SAFETY DATA SHEET

1. Identification

Product identifier	**Arkansas Residual Solvent Mix 2**	
Other means of identification		
Item	M-ARRSMIX2AN99	
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 Direct	800-452-9994 610-692-3026
Website	www.chemservice.com	
E-mail	info@chemservice.com	
Emergency phone number	Chemtrec US Chemtrec outside US	800-424-9300 +1 703-527-3887

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Carcinogenicity	Category 2
	Reproductive toxicity	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Suspected of causing cancer. May damage fertility or the unborn child. Toxic to aquatic life. 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. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If exposed or concerned: Get medical advice/attention.
Storage	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	97.671% of the mixture consists of component(s) of unknown acute inhalation toxicity. 97.671% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 97.671% 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	%
Methyl sulfoxide	Dimethyl sulfoxide(DMSO)	67-68-5	97.671
Cyclohexane		110-82-7	0.388
Methanol		67-56-1	0.3
Ethylbenzene		100-41-4	0.217
m-Xylene		108-38-3	0.217
o-Xylene		95-47-6	0.217
p-Xylene		106-42-3	0.217
N,N-Dimethylacetamide		127-19-5	0.109
Toluene		108-88-3	0.089
N,N-Dimethylformamide		68-12-2	0.088
Tetrahydrofuran		109-99-9	0.072
Ethylene glycol		107-21-1	0.062
Methylene chloride		75-09-2	0.06
Acetonitrile		75-05-8	0.041
1,4-Dioxane		123-91-1	0.038
2-Methylpentane		107-83-5	0.029
3-Methylpentane		96-14-0	0.029
Diisopropane		79-29-8	0.029
Neohexane		75-83-2	0.029
n-Hexane		110-54-3	0.029
Pyridine		110-86-1	0.02
2-Ethoxyethanol		110-80-5	0.016
Tetrahydrothiophene-1,1-dioxide		126-33-0	0.016
1,2-Dimethoxyethane		110-71-4	0.01
Isopropylbenzene		98-82-8	0.007
Benzene		71-43-2	<0.001

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information 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.

5. Fire-fighting measures

Suitable extinguishing media Foam. Powder. Carbon dioxide (CO2).

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

Specific hazards arising from the chemical 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	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	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. 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	Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. 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.
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. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly closed container. 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 Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	5 ppm
	TWA	1 ppm
Methylene chloride (CAS 75-09-2)	STEL	125 ppm
	TWA	25 ppm

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

Components	Type	Value
1,4-Dioxane (CAS 123-91-1)	PEL	360 mg/m3
		100 ppm
2-Ethoxyethanol (CAS 110-80-5)	PEL	740 mg/m3
		200 ppm
Acetonitrile (CAS 75-05-8)	PEL	70 mg/m3
		40 ppm
Cyclohexane (CAS 110-82-7)	PEL	1050 mg/m3
		300 ppm
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3

