

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



Uresolve 411

Version  
1.0

Revision Date:  
10/11/2024

SDS Number:  
70MDGM661380

Date of first issue:  
10/11/2024

## SECTION 1. IDENTIFICATION

Product name : Uresolve 411

Product number : 661380

### Manufacturer or supplier's details

Company : Versum Materials US, LLC 8555 South River Parkway Tempe,  
AZ 85284-2601 Exporter EIN No. 47-5632014  
www.emdgroup.com/electronics Telephone: 800 837 2724

Emergency telephone : 1-800-424-9300 CHEMTREC (USA) 1-703-741-5970  
CHEMTREC (International) 24 Hours/day; 7 Days/week

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

Recommended use : Polymer Remover

## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 2

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 3

Skin corrosion : Category 1

Serious eye damage : Category 1

Reproductive toxicity : Category 1B

Specific target organ toxicity : Category 1 (Central nervous system, optic nerve)  
- single exposure

Specific target organ toxicity : Category 3 (Respiratory system)  
- single exposure

### GHS label elements

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Hazard pictograms

:



Signal Word

:

Danger

Hazard Statements

:

H225 Highly flammable liquid and vapor.  
H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.  
H360 May damage fertility or the unborn child.  
H370 Causes damage to organs (Central nervous system, optic nerve).

Precautionary Statements

:

## Prevention:

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P260 Do not breathe mist or vapors.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

## Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.  
P362 Take off contaminated clothing and wash before reuse.

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## Storage:

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

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

## Disposal:

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

## Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
Methyl alcohol	67-56-1	$\geq 70 - < 90$
Methyl-2-pyrrolidinone, 1-	872-50-4	$\geq 20 - < 30$
Potassium Hydroxide	1310-58-3	$\geq 1 - < 5$

Actual concentration is withheld as a trade secret

## SECTION 4. FIRST AID MEASURES

General advice : First aider needs to protect himself.  
Show this material safety data sheet to the doctor in attendance.

If inhaled : fresh air. Immediately call in physician.  
If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.  
Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
Call a physician immediately.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Seek medical treatment immediately.  
Remove contact lenses.

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If swallowed	: fresh air. Make victim drink ethanol (e.g. 1 drinking glass of a 40% alcoholic beverage). Call a doctor immediately (mention methanol ingestion). Only in exceptional cases, if no medical care is available within one hour, induce vomiting (only in fully conscious persons) and make victim drink ethanol again (approx. 0.3 ml of a 40% alcoholic beverage/kg body weight/hour). Do not attempt to neutralise. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If accidentally swallowed obtain immediate medical attention. Medical care must emphasize the control of acidosis and the use of intravenous bicarbonate has been lifesaving. Evidence is good that treatment of methanol absorption is enhanced through the administration of ethanol, which should be given to produce a blood level of at least 0.1%. Ethanol diminishes the production of toxic metabolites of methanol. Blood methanol level of 50 mg/100mL is an indication for hemodialysis, which has improved the prognosis of methanol intoxication. Methanol is often confused with beverage alcohol (ethylalcohol). Care must cause of methanol poisoning. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Prevent aspiration of vomit. Turn victim's head to the side.
Most important symptoms and effects, both acute and delayed	: Irritation and corrosion Cough Shortness of breath Risk of blindness!
Notes to physician	: Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: Water Dry powder Foam Carbon dioxide (CO2)
Unsuitable extinguishing media	: For this substance/mixture no limitations of extinguishing agents are given.
Specific hazards during fire fighting	: Combustible.

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Vapors are heavier than air and may spread along floors.  
Pay attention to flashback.  
Forms explosive mixtures with air at ambient temperatures.

Vapors are heavier than air and may spread along floors.  
Pay attention to flashback.  
Forms explosive mixtures with air at ambient temperatures.  
Development of hazardous combustion gases or vapours possible in the event of fire.

Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.  
Suppress (knock down) gases/vapors/mists with a water spray jet.  
Cool closed containers exposed to fire with water spray.

