

1. Identification**Product identifier** Canadian Cannabis Residual Solvent Mixture 1**Other means of identification****Item** M-CANRSMIX1AQ7**Recommended use** For Laboratory Use Only**Recommended restrictions** None known.**Manufacturer/Importer/Supplier/Distributor information****Manufacturer****Company name** Chem Service, Inc.
Address 660 Tower Lane
West Chester, PA 19380
United States**Telephone** Toll Free 800-452-9994
Direct 610-692-3026**Website** www.chemservice.com**E-mail** info@chemservice.com**Emergency phone number** Chemtrec US 800-424-9300
Chemtrec outside US +1 703-527-3887**2. Hazard(s) identification**

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, dermal	Category 4
	Acute toxicity, inhalation	Category 3
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 1
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements**Signal word** Danger**Hazard statement** Highly flammable liquid and vapor. Harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. Toxic if inhaled. Suspected of causing cancer. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

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. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage

Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

87% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 87% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
N,N-Dimethylacetamide		127-19-5	87
2-Butanone		78-93-3	0.5
Acetic acid		64-19-7	0.5
Acetone		67-64-1	0.5
Anisole		100-66-3	0.5
Ethyl acetate		141-78-6	0.5
Ethyl alcohol		64-17-5	0.5
Ethyl ether		60-29-7	0.5
Ethyl formate		109-94-4	0.5
Formic acid		64-18-6	0.5
Isoamyl alcohol		123-51-3	0.5
Isobutyl acetate		110-19-0	0.5
Isobutyl alcohol		78-83-1	0.5
Isopropyl acetate		108-21-4	0.5
Isopropyl alcohol		67-63-0	0.5
Methyl acetate		79-20-9	0.5
Methyl sulfoxide	Dimethyl sulfoxide(DMSO)	67-68-5	0.5
n-Amyl alcohol		71-41-0	0.5
n-Butyl acetate		123-86-4	0.5
n-Butyl alcohol		71-36-3	0.5
n-Heptane		142-82-5	0.5
n-Pentane		109-66-0	0.5
Propyl acetate		109-60-4	0.5
Propyl alcohol		71-23-8	0.5
sec-Butyl alcohol		78-92-2	0.5
tert-Butyl methyl ether		1634-04-4	0.5
Triethylamine		121-44-8	0.5

4. First-aid measures

Inhalation	Remove victim 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 victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTER or doctor/physician.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical advice/attention if you feel unwell. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
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. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Use water spray to reduce vapors or divert vapor cloud drift. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. Prevent product from entering drains.</p> <p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.</p> <p>Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

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.

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

Components	Type	Value
2-Butanone (CAS 78-93-3)	PEL	590 mg/m3 200 ppm
Acetic acid (CAS 64-19-7)	PEL	25 mg/m3 10 ppm
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm
Ethyl acetate (CAS 141-78-6)	PEL	1400 mg/m3 400 ppm
Ethyl alcohol (CAS 64-17-5)	PEL	1900 mg/m3 1000 ppm
Ethyl ether (CAS 60-29-7)	PEL	1200 mg/m3 400 ppm
Ethyl formate (CAS 109-94-4)	PEL	300 mg/m3 100 ppm
Formic acid (CAS 64-18-6)	PEL	9 mg/m3 5 ppm
Isoamyl alcohol (CAS 123-51-3)	PEL	360 mg/m3 100 ppm
Isobutyl acetate (CAS 110-19-0)	PEL	700 mg/m3 150 ppm
Isobutyl alcohol (CAS 78-83-1)	PEL	300 mg/m3 100 ppm
Isopropyl acetate (CAS 108-21-4)	PEL	950 mg/m3 250 ppm
Isopropyl alcohol (CAS 67-63-0)	PEL	980 mg/m3 400 ppm
Methyl acetate (CAS 79-20-9)	PEL	610 mg/m3 200 ppm
N,N-Dimethylacetamide (CAS 127-19-5)	PEL	35 mg/m3 10 ppm

