



# SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>2-Propanol System Suitability</b>	
<b>Other means of identification</b>		
<b>Catalog number</b>	1570439	
<b>Chemical name</b>	Solution containing approximately 0.1% of each of acetone, diisopropyl ether, ethyl ether, 1-propanol, ethyl acetate, 2-butanol and 0.02% of methanol in 2-propanol	
<b>Recommended use</b>	For analytical laboratory use only.	
<b>Recommended restrictions</b>	Not for use as a drug. Not for administration to humans or animals.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Manufacturer</b>		
<b>Company name</b>	U. S. Pharmacopeia	
<b>Address</b>	12601 Twinbrook Parkway Rockville MD 20852-1790 United States	
<b>Telephone</b>	Customer Service	301-881-0666
<b>Website</b>	www.usp.org	
<b>E-mail</b>	RSTECH@usp.org	
<b>Emergency phone number</b>	CHEMTREC within US & Canada	1-800-424-9300
	CHEMTREC outside US & Canada	+1 703-527-3887

## 2. Hazard(s) identification

<b>Physical hazards</b>	Flammable liquids	Category 2
<b>Health hazards</b>	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
<b>Environmental hazards</b>	Not classified.	
<b>OSHA defined hazards</b>	Not classified.	

### Label elements



<b>Signal word</b>	Danger	
<b>Hazard statement</b>	Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness.	
<b>Precautionary statement</b>		
<b>Prevention</b>	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use explosion-proof electrical/ventilating/lighting equipment. Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Avoid breathing mist or vapor. Wear protective gloves/eye protection/face protection. Use only outdoors or in a well-ventilated area.	
<b>Response</b>	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.	
<b>Storage</b>	Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.	
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.	

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** None.

### 3. Composition/information on ingredients

#### Mixture

Chemical name	Common name and synonyms	CAS number	%
2-Propanol	1-Methylethanol Isopropanol	67-63-0	99.37
Ethyl Acetate	Acetic ether Ethyl ethanoate	141-78-6	0.11
1-Propanol		71-23-8	0.1
2-Butanol	sec-Butyl alcohol 2-Hydroxybutane Butan-2-ol	78-92-2	0.1
Acetone	Dimethyl ketone Ketone propane	67-64-1	0.1
Diisopropyl Ether		108-20-3	0.1
Ethyl Ether		60-29-7	0.1
Methyl Alcohol	Wood alcohol	67-56-1	0.02

Information provided in the SDS is not specific to the lot provided. Refer to the label and USP Certificate/Product Information Sheet for the assigned value of a particular lot.

### 4. First-aid measures

#### Inhalation

If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if the substance is inhaled. Call a poison center or doctor/physician if you feel unwell.

#### Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

#### Eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

#### Ingestion

Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

#### Most important symptoms/effects, acute and delayed

Narcotic effects.

#### Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

#### General information

Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

### 5. Fire-fighting measures

#### Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

#### Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

#### Specific hazards arising from the chemical

By heating and fire, harmful vapors/gases may be formed.

#### Special protective equipment and precautions for firefighters

Wear suitable protective equipment.

#### Fire fighting equipment/instructions

As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

#### Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

#### General fire hazards

Highly flammable liquid and vapor.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Wear appropriate personal protective equipment. Avoid inhalation of vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. For personal protection, see section 8 of the SDS.

### Methods and materials for containment and cleaning up

Absorb spillage with suitable absorbent material. Remove sources of ignition. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

### Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

## 7. Handling and storage

### Precautions for safe handling

As a general rule, when handling USP materials, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly. Select and use containment devices and personal protective equipment based on a risk assessment of material potency and exposure potential.

### Conditions for safe storage, including any incompatibilities

Store in tight container. This material should be handled and stored per label instructions to ensure product integrity.