Special protective equipment for fire-fighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel:  
Do not breathe vapors, aerosols.  
Avoid substance contact.  
Ensure adequate ventilation.  
Keep away from heat and sources of ignition.  
Evacuate the danger area, observe emergency procedures, consult an expert.  
Advice for emergency responders:  
Protective equipment see section 8.  
If possible, stop flow of product.

Environmental precautions : Do not flush into surface water or sanitary sewer system.  
Prevent further leakage or spillage if safe to do so.  
Risk of explosion.

Methods and materials for containment and cleaning up : Observe possible material restrictions (see sections 7 and 10).  
Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

## SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

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Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms. Emergency showers and eye wash stations should be readily accessible. Empty containers may contain residue which can be dangerous – do not pressurize, cut, weld, drill, grind and also do not expose such containers to heat, flame, sparks, or other ignition sources. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Observe label precautions.

Conditions for safe storage : Store in original container.

Further information on storage conditions : Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. Risks from decomposition products: see section 10

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Methyl alcohol	67-56-1	TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
		ST	250 ppm 325 mg/m3	NIOSH REL
		TWA	200 ppm 260 mg/m3	NIOSH REL
		TWA	200 ppm 260 mg/m3	OSHA Z-1
		TWA	200 ppm 260 mg/m3	OSHA P0
		STEL	250 ppm 325 mg/m3	OSHA P0
Methyl-2-pyrrolidinone, 1-	872-50-4	TWA	15 ppm 60 mg/m3	US WEEL
		STEL	30 ppm 120 mg/m3	US WEEL
Potassium Hydroxide	1310-58-3	C	2 mg/m3	ACGIH

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		C	2 mg/m3	NIOSH REL
		C	2 mg/m3	OSHA P0

## Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Methyl alcohol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI
Methyl-2-pyrrolidinone, 1-	872-50-4	5-Hydroxy-N-methyl-2-pyrrolidone	Urine	End of shift (As soon as possible after exposure ceases)	100 mg/l	ACGIH BEI

**Engineering measures** : Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7

## Personal protective equipment

**Respiratory protection** : Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.  
Respirator with filter for organic vapor  
Wear appropriate respirator when ventilation is inadequate.  
required when vapours/aerosols are generated.

Hand protection

**Remarks** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is nec-

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		essary. Gloves (alkali-resistant). Solvent-resistant gloves Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk as- sessment indicates this is necessary. Gloves (alkali- resistant).
Protective measures	:	Wear suitable protective clothing, gloves and eye/face pro- tection.
Eye protection	:	Tightly fitting safety goggles
Body Protection	:	Rubber or plastic boots Flame retardant protective clothing If there is any possibility of direct contact or exposure, wear chemical resistant protective clothing.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with sub- stance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	blue
Odor	:	Fishy.
Odor Threshold	:	No data available
pH	:	> 11.5
Melting point/range	:	
Boiling point/boiling range	:	149 °F / 65 °C
Flammability (solid, gas)	:	No data available
Decomposition temperature	:	No data available
Flash point	:	18 °C Method: Pensky-Martens closed cup



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Auto-ignition temperature : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : 131 hPa

Relative vapor density : No data available

Relative density : (water = 1) 0.87

Density : 0.87 g/cm<sup>3</sup>

Solubility(ies)  
Water solubility : Miscibility with water

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

Evaporation rate : No data available

Viscosity : No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity : Vapors may form explosive mixture with air.

Chemical stability : No data available

Possibility of hazardous reactions : no information available

Conditions to avoid : Warming.

Incompatible materials : Acids  
Oxidizing agents

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Hazardous decomposition products : Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)  
Aldehydes  
Flammable hydrocarbon fragments.  
Nitrogen oxides (NO<sub>x</sub>)  
in the event of fire: See section 5.  
in the event of fire: See section 5.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Inhalation  
Eye contact  
Skin contact

### Acute toxicity

#### Product:

Acute oral toxicity : Acute Toxicity Estimate (ATE): 138.03 mg/kg  
Method: Calculation method

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute inhalation toxicity : Acute Toxicity Estimate (ATE): 4.25 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Calculation method

Symptoms: mucosal irritations, Cough, Shortness of breath,  
Possible damages: damage of respiratory tract

Acute dermal toxicity : Acute Toxicity Estimate (ATE): 424.52 mg/kg  
Method: Calculation method

Symptoms: Causes severe burns.

