name	Result	Method	Remark
acetone (67-64-1)	Aspiration hazard: Not Classified.		
dimethyl ether (115-10-6)	Aspiration hazard: Not Classified.		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	May be fatal if swallowed and enters airways.		
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	Aspiration into the lungs can cause lung damage.		The exposed person should be kept under medical surveillance for 48 hours.

Additional information: May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Acute (short-term) toxicity

For components

Substance (CAS Nr.)	Type	Value	Exposure time	Species	Organism	Method	Remark
acetone (67-64-1)	LC_{50}	5540 mg/L	96 h	fish	*Oncorhynchus mykiss*		
	LC_{50}	11000 mg/L	96 h	fish	*Alburnus alburnus*		
	LC_{50}	8800 mg/L	48 h	crustacea	*Daphnia magna*		
	NOEC	430 mg/L	96 h	algae			
	EC_{12}	1000 mg/L	30 min	bacteria	Activated sludge	OECD 209	
xylene (1330-20-7)	EC_{50}	165 mg/L	48 h	crustacea	*Daphnia*		
dimethyl ether (115-10-6)	LC_{50}	> 4,1 mg/L	96 h	fish	*Poecilia reticulata*		Semi-Static system
	EC_{50}	> 4,4 mg/L	48 h	crustacea	*Daphnia magna*		static test
	LC_{50}	755,5 mg/L	48 h	*Daphnia*		ECOSAR	
	EC_{50}	154,9 mg/L	96 h	algae		ECOSAR	
	EC_{10}	> 1600 mg/L		bacteria	*Pseudomonas putida*		static test
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	ErL_{50}	10 – 30 mg/L	72 h	algae	*Pseudokirchneriella subcapitata*	OECD 201	
	EbL50	10 – 30 mg/L	72 h	algae	*Pseudokirchneriella subcapitata*	OECD 201	
	EL_{50}	3 mg/L	48 h	crustacea	*Daphnia magna*	OECD 202	
	LL_{50}	> 13,4 mg/L	96 h	fish	*Oncorhynchus mykiss*	OECD 203	
	NOELR	6,3 mg/L	72 h	algae	*Pseudokirchneriella subcapitata*	OECD 201	
hydrocarbons, C9, aromatics (-)	LC_{50}	1 – 10 mg/L	48 h	crab	*Daphnia*		

12.1.2. Chronic (long-term) toxicity

For components

Substance (CAS Nr.)	Type	Value	Exposure time	Species	Organism	Method	Remark
acetone (67-64-1)	NOEC	2212 mg/l	28 days	crustacea	*Daphnia pulex*		reproduction
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	NOELR	1 mg/l	21 days	crustacea	*Daphnia magna*	OECD 211	
	NOELR	1,53 mg/l	28 days	fish	*Oncorhynchus mykiss*	QSAR Petrotox	

12.2. Persistence and degradability

12.2.1. Abiotic degradation, physical- and photo-chemical elimination

For components

Substance (CAS Nr.)	Environment	Type / Method	Half Time	Evaluation	Method	Remark
acetone (67-64-1)	water			Degraded by hydrolysis.		

12.2.2. Biodegradation

For components

Substance (CAS Nr.)	Type	Rate	Time	Evaluation	Method	Remark
acetone (67-64-1)	biodegradability	91 %	28 days	readily biodegradable	OECD 301 B	
acetone (67-64-1)	BOD	1900 mg/g	5 days			
acetone (67-64-1)	COD	2100 mg/g				
dimethyl ether (115-10-6)	aerobic	5 %	28 days	not readily biodegradable	OECD 301 D	activated sludge
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics (-)	biodegradability	98 %		readily biodegradable	OECD 301 F	

12.3. Bioaccumulative potential

12.3.1. Partition coefficient

For components

Substance (CAS Nr.)	Media	Value	Temperature	pH	Concentration	Method
acetone (67-64-1)	log Kow	-0,24				

12.3.2. Bioconcentration factor (BCF)

For components

Substance (CAS Nr.)	species	Organism	Value	Duration	Evaluation	Method	Remark
acetone (67-64-1)	BCF		< 10				

12.4. Mobility in soil

12.4.1. Known or predicted distribution to environmental compartments

No information.