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

Components	Type	Value
		100 ppm
Isopropylbenzene (CAS 98-82-8)	PEL	245 mg/m3
		50 ppm
Methanol (CAS 67-56-1)	PEL	260 mg/m3
		200 ppm
m-Xylene (CAS 108-38-3)	PEL	435 mg/m3
		100 ppm
N,N-Dimethylacetamide (CAS 127-19-5)	PEL	35 mg/m3
		10 ppm
N,N-Dimethylformamide (CAS 68-12-2)	PEL	30 mg/m3
		10 ppm
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3
		500 ppm
o-Xylene (CAS 95-47-6)	PEL	435 mg/m3
		100 ppm
p-Xylene (CAS 106-42-3)	PEL	435 mg/m3
		100 ppm
Pyridine (CAS 110-86-1)	PEL	15 mg/m3
		5 ppm
Tetrahydrofuran (CAS 109-99-9)	PEL	590 mg/m3
		200 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Benzene (CAS 71-43-2)	Ceiling	25 ppm
	TWA	10 ppm
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
1,4-Dioxane (CAS 123-91-1)	TWA	20 ppm	
2-Ethoxyethanol (CAS 110-80-5)	TWA	5 ppm	
2-Methylpentane (CAS 107-83-5)	STEL	1000 ppm	
	TWA	500 ppm	
3-Methylpentane (CAS 96-14-0)	STEL	1000 ppm	
	TWA	500 ppm	
Acetonitrile (CAS 75-05-8)	TWA	20 ppm	
Benzene (CAS 71-43-2)	STEL	2.5 ppm	
	TWA	0.5 ppm	
Cyclohexane (CAS 110-82-7)	TWA	100 ppm	
Diisopropane (CAS 79-29-8)	STEL	1000 ppm	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
	TWA	500 ppm	
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm	
Ethylene glycol (CAS 107-21-1)	STEL	10 mg/m3	Aerosol, inhalable.
		50 ppm	Vapor fraction
	TWA	25 ppm	Vapor fraction
Isopropylbenzene (CAS 98-82-8)	TWA	5 ppm	
Methanol (CAS 67-56-1)	STEL	250 ppm	
	TWA	200 ppm	
Methylene chloride (CAS 75-09-2)	TWA	50 ppm	
m-Xylene (CAS 108-38-3)	STEL	150 ppm	
	TWA	100 ppm	
N,N-Dimethylacetamide (CAS 127-19-5)	TWA	10 ppm	
N,N-Dimethylformamide (CAS 68-12-2)	TWA	5 ppm	
Neohexane (CAS 75-83-2)	STEL	1000 ppm	
	TWA	500 ppm	
n-Hexane (CAS 110-54-3)	STEL	1000 ppm	
	TWA	50 ppm	
o-Xylene (CAS 95-47-6)	STEL	150 ppm	
	TWA	100 ppm	
p-Xylene (CAS 106-42-3)	STEL	150 ppm	
	TWA	100 ppm	
Pyridine (CAS 110-86-1)	TWA	1 ppm	
Tetrahydrofuran (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	
Toluene (CAS 108-88-3)	TWA	20 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
1,4-Dioxane (CAS 123-91-1)	Ceiling	3.6 mg/m3
		1 ppm
2-Ethoxyethanol (CAS 110-80-5)	TWA	1.8 mg/m3
		0.5 ppm
2-Methylpentane (CAS 107-83-5)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 ppm
3-Methylpentane (CAS 96-14-0)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetonitrile (CAS 75-05-8)	TWA	34 mg/m3
		20 ppm
Benzene (CAS 71-43-2)	STEL	1 ppm
	TWA	0.1 ppm
Cyclohexane (CAS 110-82-7)	TWA	1050 mg/m3
		300 ppm
Diisopropane (CAS 79-29-8)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 ppm
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 ppm
Isopropylbenzene (CAS 98-82-8)	TWA	245 mg/m3
		50 ppm
Methanol (CAS 67-56-1)	STEL	325 mg/m3
		250 ppm
	TWA	260 mg/m3
		200 ppm
m-Xylene (CAS 108-38-3)	STEL	655 mg/m3
		150 ppm
	TWA	435 mg/m3
		100 ppm
N,N-Dimethylacetamide (CAS 127-19-5)	TWA	35 mg/m3
		10 ppm
N,N-Dimethylformamide (CAS 68-12-2)	TWA	30 mg/m3
		10 ppm
Neohexane (CAS 75-83-2)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 ppm
n-Hexane (CAS 110-54-3)	Ceiling	1800 mg/m3
		510 ppm
	TWA	180 mg/m3
		50 ppm
o-Xylene (CAS 95-47-6)	STEL	655 mg/m3
		150 ppm
	TWA	435 mg/m3
		100 ppm
p-Xylene (CAS 106-42-3)	STEL	655 mg/m3
		150 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
	TWA	435 mg/m3
		100 ppm
Pyridine (CAS 110-86-1)	TWA	15 mg/m3
		5 ppm
Tetrahydrofuran (CAS 109-99-9)	STEL	735 mg/m3
		250 ppm
	TWA	590 mg/m3
		200 ppm
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Methyl sulfoxide (CAS 67-68-5)	TWA	250 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-Ethoxyethanol (CAS 110-80-5)	100 mg/g	2-Ethoxyacetic acid	Creatinine in urine	*
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmercapturic acid	Creatinine in urine	*
Ethylbenzene (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*
Methylene chloride (CAS 75-09-2)	0.3 mg/l	Dichloromethane	Urine	*
m-Xylene (CAS 108-38-3)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*
N,N-Dimethylacetamide (CAS 127-19-5)	30 mg/g	N-Methylacetamide	Creatinine in urine	*
N,N-Dimethylformamide (CAS 68-12-2)	30 mg/l	Sum of N-Methylformamide and N-(Hydroxymethyl)-N-Methylformamide	Urine	*
	30 mg/l	N-Acetyl-S-(N-methylcarbamoyl) cysteine	Urine	*
n-Hexane (CAS 110-54-3)	0.5 mg/l	2,5-Hexanedione, without hydrolysis	Urine	*
o-Xylene (CAS 95-47-6)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*
p-Xylene (CAS 106-42-3)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*
Tetrahydrofuran (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