## 8. Exposure controls/personal protection

### Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

#### U.S. - OSHA

##### Components

Components	Type	Value	Form
Methyl Alcohol (CAS 67-56-1)	PEL	200 ppm	Skin

#### US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
1-Propanol (CAS 71-23-8)	PEL	500 mg/m3 200 ppm
2-Butanol (CAS 78-92-2)	PEL	450 mg/m3 150 ppm
2-Propanol (CAS 67-63-0)	PEL	980 mg/m3 400 ppm
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm
Diisopropyl Ether (CAS 108-20-3)	PEL	2100 mg/m3 500 ppm
Ethyl Acetate (CAS 141-78-6)	PEL	1400 mg/m3 400 ppm
Ethyl Ether (CAS 60-29-7)	PEL	1200 mg/m3 400 ppm
Methyl Alcohol (CAS 67-56-1)	PEL	260 mg/m3 200 ppm

#### ACGIH

##### Components

Components	Type	Value	Form
Methyl Alcohol (CAS 67-56-1)	STEL	250 ppm	Skin

**US. ACGIH Threshold Limit Values (TLV)**

Components	Type	Value
1-Propanol (CAS 71-23-8)	TWA	100 ppm
2-Butanol (CAS 78-92-2)	TWA	100 ppm
2-Propanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm
Acetone (CAS 67-64-1)	STEL	500 ppm
	TWA	250 ppm
Diisopropyl Ether (CAS 108-20-3)	STEL	310 ppm
	TWA	250 ppm
Ethyl Acetate (CAS 141-78-6)	TWA	400 ppm
	TWA	400 ppm
Ethyl Ether (CAS 60-29-7)	STEL	500 ppm
	TWA	400 ppm
Methyl Alcohol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm

**NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended**

Components	Type	Value
2-Butanol (CAS 78-92-2)	IDLH	2000 ppm
Diisopropyl Ether (CAS 108-20-3)	IDLH	1.4 %
		1400 ppm
Ethyl Ether (CAS 60-29-7)	IDLH	1.9 %
		1900 ppm

**U.S. - NIOSH**

Components	Type	Value	Form
Methyl Alcohol (CAS 67-56-1)	IDLH	6000 ppm	
	STEL	250 ppm	Skin

**US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)**

Components	Type	Value
1-Propanol (CAS 71-23-8)	STEL	625 mg/m3
		250 ppm
	TWA	500 mg/m3
2-Butanol (CAS 78-92-2)		200 ppm
	STEL	455 mg/m3
	TWA	150 ppm
2-Propanol (CAS 67-63-0)		305 mg/m3
	STEL	100 ppm
	TWA	1225 mg/m3
Acetone (CAS 67-64-1)		500 ppm
	STEL	980 mg/m3
	TWA	400 ppm
Diisopropyl Ether (CAS 108-20-3)		590 mg/m3
	TWA	250 ppm
		2100 mg/m3
		500 ppm

**US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)**

Components	Type	Value
Ethyl Acetate (CAS 141-78-6)	TWA	1400 mg/m <sup>3</sup>
		400 ppm
Methyl Alcohol (CAS 67-56-1)	STEL	325 mg/m <sup>3</sup>
		250 ppm
	TWA	260 mg/m <sup>3</sup> 200 ppm

**Biological limit values****ACGIH Biological Exposure Indices (BEI)**

Components	Value	Determinant	Specimen	Sampling Time
2-Propanol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*
Acetone (CAS 67-64-1)	25 mg/l	Acetone	Urine	*
Methyl Alcohol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*

\* - For sampling details, please see the source document.

**Exposure guidelines****US - California OELs: Skin designation**

1-Propanol (CAS 71-23-8) Can be absorbed through the skin.  
Methyl Alcohol (CAS 67-56-1) Can be absorbed through the skin.

**US - Minnesota Haz Subs: Skin designation applies**

1-Propanol (CAS 71-23-8) Skin designation applies.  
Methyl Alcohol (CAS 67-56-1) Skin designation applies.

**US - Tennessee OELs: Skin designation**

Methyl Alcohol (CAS 67-56-1) Can be absorbed through the skin.

**US ACGIH Threshold Limit Values: Skin designation**

Methyl Alcohol (CAS 67-56-1) Danger of cutaneous absorption

**US NIOSH Pocket Guide to Chemical Hazards: Skin designation**

1-Propanol (CAS 71-23-8) Can be absorbed through the skin.  
Methyl Alcohol (CAS 67-56-1) Can be absorbed through the skin.