#### Components:

##### Methyl alcohol:

Acute oral toxicity : LD<sub>50</sub> (Rat): 100 mg/kg  
Remarks: (ECHA)

Acute inhalation toxicity : LC<sub>50</sub> (Rat): 3 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Converted acute toxicity point estimate  
Remarks: (ECHA)

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Acute dermal toxicity : LD50 (Rabbit): 300 mg/kg  
Method: Converted acute toxicity point estimate  
  
(Human): Method: Expert judgement  
Remarks: The component/mixture is toxic after single contact with skin.  
(ECHA)

## **Methyl-2-pyrrolidinone, 1-:**

Acute oral toxicity : LD50 (Rat, male and female): 4,150 mg/kg  
Method: OECD Test Guideline 401  
Remarks: (ECHA)

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.1 mg/l  
Exposure time: 4 h  
Test atmosphere: aerosol  
Method: OECD Test Guideline 403  
GLP: yes  
Remarks: (ECHA)  
  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: (ECHA)  
  
Assessment: The substance or mixture has no acute dermal toxicity

## **Potassium Hydroxide:**

Acute oral toxicity : LD50 (Rat, male): 333 mg/kg  
Method: OECD Test Guideline 425  
Remarks: (ECHA)  
  
Acute inhalation toxicity : Assessment: Toxic effects cannot be excluded  
  
Acute dermal toxicity : Assessment: Toxic effects cannot be excluded

## **Skin corrosion/irritation**

### **Product:**

No data available

### **Components:**

#### **Methyl alcohol:**

Species : Rabbit  
Result : No skin irritation  
Remarks : (ECHA)

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## **Methyl-2-pyrrolidinone, 1-:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Skin irritation  
GLP : yes  
Remarks : (ECHA)

## **Potassium Hydroxide:**

Species : In vitro study  
Method : OECD Test Guideline 431  
Result : Causes severe burns.  
Remarks : (ECHA)

## **Serious eye damage/eye irritation**

### **Product:**

Remarks : Risk of blindness!

### **Components:**

#### **Methyl alcohol:**

Species : Rabbit  
Result : No eye irritation  
Remarks : (ECHA)

#### **Methyl-2-pyrrolidinone, 1-:**

Species : Rabbit  
Result : irritating  
Method : OECD Test Guideline 405  
Remarks : (ECHA)

#### **Potassium Hydroxide:**

Species : Rabbit  
Result : Causes burns.  
Method : OECD Test Guideline 405

## **Respiratory or skin sensitization**

### **Product:**

No data available

### **Components:**

#### **Methyl alcohol:**

Test Type : Sensitisation test:  
Routes of exposure : Skin  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : Does not cause skin sensitization.

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Remarks : (ECHA)

## **Methyl-2-pyrrolidinone, 1-:**

Routes of exposure : Skin  
Species : Mouse  
Method : OECD Test Guideline 429  
Result : Not a skin sensitizer.  
Remarks : (ECHA)

Test Type : Patch test:  
Routes of exposure : Skin  
Species : Human  
Result : negative  
Remarks : (IUCLID)

## **Potassium Hydroxide:**

Test Type : Sensitisation test:  
Routes of exposure : Skin  
Species : Guinea pig  
Result : negative  
Remarks : (ECHA)

## **Germ cell mutagenicity**

### **Product:**

No data available

### **Components:**

#### **Methyl alcohol:**

Genotoxicity in vitro : Test Type: Ames test  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: (ECHA)

Test Type: In vitro mammalian cell gene mutation test  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: (ECHA)

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse (male and female)  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: (ECHA)

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## **Methyl-2-pyrrolidinone, 1-:**