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

Components	Type	Value
n-Butyl acetate (CAS 123-86-4)	PEL	710 mg/m3
		150 ppm
n-Butyl alcohol (CAS 71-36-3)	PEL	300 mg/m3
		100 ppm
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3
		500 ppm
n-Pentane (CAS 109-66-0)	PEL	2950 mg/m3
		1000 ppm
Propyl acetate (CAS 109-60-4)	PEL	840 mg/m3
		200 ppm
Propyl alcohol (CAS 71-23-8)	PEL	500 mg/m3
		200 ppm
sec-Butyl alcohol (CAS 78-92-2)	PEL	450 mg/m3
		150 ppm
Triethylamine (CAS 121-44-8)	PEL	100 mg/m3
		25 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Butanone (CAS 78-93-3)	STEL	300 ppm
	TWA	200 ppm
Acetic acid (CAS 64-19-7)	STEL	15 ppm
	TWA	10 ppm
Acetone (CAS 67-64-1)	STEL	500 ppm
	TWA	250 ppm
Ethyl acetate (CAS 141-78-6)	TWA	400 ppm
Ethyl alcohol (CAS 64-17-5)	STEL	1000 ppm
Ethyl ether (CAS 60-29-7)	STEL	500 ppm
	TWA	400 ppm
Ethyl formate (CAS 109-94-4)	STEL	100 ppm
Formic acid (CAS 64-18-6)	STEL	10 ppm
	TWA	5 ppm
Isoamyl alcohol (CAS 123-51-3)	STEL	125 ppm
	TWA	100 ppm
Isobutyl acetate (CAS 110-19-0)	STEL	150 ppm
	TWA	50 ppm
Isobutyl alcohol (CAS 78-83-1)	TWA	50 ppm
Isopropyl acetate (CAS 108-21-4)	STEL	200 ppm
	TWA	100 ppm
Isopropyl alcohol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm
Methyl acetate (CAS 79-20-9)	STEL	250 ppm
	TWA	200 ppm
N,N-Dimethylacetamide (CAS 127-19-5)	TWA	10 ppm
n-Butyl acetate (CAS 123-86-4)	STEL	150 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
	TWA	50 ppm
n-Butyl alcohol (CAS 71-36-3)	TWA	20 ppm
n-Heptane (CAS 142-82-5)	STEL	500 ppm
	TWA	400 ppm
n-Pentane (CAS 109-66-0)	TWA	1000 ppm
Propyl acetate (CAS 109-60-4)	STEL	250 ppm
	TWA	200 ppm
Propyl alcohol (CAS 71-23-8)	TWA	100 ppm
sec-Butyl alcohol (CAS 78-92-2)	TWA	100 ppm
tert-Butyl methyl ether (CAS 1634-04-4)	TWA	50 ppm
Triethylamine (CAS 121-44-8)	STEL	1 ppm
	TWA	0.5 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-Butanone (CAS 78-93-3)	STEL	885 mg/m3
		300 ppm
	TWA	590 mg/m3
		200 ppm
Acetic acid (CAS 64-19-7)	STEL	37 mg/m3
		15 ppm
	TWA	25 mg/m3
		10 ppm
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Ethyl acetate (CAS 141-78-6)	TWA	1400 mg/m3
		400 ppm
Ethyl alcohol (CAS 64-17-5)	TWA	1900 mg/m3
		1000 ppm
Ethyl formate (CAS 109-94-4)	TWA	300 mg/m3
		100 ppm
Formic acid (CAS 64-18-6)	TWA	9 mg/m3
		5 ppm
Isoamyl alcohol (CAS 123-51-3)	STEL	450 mg/m3
		125 ppm
	TWA	360 mg/m3
		100 ppm
Isobutyl acetate (CAS 110-19-0)	TWA	700 mg/m3
		150 ppm
Isobutyl alcohol (CAS 78-83-1)	TWA	150 mg/m3
		50 ppm
Isopropyl alcohol (CAS 67-63-0)	STEL	1225 mg/m3
		500 ppm
	TWA	980 mg/m3
		400 ppm
Methyl acetate (CAS 79-20-9)	STEL	760 mg/m3
		250 ppm
	TWA	610 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
N,N-Dimethylacetamide (CAS 127-19-5)	TWA	200 ppm
		35 mg/m3
n-Butyl acetate (CAS 123-86-4)	STEL	10 ppm
		950 mg/m3
n-Butyl alcohol (CAS 71-36-3)	TWA	200 ppm
		710 mg/m3
n-Butyl alcohol (CAS 71-36-3)	Ceiling	150 ppm
		150 mg/m3
n-Heptane (CAS 142-82-5)	Ceiling	50 ppm
		1800 mg/m3
n-Heptane (CAS 142-82-5)	TWA	440 ppm
		350 mg/m3
n-Pentane (CAS 109-66-0)	Ceiling	85 ppm
		1800 mg/m3
n-Pentane (CAS 109-66-0)	TWA	610 ppm
		350 mg/m3
Propyl acetate (CAS 109-60-4)	STEL	120 ppm
		1050 mg/m3
Propyl acetate (CAS 109-60-4)	TWA	250 ppm
		840 mg/m3
Propyl alcohol (CAS 71-23-8)	STEL	200 ppm
		625 mg/m3
Propyl alcohol (CAS 71-23-8)	TWA	250 ppm
		500 mg/m3
sec-Butyl alcohol (CAS 78-92-2)	STEL	200 ppm
		455 mg/m3
sec-Butyl alcohol (CAS 78-92-2)	TWA	150 ppm
		305 mg/m3
sec-Butyl alcohol (CAS 78-92-2)	TWA	100 ppm

