

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixture: Hazardous ingredients

Name	Product Identifier	%	Classification (GHS-US)
1-methyl-2-pyrrolidone	CAS No. 872-50-4	<5%	Flam Liq 4, H227 Skin Irrit 2, H315 Eye Irrit 2A, H319 Repr 2, H361 STOT SE 3, H336
2-methylisothiazol-3(2H)-one	CAS No. 2682-20-4	<0.25%	Not classified
2-dimethylaminoethanol	CAS no. 108-01-0	<1.5%	Flam Lq 4, H226 Acute Tox 4 (Oral), H302 Acute Tox 4 (Dermal), H312 Acute Tox 4 (Inhalation), H332 Skin Corr 1B, H314
1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one	CAS No. 2634-33-5	<0.25%	Acute Tox 4 (Oral), H302 Skin Irrit 2, H315 Eye Dam 1, H318 Skin Sens 1, H317 Aquatic Acute 1, H400

SECTION 4: First aid measures

4.1 Description of first aid measures

First aid measures general : Never give anything by mouth to an unconscious person. If exposed or concerned, get medical advice/attention.

First aid measures after inhalation : Allow victim to get fresh air. Allow victim to rest.

First aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs, get medical advice/attention.

First aid measures eye contact : Rinse with water for several minutes. Remove contact lenses. Continue rinsing. If eye irritation persists, get medical advice/attention.

First aid measures ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Suspected of damaging fertility or the unborn child

Symptoms/injuries after eye contact : Causes serious eye irritation

Symptoms/injuries after skin contact : Causes skin irritation

4.3 Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Foam. Dry Powder. Carbon Dioxide. Water Spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream

5.2 Special hazards arising from the substance or mixture

Reactivity : No reliable data available

5.3 Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter area without proper protective equipment, including respirator.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Emergency Procedures : Evacuate unnecessary personnel

6.1.2 For emergency responders

Protective equipment : Equip cleanup crew with proper protection

Emergency Procedures : Ventilate area

6.2 Environmental Precautions

Prevent from entering sewers or public waters. Notify authorities if liquid enters sewers or public waters.

6.3 Methods and material for containment and cleanup

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4 Reference to other sections

See heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Additional hazards when processed : Good ventilation of the workplace required
Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent accumulation of vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Handling temperature : 5 - 30 degrees C
Hygiene measures : Wash hands and other exposed areas with mild soap before eating, drinking or smoking, and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures : No additional information
Storage conditions : Keep container closed when not in use. Protect against frost and freezing.
Incompatible products : Strong bases. Strong acids.
Incompatible materials : Sources of ignition
Maximum storage period : 6 months
Storage temperature : 10 - 30 degrees C

7.3 Specific end use(s)

No additional information.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

No additional information

8.2 Exposure controls

Personal protective equipment : Avoid all unnecessary exposure
Hand protection : Wear protective gloves
Eye protection : Wear chemical goggles or safety glasses
Skin and body protection : Wear suitable protective clothing
Respiratory protection : Wear appropriate mask
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1 Information based on basic and physical chemical properties

Physical state : Liquid

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Color	: White
Odor	: Little to no odor, Slightly amine like
Odor threshold	: No data available
pH	: 7 - 8
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 0 degrees C
Freezing point	: 0 degree C
Boiling point	: 100 degrees C
Flash Point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 2.3 kPa
Relative vapor density at 20 degrees C	: No data available
Relative density	: No data available
Specific gravity / density	: 1.06 g/cm3
Percent solids	: 39% - 41%
Solubility	: Soluble in water
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 30 - 200 mPa.s
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2 Other information

No additional information

SECTION 10: Stability and reactivity

10.1 Reactivity

No reliable data available

10.2 Chemical stability

Stable under normal conditions

10.3 Possibility of hazard reactions

Not established

10.4 Conditions to avoid

Direct sunlight. Freeze/thaw conditions. Extreme temperatures.

10.5 Incompatible materials

Strong acids. Strong bases.