Genotoxicity in vitro : Test Type: Ames test  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes  
Remarks: (ECHA)

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes  
Remarks: (ECHA)

Test Type: unscheduled DNA synthesis assay  
Test system: mammalian cells  
Method: OECD Test Guideline 482  
Result: negative  
GLP: yes  
Remarks: (ECHA)

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse (male and female)  
Cell type: Bone marrow  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative  
GLP: yes  
Remarks: (ECHA)

Test Type: Chromosome aberration test  
Species: Chinese hamster (male and female)  
Cell type: Bone marrow  
Application Route: Oral  
Method: OECD Test Guideline 475  
Result: negative  
GLP: yes  
Remarks: (ECHA)

## **Potassium Hydroxide:**

Genotoxicity in vitro : Test Type: Ames test  
Test system: Escherichia coli/Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Result: negative  
Remarks: (ECHA)

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## Carcinogenicity

### **Product:**

No data available

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

## Reproductive toxicity

### **Product:**

No data available

### **Components:**

#### **Methyl-2-pyrrolidinone, 1-:**

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

## STOT-single exposure

### **Product:**

No data available

### **Components:**

#### **Methyl alcohol:**

Target Organs : Central nervous system, optic nerve  
Assessment : Causes damage to organs.

#### **Methyl-2-pyrrolidinone, 1-:**

Target Organs : Respiratory system  
Assessment : May cause respiratory irritation.

## STOT-repeated exposure

### **Product:**

No data available

### **Components:**

#### **Methyl alcohol:**

Species : Rat, male and female  
NOAEL : 6.66 mg/l  
Application Route : Inhalation  
Test atmosphere : vapour  
Exposure time : 28 d

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Number of exposures : N11.00019274  
Method : OECD Test Guideline 412  
Remarks : Subacute toxicity

Species : Rat, male and female  
NOAEL : 0.13 mg/l  
LOAEL : 1.3 mg/l  
Application Route : Inhalation  
Exposure time : 365 d  
Number of exposures : N11.00019274  
Method : OECD Test Guideline 453

## Aspiration toxicity

### **Product:**

No data available

## Further information

### **Product:**

Remarks : Other dangerous properties can not be excluded.  
This substance should be handled with particular care.  
The product has not been tested. The information is derived from the properties of the individual components.

## SECTION 12. ECOLOGICAL INFORMATION

### **Ecotoxicity**

#### Components:

##### **Methyl alcohol:**

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 15,400 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Method: US-EPA  
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 18,260 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 202  
Remarks: (ECHA)

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 22,000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201  
Remarks: (ECHA)



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Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): 7,900 mg/l  
Exposure time: 200 h  
Remarks: (External SDS)

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h  
Analytical monitoring: yes  
Method: OECD Test Guideline 209  
Remarks: (ECHA)

## **Methyl-2-pyrrolidinone, 1-:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 500 mg/l  
Exposure time: 96 h  
Analytical monitoring: yes  
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l  
Exposure time: 24 h  
Remarks: (ECHA)

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l  
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 12.5 mg/l  
End point: reproduction rate  
Exposure time: 21 d  
Test Type: semi-static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 211  
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 600 mg/l  
Exposure time: 0.5 h  
Method: ISO 8192

## **Potassium Hydroxide:**

### **Ecotoxicology Assessment**

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

### **Persistence and degradability**

#### **Components:**

##### **Methyl alcohol:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 99 %  
Exposure time: 30 d  
Method: OECD Test Guideline 301D

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Biochemical Oxygen Demand (BOD) : 600 - 1,120 mg/g  
Incubation time: 5 d  
Remarks: (IUCLID)

Chemical Oxygen Demand (COD) : 1,420 mg/g  
Remarks: (IUCLID)

BOD/COD : BOD/COD: 76 %  
Remarks: (IUCLID)

ThOD : 1,500 mg/g  
Remarks: (Lit.)