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Methyl sulfoxide (CAS 67-68-5)	TWA	250 ppm
n-Amyl alcohol (CAS 71-41-0)	TWA	360 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-Butanone (CAS 78-93-3)	2 mg/l	MEK	Urine	*
Acetone (CAS 67-64-1)	25 mg/l	Acetone	Urine	*
Isopropyl alcohol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*
N,N-Dimethylacetamide (CAS 127-19-5)	30 mg/g	N-Methylaceta mide	Creatinine in urine	*

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

Exposure guidelines

US - California OELs: Skin designation

N,N-Dimethylacetamide (CAS 127-19-5)	Can be absorbed through the skin.
n-Butyl alcohol (CAS 71-36-3)	Can be absorbed through the skin.
Propyl alcohol (CAS 71-23-8)	Can be absorbed through the skin.
Triethylamine (CAS 121-44-8)	Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

N,N-Dimethylacetamide (CAS 127-19-5)	Skin designation applies.
n-Butyl alcohol (CAS 71-36-3)	Skin designation applies.
Propyl alcohol (CAS 71-23-8)	Skin designation applies.

US - Tennessee OELs: Skin designation

N,N-Dimethylacetamide (CAS 127-19-5)	Can be absorbed through the skin.
n-Butyl alcohol (CAS 71-36-3)	Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

N,N-Dimethylacetamide (CAS 127-19-5)	Can be absorbed through the skin.
Triethylamine (CAS 121-44-8)	Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

N,N-Dimethylacetamide (CAS 127-19-5)	Can be absorbed through the skin.
n-Butyl alcohol (CAS 71-36-3)	Can be absorbed through the skin.
Propyl alcohol (CAS 71-23-8)	Can be absorbed through the skin.

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

N,N-Dimethylacetamide (CAS 127-19-5)	Can be absorbed through the skin.
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Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Physical state Liquid.

Form Liquid.

Color Not available.

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -1.46 °F (-18.59 °C) estimated

Initial boiling point and boiling range 325.4 °F (163 °C) estimated

Flash point 158.0 °F (70.0 °C) estimated

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 1.8 % estimated

Flammability limit - upper (%) 11.5 % estimated

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 2.67 hPa estimated

Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	914 °F (490 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.92456 g/cm3 estimated
Explosive properties	Not explosive.
Flammability class	Combustible IIIA estimated
Oxidizing properties	Not oxidizing.
Percent volatile	11 % estimated
Specific gravity	0.92 estimated
VOC	11 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Toxic if inhaled. May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact	Harmful in contact with skin. Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Toxic if inhaled. Harmful in contact with skin.