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

Exposure guidelines

US - California OELs: Skin designation

1,2-Dimethoxyethane (CAS 110-71-4)	Can be absorbed through the skin.
1,4-Dioxane (CAS 123-91-1)	Can be absorbed through the skin.
2-Ethoxyethanol (CAS 110-80-5)	Can be absorbed through the skin.
Acetonitrile (CAS 75-05-8)	Can be absorbed through the skin.
Benzene (CAS 71-43-2)	Can be absorbed through the skin.
Isopropylbenzene (CAS 98-82-8)	Can be absorbed through the skin.
Methanol (CAS 67-56-1)	Can be absorbed through the skin.
N,N-Dimethylacetamide (CAS 127-19-5)	Can be absorbed through the skin.
N,N-Dimethylformamide (CAS 68-12-2)	Can be absorbed through the skin.
n-Hexane (CAS 110-54-3)	Can be absorbed through the skin.
Toluene (CAS 108-88-3)	Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

1,4-Dioxane (CAS 123-91-1)	Skin designation applies.
2-Ethoxyethanol (CAS 110-80-5)	Skin designation applies.
Acetonitrile (CAS 75-05-8)	Skin designation applies.
Isopropylbenzene (CAS 98-82-8)	Skin designation applies.
Methanol (CAS 67-56-1)	Skin designation applies.
N,N-Dimethylacetamide (CAS 127-19-5)	Skin designation applies.
Toluene (CAS 108-88-3)	Skin designation applies.

US - Tennessee OELs: Skin designation

1,4-Dioxane (CAS 123-91-1)	Can be absorbed through the skin.
2-Ethoxyethanol (CAS 110-80-5)	Can be absorbed through the skin.
Isopropylbenzene (CAS 98-82-8)	Can be absorbed through the skin.
Methanol (CAS 67-56-1)	Can be absorbed through the skin.
N,N-Dimethylacetamide (CAS 127-19-5)	Can be absorbed through the skin.
N,N-Dimethylformamide (CAS 68-12-2)	Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

1,4-Dioxane (CAS 123-91-1)	Danger of cutaneous absorption
2-Ethoxyethanol (CAS 110-80-5)	Danger of cutaneous absorption
Acetonitrile (CAS 75-05-8)	Danger of cutaneous absorption
Benzene (CAS 71-43-2)	Danger of cutaneous absorption
Methanol (CAS 67-56-1)	Danger of cutaneous absorption
N,N-Dimethylacetamide (CAS 127-19-5)	Danger of cutaneous absorption
N,N-Dimethylformamide (CAS 68-12-2)	Danger of cutaneous absorption
n-Hexane (CAS 110-54-3)	Danger of cutaneous absorption
Tetrahydrofuran (CAS 109-99-9)	Danger of cutaneous absorption

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

2-Ethoxyethanol (CAS 110-80-5)	Can be absorbed through the skin.
Isopropylbenzene (CAS 98-82-8)	Can be absorbed through the skin.
Methanol (CAS 67-56-1)	Can be absorbed through the skin.
N,N-Dimethylacetamide (CAS 127-19-5)	Can be absorbed through the skin.
N,N-Dimethylformamide (CAS 68-12-2)	Can be absorbed through the skin.

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

1,4-Dioxane (CAS 123-91-1)	Can be absorbed through the skin.
2-Ethoxyethanol (CAS 110-80-5)	Can be absorbed through the skin.
Isopropylbenzene (CAS 98-82-8)	Can be absorbed through the skin.
N,N-Dimethylacetamide (CAS 127-19-5)	Can be absorbed through the skin.
N,N-Dimethylformamide (CAS 68-12-2)	Can be absorbed through the skin.

Appropriate engineering controls	Good general ventilation 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.

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	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. 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	65.21 °F (18.45 °C) estimated
Initial boiling point and boiling range	372.2 °F (189 °C) estimated
Flash point	203.0 °F (95.0 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.81 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	419 °F (215 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.09435 g/cm3 estimated
Explosive properties	Not explosive.
Flammability class	Combustible IIIB estimated
Oxidizing properties	Not oxidizing.
Percent volatile	99.66 % estimated
Specific gravity	1.09 estimated
VOC	99.67 % 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 temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Alkaline metals. Isocyanates.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Not known.