12.4.2. Surface tension

No information.

12.4.3. Adsorption/Desorption

For components

Substance (CAS Nr.)	Type	Criterion	Value	Evaluation	Method	Remark
dimethyl ether (115-10-6)	Soil			Moderate mobility in soil.		

12.5. Results of PBT and vPvB assessment

No evaluation.

12.6. Other adverse effects

No information.

12.7. Additional information

For product

Toxic to aquatic life with long lasting effects.
Water hazard class (WGK): 3 (Self-assessment), very hazardous for water.
Avoid release to the environment.

For components

Substance: acetone

Does not bioaccumulate.
The substance is highly volatile.
This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Avoid release to the environment.

Substance: dimethyl ether

Bioaccumulation is not expected.
This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

Substance: hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

Substance is a UVCB.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic enviromnent.
This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

13.1.1. Product / Packaging disposal

Waste chemical

Dispose of in accordance with applicable waste disposal regulation. Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste. Avoid release to the environment. Product and container must be disposed of safely.

Waste codes / waste designations according to LoW

16 05 04* - gases in pressure containers (including halons) containing dangerous substances

Packaging

Dispose of in accordance with applicable waste disposal regulation. Deliver completely emptied containers to approved waste disposal authorities. Uncleaned containers should not be perforated, cut or welded. Pressurized container. Do not pierce or burn, even after use.

Waste codes / waste designations according to LoW

15 01 11* - metallic packaging containing a dangerous solid porous matrix (for example asbestos), including empty pressure containers

13.1.2. Waste treatment-relevant information

-

13.1.3. Sewage disposal-relevant information

-

13.1.4. Other disposal recommendations

-

SECTION 14. TRANSPORT INFORMATION

14.1. UN number

UN 1950

14.2. UN proper shipping name

AEROSOLS

IMDG name: AEROSOLS (zinc powder - zinc dust (stabilized))

14.3. Transport hazard class(es)

2

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Additional labeling: ENVIRONMENTALLY HAZARDOUS

IMDG: MARINE POLLUTANT

14.6. Special precautions for user

IATA:
PCA Excepted quantities: E0
PCA Limited quantities: Y203
PCA limited quantity max net quantity: 30kgG
PCA packing instructions: 203
PCA max net quantity: 75kg
CAO packing instructions: 203
CAO max net quantity: 150kg
Special provisions: A145, A167, A802
ERG code: 10L

Limited quantities

1 L

Tunnel restriction code

(D)

IMDG EmS

F-D, S-U

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Goods may not be carried in bulk in bulk containers, containers or vehicles.

SECTION 15. REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2015/830)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

15.1.1. Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Not applicable.

15.2. Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16. OTHER INFORMATION

Indication of changes

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Abbreviations and acronyms

ATE - Acute Toxicity Estimate
ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CEN - European Committee for Standardisation
C&L - Classification and Labelling
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CAS# - Chemical Abstracts Service number
CMR - Carcinogen, Mutagen, or Reproductive Toxicant
CSA - Chemical Safety Assessment
CSR - Chemical Safety Report
DMEL - Derived Minimal Effect Level
DNEL - Derived No Effect Level
DPD - Dangerous Preparations Directive 1999/45/EC
DSD - Dangerous Substances Directive 67/548/EEC
DU - Downstream User
EC - European Community
ECHA - European Chemicals Agency
EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC - European Economic Community
EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
EN - European Standard
EQS - Environmental Quality Standard
EU - European Union
Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry
JRC - Joint Research Centre
Kow - octanol-water partition coefficient
LC_{50} - Lethal Concentration to 50 % of a test population
LD_{50} - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (see http://ec.europa.eu/environment/waste/framework/list.htm)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment

(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet
SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

Key literature references and sources for data

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List of relevant H phrases

H220 Extremely flammable gas.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H228 Flammable solid.
H261 In contact with water releases flammable gases.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer .
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure .
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.

The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under Section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.