Components	Species	Test Results
2-Butanone (CAS 78-93-3)		
Acute		
Oral		
LD50	Rat	2054 mg/kg
Acetic acid (CAS 64-19-7)		
Acute		
Dermal		
LD50	Rabbit	1060 mg/kg
Inhalation		
LC50	Rat	11.4 mg/l, 4 Hours

Components	Species	Test Results
Oral LD50	Rat	3.31 g/kg
Anisole (CAS 100-66-3)		
<u>Acute</u> Inhalation <i>Vapor</i> LC50	Rat	> 6.51 mg/l, 4 Hours
Ethyl alcohol (CAS 64-17-5)		
<u>Acute</u> Oral LD50	Rat	1187 - 2769 mg/kg
Ethyl ether (CAS 60-29-7)		
<u>Acute</u> Oral LD50	Rat	1200 mg/kg
Formic acid (CAS 64-18-6)		
<u>Acute</u> Dermal LD50	Rat	> 2000 mg/kg
Inhalation LC50	Rat	7.4 mg/l, 4 Hours
Oral LD50	Rat	730 mg/kg
Isoamyl alcohol (CAS 123-51-3)		
<u>Acute</u> Dermal LD50	Rabbit	3216 mg/kg, 24 Hours
Oral LD50	Rat	1300 mg/kg
Isobutyl alcohol (CAS 78-83-1)		
<u>Acute</u> Dermal LD50	Rabbit	> 2000 mg/kg, 24 Hours
Inhalation <i>Vapor</i> LC50	Rat	> 6.5 mg/l, 4 Hours
Oral LD50	Rat	2.46 g/kg
Isopropyl acetate (CAS 108-21-4)		
<u>Acute</u> Oral LD50	Rat	3 g/kg
Isopropyl alcohol (CAS 67-63-0)		
<u>Acute</u> Oral LD50	Rat	4.7 g/kg
Methyl acetate (CAS 79-20-9)		
<u>Acute</u> Dermal LD50	Rat	> 2000 mg/kg, 24 Hours

Components	Species	Test Results
N,N-Dimethylacetamide (CAS 127-19-5)		
<u>Acute</u>		
Oral		
LD50	Rat	4390 mg/kg
n-Amyl alcohol (CAS 71-41-0)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	2000 mg/kg
Oral		
LD50	Rat	2200 mg/kg
n-Butyl alcohol (CAS 71-36-3)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	3400 mg/kg
Oral		
LD50	Rat	790 mg/kg
n-Heptane (CAS 142-82-5)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
n-Pentane (CAS 109-66-0)		
<u>Acute</u>		
Oral		
LD50	Rat	> 2000 mg/kg
Propyl alcohol (CAS 71-23-8)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	4032 mg/kg, 24 Hours
Oral		
LD50	Rat	1870 mg/kg
sec-Butyl alcohol (CAS 78-92-2)		
<u>Acute</u>		
Dermal		
LD50	Rat	> 2000 mg/kg, 24 Hours
Oral		
LD50	Rat	2054 mg/kg
tert-Butyl methyl ether (CAS 1634-04-4)		
<u>Acute</u>		
Dermal		
LD50	Rat	> 2000 mg/kg, Days
Oral		
LD50	Rat	> 2000 mg/kg
Triethylamine (CAS 121-44-8)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	416 mg/kg
Inhalation		
LC50	Rat	0.42 mg/l, 1 Hours

Components	Species	Test Results
Oral LD50	Rat	730 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	Suspected of causing cancer.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Ethyl ether (CAS 60-29-7)	3 Not classifiable as to carcinogenicity to humans.	
tert-Butyl methyl ether (CAS 1634-04-4)	3 Not classifiable as to carcinogenicity to humans.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Not regulated.		
US. National Toxicology Program (NTP) Report on Carcinogens		
Not listed.		
Reproductive toxicity	May damage fertility or the unborn child.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.	