**Appropriate engineering controls**

For laboratory operations, use good technique and limit open handling. Control exposures to below the occupational exposure level (if available). Select and use containment devices and personal protective equipment based on a risk assessment of exposure potential. Cover all containers for solutions and slurries while being transferred.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

**Skin protection****Hand protection**

Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.

**Other**

Wear lab coat. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use. Do not wear protective garments in common areas (e.g., cafeterias) or out-of-doors.

**Respiratory protection**

Respirators are generally not required for laboratory operations. Choose respiratory protection appropriate to the task and the level of existing engineering controls.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

Handling practices in this SDS are recommendations for laboratory use of USP materials.

**9. Physical and chemical properties****Appearance**

Appearance descriptions are general information and not specific to any USP lot.

**Physical state**

Liquid.

**Form**

Liquid.

<b>Color</b>	Colorless.
<b>Odor</b>	Characteristic.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	51.8 °F (11.0 °C)
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>VOC</b>	99.9 % estimated

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Risk of ignition.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents. Chlorine. Isocyanates. Ethylene oxide.
<b>Hazardous decomposition products</b>	Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Knowledge about health hazard is incomplete.
<b>Skin contact</b>	Knowledge about health hazard is incomplete.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Ingestion</b>	Knowledge about health hazard is incomplete.

**Symptoms related to the physical, chemical and toxicological characteristics**  
 Related material: Flushing. Headache. Dizziness. Hallucinations. Distorted perceptions. Shortness of breath. Gastrointestinal disturbances. Fast heartbeat. Slow breathing.

### Information on toxicological effects

#### Acute toxicity

Components	Species	Test Results
1-Propanol (CAS 71-23-8)		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rabbit	5040 mg/kg
<b>Inhalation</b>		
LC50	Mouse	48000 mg/m3
2-Butanol (CAS 78-92-2)		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rat	> 2000 mg/kg
<b>Inhalation</b>		
LC50	Rat	48.5 mg/l/4h
<b>Oral</b>		
LD50	Rat	6200 mg/kg 2193 mg/kg
2-Propanol (CAS 67-63-0)		
<b><u>Acute</u></b>		
<b>Inhalation</b>		
LC50	Rat	73 mg/l, 4 hours
Acetone (CAS 67-64-1)		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rabbit	20000 mg/kg
<b>Inhalation</b>		
LC50	Rat	76 mg/l, 4 hours
<b>Oral</b>		
LD50	Rat	5800 mg/kg
Diisopropyl Ether (CAS 108-20-3)		
<b>Dermal</b>		
LD50	Rabbit	> 2000 mg/kg
<b>Inhalation</b>		
LC50	Rat	161700 mg/m3
<b>Oral</b>		
LD50	Rat	4.5 g/kg
Ethyl Acetate (CAS 141-78-6)		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rabbit	> 20 ml/kg
<b>Inhalation</b>		
LC50	Mouse	1500 mg/l, 4 Hours
	Rabbit	2500 mg/l, 4 Hours
	Rat	4000 mg/l, 4 Hours
Ethyl Ether (CAS 60-29-7)		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rabbit	> 20000 mg/kg, 24 Hours > 20 ml/kg
<b>Oral</b>		
LD50	Rat	1200 mg/kg

Components	Species	Test Results
Methyl Alcohol (CAS 67-56-1)		
<b><u>Acute</u></b>		
<b>Oral</b>		
LD50	Rat	1187 - 2769 mg/kg
<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.	
<b>Serious eye damage/eye irritation</b>	Causes serious eye irritation.	
<b>Local effects</b>		
Acetone		20 mg Eye irritation Result: Irritant. Species: Rabbit Test Duration: 24 hours Severity: Moderate.
Diisopropyl Ether		363 mg Irritation test Result: Irritant. Species: Rabbit Organ: Skin. Severity: Mild.
2-Propanol		Eye irritation test Result: Moderate to severe. Species: Rabbit
2-Butanol		Eye irritation Result: Moderate. Species: Rabbit
Methyl Alcohol		Eye irritation Result: Non-irritant. Species: Rabbit
Ethyl Acetate		Eye irritation Result: Positive. Species: Rabbit Severity: Severe.
2-Butanol		Eye irritation, 0.1 ml Result: Irritant. Species: Rabbit
1-Propanol		Irritation test Result: Irritant. Species: Human Organ: Skin Severity: Mild. Irritation test Result: Irritant. Species: Rabbit Organ: Eye Severity: Severe. Irritation test Result: Irritant. Species: Rabbit Organ: Skin Severity: Mild.
Ethyl Ether		Irritation test Result: Not irritating. Species: Rabbit Organ: Eye. Irritation test Result: Not irritating. Species: Rabbit Organ: Skin.
2-Propanol		Skin irritation test Result: Mild. Species: Rabbit
Acetone		Skin irritation Result: Negative. Species: Rabbit