10.6 Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity : Not classified

1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)

ATE US (oral)

500.0000000000 mg/kg body weight

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1-methyl-2-pyrrolidone (872-50-4)

LD 50 oral rat	3914 mg/kg (Rat; equivalent or similar to OECD 401; Literature study; 4150 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	7000 mg/kg (Rat; Literature study)
LD50 dermal rabbit	8000 mg/kg (Rabbit; equivalent or similar to OECD 402; >5000 mg/kg bodyweight; Rabbit; Experimental value)
LC50 inhalation rat	<5.1 mg/l/4h (Rat; Experimental value)
ATE US (oral)	3914.0000000000 mg/kg bodyweight
ATE US (dermal)	7000.0000000000 mg/kg bodyweight

Skin corrosion/irritation	: Causes skin irritation pH 7 - 8
Serious eye damage/irritation	: Causes serious eye irritation pH 7 - 8
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging fertility or the unborn child
Specific organ target toxicity (single exp)	: Not classified
Specific organ target toxicity (rep exp)	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Based on data, the classification criteria are not met
Symptoms/injuries after skin contact	: Causes skin irritation

SECTION 12: Ecological information

12.1 Toxicity

1-methyl-2-pyrrolidone (872-50-4)	
LC50 fish 1	3048 mg/l (96h; Salmo gairdneri (Oncorhynchus mykiss); cool water)
EC50 Daphnia 1	4897 mg/l (48h; Daphnia magna)
LC50 fish 2	832 mg/l (96h; Lepomis macrochirus; warm water)
EC50 Daphnia 2	4655 mg/l (Gammarus sp.)
Threshold limit algae 1	> 500 mg/l (Scenedesmus subspicatus)
Threshold limit algae 2	600.5 mg/l (72h; Desmodesmus subspicatus; Growth rate)

12.2 Persistence and degradability

IronBond 111 Emulsion	
Persistence and degradability	Not established

1-methyl-2-pyrrolidone (872-50-4)

Persistence and degradability	Readily biodegradable in water. Biodegradable in soil. Photodegradation in air.
Biochemical Oxygen Demand (BOD)	1.07g O ₂ /g substance
Chemical Oxygen Demand (COD)	1.56g O ₂ /g substance
ThOD	1.9g O ₂ /g substance
BOD (% of ThOD)	0.56% ThOD

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12.3 Bioaccumulative potential

IronBond 111 Emulsion	
Bioaccumulative potential	Not established
1-methyl-2-pyrrolidone (872-50-4)	
Log Pow	-0.73 - -0.46 (Experimental value)
Bioaccumulative potential	Not bioaccumulative

12.4 Mobility in soil

1-methyl-2-pyrrolidone (872-50-4)	
Surface tension	0.407 N/m

12.5 Other adverse effects

Effect on ozone layer	: No additional information available
Effect on global warming	: No known ecological damage caused by this product
Other information	: Avoid release to the environment

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment

SECTION 14: Transport information

In accordance with DOT. Not regulated for transportation.

14.1 Additional information

No supplementary information

ADR

Transport document description

Transport by sea

Transport document description

Air transport

Transport document description

SECTION 15: Regulatory information

15.1 US Federal Regulations

The components of this product are in compliance with the requirements of the Toxic Substances Control Act (TSCA). One of the components of this product is exempt from the TSCA Inventory listing requirements under the provisions of the TSCA Polymer Exemption (PE); 40 CFR §732.250. According to PE rules, the importer of record is required to submit, during January of the year following the first import of an exempted polymer, a onetime notification to EPA of the number of polymer exemptions used for the first time in the previous calendar year.

All components of this product are listed, or excluded from listing, on the US Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for 1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (CAS No. 2634-33-5).

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

1-methyl-2-pyrrolidone (872-50-4) listed on United States SARA Section 313.

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15.1 International Regulations

CANADA

One of the components of this product is listed on the Canadian DSL (Domestic Substances List).

EU-Regulations

One of the components of this product is listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2 US State Regulations

California Proposition 65 - This product contains, or may contain, trace quantities of a substance known to the State of California to cause cancer and/or reproductive toxicity.

1-methyl-2-pyrrolidone (872-50-4)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
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SECTION 16: Other information

Acute Tox 4 (Dermal)	Acute toxicity (dermal) category 4
Acute Tox 4 (Inhalation)	Acute toxicity (inhalation) category 4
Acute Tox 4 (Oral)	Acute toxicity (oral) category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Eye Dam 1	Serious eye damage/irritation Category 1
Eye Irrit 2A	Serious eye damage/irritation Category 2A
Flam Liq 3	Flammable liquids category 3
Flam Liq 4	Flammable liquids category 4
Repr 2	Reproductive toxicity category 2
Skin Corr 1B	Skin corrosion/irritation Category 1B
Skin Irrit 2	Skin corrosion/irritation Category 2
Skin Sens 1	Skin sensitization category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H226	Flammable liquid and vapor
H227	Combustible liquid
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
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
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child
H400	Very toxic to aquatic life

This information is based on current knowledge and is intended only to describe the product for the purposes of health, safety and environmental requirements only.