Components	Species	Test Results
1,2-Dimethoxyethane (CAS 110-71-4)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg, 24 Hours
Inhalation		
Vapor		
LC50	Rat	20 - 63 mg/l, 6 Hours
Oral		
LD50	Rat	5370 mg/kg
1,4-Dioxane (CAS 123-91-1)		
Acute		
Dermal		
LD50	Rabbit	7600 mg/kg
Oral		
LD50	Rat	5150 mg/kg
2-Ethoxyethanol (CAS 110-80-5)		
Acute		
Inhalation		
Vapor		
LC50	Rat	7.36 mg/l, 8 Hours
Acetonitrile (CAS 75-05-8)		
Acute		
Dermal		
LD50	Rabbit	390 mg/kg
Oral		
LD50	Rat	158 mg/kg

Components	Species	Test Results
Benzene (CAS 71-43-2)		
Acute		
Inhalation		
Vapor		
LC50	Rat	43770 mg/m3, 4 Hours
Oral		
LD50	Rat	690 - 1230 mg/kg
Cyclohexane (CAS 110-82-7)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
Vapor		
LC50	Rat	> 32880 mg/m3, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg
Ethylbenzene (CAS 100-41-4)		
Acute		
Oral		
LD50	Rat	3500 mg/kg
Ethylene glycol (CAS 107-21-1)		
Acute		
Dermal		
LD50	Rabbit	9530 mg/kg
Oral		
LD50	Rat	5.89 g/kg
Isopropylbenzene (CAS 98-82-8)		
Acute		
Dermal		
LD50	Rabbit	> 3160 mg/kg, 24 Hours
Inhalation		
Vapor		
LC50	Mouse	10 mg/l, 7 Hours
Methanol (CAS 67-56-1)		
Acute		
Dermal		
LD50	Rabbit	15800 mg/kg
Inhalation		
Vapor		
LC50	Rat	82.1 mg/l, 6 Hours
Methyl sulfoxide (CAS 67-68-5)		
Acute		
Dermal		
LD50	Rat	40000 mg/kg
Oral		
LD50	Rat	28300 mg/kg
Methylene chloride (CAS 75-09-2)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg

Components	Species	Test Results
Inhalation		
LC50	-	40200 mg/m3, 6 Hours
Oral		
LD50	Rat	1600 mg/kg
m-Xylene (CAS 108-38-3)		
Acute		
Dermal		
LD50	Rabbit	12100 mg/kg
Oral		
LD50	Rat	4300 mg/kg
N,N-Dimethylacetamide (CAS 127-19-5)		
Acute		
Oral		
LD50	Rat	4800 mg/kg
N,N-Dimethylformamide (CAS 68-12-2)		
Acute		
Dermal		
LD50	Rabbit	1500 mg/kg
Inhalation		
Vapor		
LC50	Rat	> 5.85 mg/l, 4 Hours
Oral		
LD50	Rat	2200 - 7550 mg/kg
n-Hexane (CAS 110-54-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 4 Hours
Inhalation		
Vapor		
LC50	Rat	> 31.86 mg/l, 4 Hours
Oral		
LD50	Rat	28710 mg/kg
o-Xylene (CAS 95-47-6)		
Acute		
Dermal		
LD50	Rabbit	> 43 g/kg
Oral		
LD50	Rat	3523 mg/kg
p-Xylene (CAS 106-42-3)		
Acute		
Dermal		
LD50	Rabbit	> 43 g/kg
Oral		
LD50	Rat	3523 mg/kg
Pyridine (CAS 110-86-1)		
Acute		
Dermal		
LD50	Rabbit	1000 - 2000 mg/kg, 24 Hours
Oral		
LD50	Rat	0.8 g/kg

Components	Species	Test Results
Tetrahydrofuran (CAS 109-99-9)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	> 14.7 mg/l, 6 Hours
Oral		
LD50	Rat	1.65 mg/kg
Tetrahydrothiophene-1,1-dioxide (CAS 126-33-0)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	12000 mg/m3, 4 Hours
Oral		
LD50	Rat	1941 mg/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	12.5 - 28.8 mg/l, 4 Hours

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary 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