**Local effects**

Ethyl Acetate

Skin irritation  
Result: Negative.  
Species: Rabbit  
Severity: Mild.

Methyl Alcohol

Skin irritation  
Result: Non-irritant.  
Species: Rabbit

2-Butanol

Skin irritation, 0.5 ml  
Result: Negative.  
Species: Rabbit**Respiratory or skin sensitization****Respiratory sensitization**

Knowledge about sensitization hazard is incomplete.

**Skin sensitization**

Knowledge about health hazard is incomplete.

2-Propanol

Buehler test  
Result: Negative: No sensitization noted.  
Species: Guinea pig

Ethyl Acetate

Guinea pig maximization test  
Result: Negative.

Methyl Alcohol

Maximisation Test  
Result: Non-sensitizing  
Species: Guinea pig

Ethyl Ether

Organ: Skin  
Sensitization  
Result: Not sensitizing.  
Species: Mouse

Acetone

Organ: Skin.  
Sensitization: (Ear swelling)  
Result: Negative.  
Species: Mouse

2-Butanol

Skin sensitization  
Result: Negative.  
Species: Guinea pig  
Maximisation Test, 0.5 ml  
Result: Not sensitizing.  
Species: Guinea pig**Germ cell mutagenicity**

Knowledge about mutagenicity is incomplete.

**Mutagenicity**

Methyl Alcohol

Ames test (Salmonella typhimurium)  
Result: Negative (+/- activation)

2-Butanol

Ames test (Salmonella typhimurium)  
Result: Negative.

2-Propanol

Ames test (Salmonella typhimurium)  
Result: Negative.

Ethyl Acetate

Ames test  
Result: Negative.

1-Propanol

Ames test  
Result: Positive.  
Micronucleus test  
Result: Negative.  
Mutagenicity, Ames S. typhimurium/microsome assay  
Result: Negative.

2-Butanol

Mutagenicity, Chromosomal aberration in CHO cells  
Result: Negative.  
Mutagenicity, E. coli assay  
Result: Negative.

2-Propanol

Mutagenicity, In vitro cell transformation assay in Syrian hamster embryos  
Result: Negative.  
Mutagenicity, In vitro HGPRT test in Chinese hamster ovary cells  
Result: Negative.  
Mutagenicity, In vitro mouse bone marrow micronucleus test  
Result: Negative.

**Mutagenicity**

2-Propanol

Mutagenicity, In vitro sister chromatid exchange assay in Chinese hamster V79 fibroblasts  
Result: Negative.

1-Propanol

Mutagenicity, Micronucleii test in hamster cells  
Result: Negative.  
Mutagenicity, Mutation test in mouse cells  
Result: Negative.

2-Butanol

Mutagenicity, Sister chromatid exchange in hamster cells  
Result: Negative.  
Mutagenicity, Tested in E. coli and in yeast  
Result: Positive.

Methyl Alcohol

Mutagenicity, Yeast mitotic gene conversion  
Result: Negative.

Ethyl Acetate

Mutagenicity: Chromosome damage in mice  
Result: Negative  
Mutagenicity: Grasshoppers  
Result: Positive  
Mutagenicity: Yeast  
Result: Positive  
Sister chromatid exchange  
Result: Positive.

**Carcinogenicity**

Knowledge about carcinogenicity is incomplete.