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Components	Species	Test Results
2-Butanone (CAS 78-93-3)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 4025 - 6440 mg/l, 48 hours
Fish	LC50	Sheepshead minnow (Cyprinodon variegatus) > 400 mg/l, 96 hours
Acetic acid (CAS 64-19-7)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 65 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus) 75 mg/l, 96 hours
Acetone (CAS 67-64-1)		
Aquatic		
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
Anisole (CAS 100-66-3)		
Aquatic		
Fish	LC50	Zebra danio (Danio rerio) > 1 mg/l, 96 hours
Ethyl acetate (CAS 141-78-6)		
Aquatic		
Fish	LC50	Indian catfish (Heteropneustes fossilis) 200.32 - 225.42 mg/l, 96 hours

Components		Species	Test Results
Ethyl alcohol (CAS 64-17-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	7.7 - 11.2 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
Ethyl ether (CAS 60-29-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2560 mg/l, 96 hours
Formic acid (CAS 64-18-6)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	138 - 165.6 mg/l, 48 hours
Isobutyl alcohol (CAS 78-83-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	950 - 1200 mg/l, 48 hours
Fish	LC50	Bleak (Alburnus alburnus)	1000 - 3000 mg/l, 96 hours
Isopropyl alcohol (CAS 67-63-0)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1400 mg/l, 96 hours
Methyl acetate (CAS 79-20-9)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	295 - 348 mg/l, 96 hours
Methyl sulfoxide (CAS 67-68-5)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	33000 - 37000 mg/l, 96 hours
n-Amyl alcohol (CAS 71-41-0)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	607 - 841 mg/l, 48 hours
Fish	LC50	Inland silverside (Menidia beryllina)	180 mg/l, 96 hours
n-Butyl acetate (CAS 123-86-4)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	17 - 19 mg/l, 96 hours
n-Butyl alcohol (CAS 71-36-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1897 - 2072 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus)	100 - 500 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
Fish	LC50	Mozambique tilapia (Tilapia mossambica)	375 mg/l, 96 hours
Propyl acetate (CAS 109-60-4)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	56 - 64 mg/l, 96 hours
Propyl alcohol (CAS 71-23-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	3339 - 3977 mg/l, 48 hours
Fish	LC50	Bleak (Alburnus alburnus)	3000 - 4000 mg/l, 96 hours
sec-Butyl alcohol (CAS 78-92-2)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1859 - 7143 mg/l, 48 hours

Components	Species	Test Results
Fish	LC50	Fathead minnow (Pimephales promelas) 3380 - 3990 mg/l, 96 hours
tert-Butyl methyl ether (CAS 1634-04-4)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 672 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

2-Butanone	0.29
Acetic acid	-0.17
Acetone	-0.24
Anisole	2.11
Ethyl acetate	0.73
Ethyl alcohol	-0.31
Ethyl ether	0.89
Formic acid	-0.54
Isoamyl alcohol	1.16
Isobutyl acetate	1.78
Isobutyl alcohol	0.76
Isopropyl acetate	1.02
Isopropyl alcohol	0.05
Methyl acetate	0.18
Methyl sulfoxide	-2.03
N,N-Dimethylacetamide	-0.77
n-Amyl alcohol	1.4
n-Butyl acetate	1.78
n-Butyl alcohol	0.88
n-Heptane	4.66
n-Pentane	3.39
Propyl acetate	1.23
Propyl alcohol	0.25
sec-Butyl alcohol	0.61
tert-Butyl methyl ether	0.94
Triethylamine	1.45

Mobility in soil No data available.

Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. 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).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s.
Transport hazard class(es)	
Class	3

Subsidiary risk	-
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s.
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

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

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

2-Butanone (CAS 78-93-3)	Listed.
Acetic acid (CAS 64-19-7)	Listed.
Acetone (CAS 67-64-1)	Listed.
Ethyl acetate (CAS 141-78-6)	Listed.
Ethyl alcohol (CAS 64-17-5)	Listed.
Ethyl ether (CAS 60-29-7)	Listed.
Ethyl formate (CAS 109-94-4)	Listed.
Formic acid (CAS 64-18-6)	Listed.
Isobutyl acetate (CAS 110-19-0)	Listed.
Isobutyl alcohol (CAS 78-83-1)	Listed.
Isopropyl acetate (CAS 108-21-4)	Listed.
Isopropyl alcohol (CAS 67-63-0)	Listed.
Methyl acetate (CAS 79-20-9)	Listed.
n-Amyl alcohol (CAS 71-41-0)	Listed.
n-Butyl acetate (CAS 123-86-4)	Listed.
n-Butyl alcohol (CAS 71-36-3)	Listed.
n-Heptane (CAS 142-82-5)	Listed.
n-Pentane (CAS 109-66-0)	Listed.
Propyl acetate (CAS 109-60-4)	Listed.
Propyl alcohol (CAS 71-23-8)	Listed.
sec-Butyl alcohol (CAS 78-92-2)	Listed.
tert-Butyl methyl ether (CAS 1634-04-4)	Listed.
Triethylamine (CAS 121-44-8)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes
	Delayed Hazard - Yes
	Fire Hazard - Yes
	Pressure Hazard - No
	Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

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

tert-Butyl methyl ether (CAS 1634-04-4)
Triethylamine (CAS 121-44-8)

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

Ethyl ether (CAS 60-29-7)
n-Pentane (CAS 109-66-0)

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

2-Butanone (CAS 78-93-3)	6714
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))

2-Butanone (CAS 78-93-3)	35 %WV
Acetone (CAS 67-64-1)	35 %WV
Ethyl ether (CAS 60-29-7)	35 %WV

DEA Exempt Chemical Mixtures Code Number

2-Butanone (CAS 78-93-3)	6714
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

2-Butanone (CAS 78-93-3)	Low priority
Acetic acid (CAS 64-19-7)	High priority
Acetone (CAS 67-64-1)	Low priority
Ethyl acetate (CAS 141-78-6)	Low priority
Ethyl alcohol (CAS 64-17-5)	Low priority
Ethyl formate (CAS 109-94-4)	Low priority
Formic acid (CAS 64-18-6)	High priority
Isoamyl alcohol (CAS 123-51-3)	Other Flavoring Substances with OSHA PEL's
Isobutyl acetate (CAS 110-19-0)	Low priority
Isobutyl alcohol (CAS 78-83-1)	Low priority
Isopropyl acetate (CAS 108-21-4)	Low priority
Isopropyl alcohol (CAS 67-63-0)	Low priority
Methyl acetate (CAS 79-20-9)	Low priority
Methyl sulfoxide (CAS 67-68-5)	Low priority
n-Butyl acetate (CAS 123-86-4)	Low priority
n-Butyl alcohol (CAS 71-36-3)	Low priority
Propyl acetate (CAS 109-60-4)	Low priority
Propyl alcohol (CAS 71-23-8)	Low priority
Triethylamine (CAS 121-44-8)	Other Flavoring Substances with OSHA PEL's

US state regulations

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

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Ethyl alcohol (CAS 64-17-5)	Listed: April 29, 2011
	Listed: July 1, 1988

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

Ethyl alcohol (CAS 64-17-5)	Listed: October 1, 1987
N,N-Dimethylacetamide (CAS 127-19-5)	Listed: May 21, 2010

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

N,N-Dimethylacetamide (CAS 127-19-5)	Listed: December 20, 2013
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US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

2-Butanone (CAS 78-93-3)
Acetone (CAS 67-64-1)
Isopropyl alcohol (CAS 67-63-0)
N,N-Dimethylacetamide (CAS 127-19-5)
n-Pentane (CAS 109-66-0)
tert-Butyl methyl ether (CAS 1634-04-4)
Triethylamine (CAS 121-44-8)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	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

Country(s) or region	Inventory name	On inventory (yes/no)*
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	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	11-27-2019
Revision date	11-02-2020
Version #	04
NFPA ratings	Health: 3 Flammability: 3 Instability: 0

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Revision information Transport Information: Proper Shipping Name/Packing Group