BOD/ThOD : 76 %  
Remarks: Closed Bottle test (IUCLID)

## **Methyl-2-pyrrolidinone, 1-:**

Biodegradability : Inoculum: activated sludge  
Concentration: 100 mg/l  
Result: Readily biodegradable.  
Biodegradation: 73 %  
Exposure time: 28 d

Biochemical Oxygen Demand (BOD) : 1,100 mg/g  
Incubation time: 5 d  
Remarks: (Lit.)

Chemical Oxygen Demand (COD) : 1,600 mg/g  
Remarks: (Lit.)

BOD/ThOD : 99 %  
Remarks: (IUCLID)

## **Potassium Hydroxide:**

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

## **Bioaccumulative potential**

### **Components:**

#### **Methyl alcohol:**

Partition coefficient: n-octanol/water : log Pow: -0.77  
Method: (experimental)  
Remarks: (Lit.)  
Bioaccumulation is not expected.

#### **Methyl-2-pyrrolidinone, 1-:**

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Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: -0.46 (77 °F / 25 °C)  
Method: OECD Test Guideline 107  
Remarks: Bioaccumulation is not expected.

## Potassium Hydroxide:

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

## Mobility in soil

No data available

## Other adverse effects

### Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No ecological testing was carried out on the preparation.

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging : When discarding an empty container, the contaminated to the inside is removed completely and it discards according to your local regulations.

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

### IATA-DGR

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UN/ID No. : UN 2924  
Proper shipping name : Flammable liquid, corrosive, n.o.s.  
(Methyl alcohol, Potassium Hydroxide)  
Class : 3  
Subsidiary risk : 8  
Packing group : II  
Labels : Flammable Liquids, Corrosive  
Packing instruction (cargo aircraft) : 363  
Packing instruction (passenger aircraft) : 352

## IMDG-Code

UN number : UN 2924  
Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.  
(Methyl alcohol, Potassium Hydroxide)  
Class : 3  
Subsidiary risk : 8  
Packing group : II  
Labels : 3 (8)  
EmS Code : F-E, S-C  
Marine pollutant : no

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

Not applicable for product as supplied.

## Domestic regulation

### 49 CFR Road

UN/ID/NA number : UN 2924  
Proper shipping name : Flammable liquids, corrosive, n.o.s.  
(Methyl alcohol, Potassium Hydroxide)  
Class : 3  
Subsidiary risk : 8  
Packing group : II  
Labels : FLAMMABLE LIQUID, CORROSIVE  
ERG Code : 132  
Marine pollutant : no

## 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.

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Methyl alcohol	67-56-1	100	100 (F003)

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## SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

## SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Methyl alcohol	67-56-1	$\geq 70 - < 90 \%$
Methyl-2-pyrrolidinone, 1-	872-50-4	$\geq 20 - < 30 \%$

## Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

Methyl alcohol	67-56-1	$\geq 70 - < 90 \%$
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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

Methyl alcohol	67-56-1	$\geq 70 - < 90 \%$
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## Clean Water Act

The following Hazardous Substances are listed under the U.S. Clean Water Act, Section 311, Table 116.4A:

Potassium Hydroxide	1310-58-3	$\geq 1 - < 5 \%$
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The following Hazardous Chemicals are listed under the U.S. Clean Water Act, Section 311, Table 117.3:

Potassium Hydroxide	1310-58-3	$\geq 1 - < 5 \%$
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This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

## US State Regulations

### Massachusetts Right To Know

Methyl alcohol	67-56-1
Methyl-2-pyrrolidinone, 1-	872-50-4
Potassium Hydroxide	1310-58-3

### California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Methyl alcohol	67-56-1
Methyl-2-pyrrolidinone, 1-	872-50-4

## TSCA list

No substances are subject to a Significant New Use Rule.

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The following substance(s) is/are subject to TSCA 12(b) export notification requirements:  
Methyl-2-pyrrolidinone, 1- 872-50-4

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

TSCA : All substance listed on the TSCA Active Inventory

DSL : All components of this product are on the Canadian DSL

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## **SECTION 16. OTHER INFORMATION**

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

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