2-Propanol

0 - 5000 ppm Carcinogenicity, administered by inhalation 6 hours per day, 5 days per week.  
Result: Negative: No increase in tumors.  
Species: Mouse  
Test Duration: 78 weeks

Acetone

0 - 5000 ppm Carcinogenicity, administered by inhalation 6 hours per day, 5 days per week.  
Result: Negative: No increase in tumors.  
Species: Rat  
Test Duration: 104 weeks

Methyl Alcohol

0.1 ml Carcinogenicity  
Result: Negative.  
Species: Mouse  
Test Duration: 441 days  
0.2 ml Carcinogenicity  
Result: No increase in tumor rates during dermal study.  
Species: Mouse  
Test Duration: 2 years

2-Propanol

10 - 1000 ppm Carcinogenicity  
Result: Not carcinogenic  
Species: Rat  
Organ: Inhalation  
Test Duration: 18 months

Methyl Alcohol

Carcinogenicity, administered dermally 3 times per week.  
Result: Negative: No skin tumors observed.  
Species: Mouse  
Test Duration: 52 weeks  
Carcinogenicity: 25mL/twice weekly  
Result: One tumor out of 80 specimens.  
Species: Mouse  
Organ: Dermal  
Test Duration: 50 weeks

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Ethyl Ether (CAS 60-29-7)

3 Not classifiable as to carcinogenicity to humans.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**US. National Toxicology Program (NTP) Report on Carcinogens**

Not listed.

**Reproductive toxicity**

Based on available data, the classification criteria are not met.

## Reproductivity

2-Butanol	< 7000 ppm Reproduction test Result: Negative: No teratogenicity observed except for slight reduction in fetal weight. Species: Rat
2-Propanol	0 - 1200 mg/kg Reproductivity / Developmental, administered orally during gestation. Result: Maternal toxicity and fetal toxicity at high doses; no teratogenicity at any dose. Species: Rat 1000 mg/kg/day Reproductivity / Developmental, administered orally. Result: Not teratogenic. Species: Rat
Acetone	11000 ppm Reproductivity study Result: Resorptions were increased. Species: Rat
2-Propanol	1200 mg/kg/day Reproductivity / Developmental, administered orally. Result: Not teratogenic. Species: Rabbit
2-Butanol	1644 mg/kg/day Two-generation reproductive toxicity Result: Negative. Species: Rat
Methyl Alcohol	20000 ppm Gestational study, Increased incidence of anomalies and maternal effects at high doses. Species: Rat Organ: Inhalation
2-Propanol	3500 - 10000 ppm Reproductivity / Developmental, administered by inhalation during gestation. Result: Maternal toxicity, fetal toxicity, and skeletal malformations at high doses; no teratogenicity at low dose. Species: Rat
Diisopropyl Ether	6745 ppm Reproductivity study: (inhalation) Result: Reduced maternal body weights but didn't cause developmental abnormalities in offspring. Species: Rat
1-Propanol	7000 ppm Reproductivity study Result: Increased incidence of skeletal and heart defects in fetuses. At 3500 ppm, fetal weight was reduced. Species: Rat
Methyl Alcohol	Developmental Toxicity, Behavioral effects in offspring; increased incidence of anomalies; maternal toxicity. Species: Rat Gestational study, High doses increased fetal resorptions and malformations, including neural, cranial, and ocular defects. Species: Mouse

**Specific target organ toxicity - single exposure** May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure** Knowledge about health hazard is incomplete.

**Aspiration hazard** Knowledge about health hazard is incomplete.

## 12. Ecological information

### Ecotoxicity

Product		Species	Test Results
2-Propanol System Suitability			
<b>Aquatic</b>			
Crustacea	EC50	Daphnia	13383.3145 mg/l, 48 hours estimated
<i>Acute</i>			
Crustacea	EC50	Daphnia	1157999.375 mg/l, 48 hours estimated
Fish	LC50	Fish	6044.6548 mg/l, 96 hours estimated

Components	Species		Test Results
1-Propanol (CAS 71-23-8)			
<b>Aquatic</b>			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	>= 3339 - <= 3977 mg/l, 48 hours
Fish	LC50	Bleak (Alburnus alburnus)	>= 3000 - <= 4000 mg/l, 96 hours
2-Butanol (CAS 78-92-2)			
<b>Aquatic</b>			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	1859 - 7143 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	3380 - 3990 mg/l, 96 hours
2-Propanol (CAS 67-63-0)			
<b>Aquatic</b>			
Crustacea	EC50	Daphnia magna	13299 mg/l, 48 hours
<i>Acute</i>			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1400 mg/l, 96 hours
		Harlequinfish, red rasbora (Rasbora heteromorpha)	4200 mg/l, 96 hours
Acetone (CAS 67-64-1)			
<b>Aquatic</b>			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	>= 10294 - <= 17704 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	>= 4740 - <= 6330 mg/l, 96 hours
Diisopropyl Ether (CAS 108-20-3)			
<b>Aquatic</b>			
<i>Acute</i>			
Fish	LC50	Fathead minnow (Pimephales promelas)	91.7 mg/l, 96 hours
Ethyl Ether (CAS 60-29-7)			
<b>Aquatic</b>			
<i>Acute</i>			
Fish	LC50	Fathead minnow (Pimephales promelas)	2560 mg/l, 96 hours
Methyl Alcohol (CAS 67-56-1)			
<b>Aquatic</b>			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours

**Persistence and degradability** No data is available on the degradability of any ingredients in the mixture.

**Bioaccumulative potential**

**Octanol/water partition coefficient log Kow**

1-Propanol	0.25 - 0.34
2-Propanol	0.05 0.7, at 25 °C
Acetone	-0.24
Diisopropyl Ether	1.52
Ethyl Acetate	0.6 - 0.73
Ethyl Ether	0.89

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

<b>Disposal instructions</b>	Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

### 14. Transport information

#### DOT

<b>UN number</b>	UN1219
<b>UN proper shipping name</b>	Isopropyl alcohol solution
<b>Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>Packing group</b>	II
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.

#### IATA

<b>UN number</b>	UN1219
<b>UN proper shipping name</b>	Isopropyl alcohol solution
<b>Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>Packing group</b>	II
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Allowed with restrictions.
<b>Cargo aircraft only</b>	Allowed with restrictions.

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

Not established.

#### DOT



#### IATA



#### General information

It is the shipper's responsibility to determine the correct transport classification at the time of shipment.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### Toxic Substances Control Act (TSCA)

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

1-Propanol (CAS 71-23-8)	Listed.
2-Butanol (CAS 78-92-2)	Listed.
2-Propanol (CAS 67-63-0)	Listed.
Acetone (CAS 67-64-1)	Listed.
Diisopropyl Ether (CAS 108-20-3)	Listed.
Ethyl Acetate (CAS 141-78-6)	Listed.
Ethyl Ether (CAS 60-29-7)	Listed.
Methyl Alcohol (CAS 67-56-1)	Listed.

### SARA 304 Emergency release notification

Not regulated.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Flammable (gases, aerosols, liquids, or solids)  
Serious eye damage or eye irritation  
Specific target organ toxicity (single or repeated exposure)  
Hazard not otherwise classified (HNOC)

#### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
2-Propanol	67-63-0	99.37

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Methyl Alcohol (CAS 67-56-1)

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Ethyl Ether (CAS 60-29-7)

**Safe Drinking Water Act (SDWA)** Not regulated.

#### Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1)	6532
Ethyl Ether (CAS 60-29-7)	6584

#### Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1)	35 %WV
Ethyl Ether (CAS 60-29-7)	35 %WV

#### DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532
Ethyl Ether (CAS 60-29-7)	6584

#### FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

1-Propanol (CAS 71-23-8)	Low priority
2-Propanol (CAS 67-63-0)	Low priority
Acetone (CAS 67-64-1)	Low priority
Ethyl Acetate (CAS 141-78-6)	Low priority

### US state regulations

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

2-Propanol (CAS 67-63-0)

Acetone (CAS 67-64-1)  
Ethyl Acetate (CAS 141-78-6)  
Ethyl Ether (CAS 60-29-7)  
Methyl Alcohol (CAS 67-56-1)

### California Proposition 65



**WARNING:** California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### California Proposition 65 - CRT: Listed date/Developmental toxin

Methyl Alcohol (CAS 67-56-1)

Listed: March 16, 2012

### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

### 16. Other information, including date of preparation or last revision

**Issue date** 01-11-2010

**Revision date** 03-03-2025

**Version #** 05

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