1,4-Dioxane (CAS 123-91-1)	2B Possibly carcinogenic to humans.
Benzene (CAS 71-43-2)	1 Carcinogenic to humans.
Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.
Isopropylbenzene (CAS 98-82-8)	2B Possibly carcinogenic to humans.
Methylene chloride (CAS 75-09-2)	2A Probably carcinogenic to humans.
m-Xylene (CAS 108-38-3)	3 Not classifiable as to carcinogenicity to humans.
N,N-Dimethylacetamide (CAS 127-19-5)	2B Possibly carcinogenic to humans.
N,N-Dimethylformamide (CAS 68-12-2)	2A Probably carcinogenic to humans.
o-Xylene (CAS 95-47-6)	3 Not classifiable as to carcinogenicity to humans.
p-Xylene (CAS 106-42-3)	3 Not classifiable as to carcinogenicity to humans.
Pyridine (CAS 110-86-1)	2B Possibly carcinogenic to humans.
Tetrahydrofuran (CAS 109-99-9)	2B Possibly carcinogenic to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Benzene (CAS 71-43-2)	Cancer
Methylene chloride (CAS 75-09-2)	Cancer

US. National Toxicology Program (NTP) Report on Carcinogens

1,4-Dioxane (CAS 123-91-1)	Reasonably Anticipated to be a Human Carcinogen.
Benzene (CAS 71-43-2)	Known To Be Human Carcinogen.
Isopropylbenzene (CAS 98-82-8)	Reasonably Anticipated to be a Human Carcinogen.
Methylene chloride (CAS 75-09-2)	Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity May damage fertility or the unborn child.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Components		Species	Test Results
1,4-Dioxane (CAS 123-91-1)			
Aquatic			
Acute			
Fish	LC50	Inland silverside (Menidia beryllina)	6700 mg/l, 96 hours
2-Ethoxyethanol (CAS 110-80-5)			
Aquatic			
Acute			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 10000 mg/l, 96 hours
Acetonitrile (CAS 75-05-8)			
Aquatic			
Acute			
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
Benzene (CAS 71-43-2)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	>= 8.76 - <= 15.6 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	5.9 mg/l, 96 hours
Cyclohexane (CAS 110-82-7)			
Aquatic			
Acute			
Fish	LC50	Striped bass (Morone saxatilis)	8.3 mg/l, 96 hours
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	>= 1.37 - <= 4.4 mg/l, 48 hours
Fish	LC50	Atlantic silverside (Menidia menidia)	>= 4.4 - <= 5.7 mg/l, 96 hours
Ethylene glycol (CAS 107-21-1)			
Aquatic			
Acute			
Fish	LC50	Fathead minnow (Pimephales promelas)	8050 mg/l, 96 hours
Isopropylbenzene (CAS 98-82-8)			
Aquatic			
Acute			
Crustacea	EC50	Brine shrimp (Artemia sp.)	>= 3.55 - <= 11.29 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.7 mg/l, 96 hours
Methanol (CAS 67-56-1)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours

Components		Species	Test Results
Methyl sulfoxide (CAS 67-68-5)			
Aquatic			
Acute			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	>= 33000 - <= 37000 mg/l, 96 hours
Methylene chloride (CAS 75-09-2)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	1250 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	>= 140.8 - <= 277.8 mg/l, 96 hours
m-Xylene (CAS 108-38-3)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	>= 2.81 - <= 5 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	8.4 mg/l, 96 hours
N,N-Dimethylformamide (CAS 68-12-2)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	>= 12.5 - <= 14.4 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	>= 5714 - <= 18967 mg/l, 96 hours
n-Hexane (CAS 110-54-3)			
Aquatic			
Acute			
Fish	LC50	Fathead minnow (Pimephales promelas)	>= 2.101 - <= 2.981 mg/l, 96 hours
o-Xylene (CAS 95-47-6)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	>= 0.78 - <= 2.51 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	>= 5.59 - <= 11.6 mg/l, 96 hours
p-Xylene (CAS 106-42-3)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	>= 3.55 - <= 6.31 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.6 mg/l, 96 hours
Pyridine (CAS 110-86-1)			
Aquatic			
Acute			
Fish	LC50	Chinook salmon (Oncorhynchus tshawytscha)	2.9 mg/l, 96 hours
Tetrahydrofuran (CAS 109-99-9)			
Aquatic			
Acute			
Fish	LC50	Fathead minnow (Pimephales promelas)	>= 1970 - <= 2360 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	>= 5.46 - <= 9.83 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	>= 5.89 - <= 7.81 mg/l, 96 hours

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

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

1,2-Dimethoxyethane	-0.21
1,4-Dioxane	-0.27
2-Ethoxyethanol	-0.32
2-Methylpentane	3.21
3-Methylpentane	3.6
Acetonitrile	-0.34
Benzene	2.13
Cyclohexane	3.44
Diisopropane	3.42
Ethylbenzene	3.15
Ethylene glycol	-1.36
Isopropylbenzene	3.66
Methanol	-0.77
Methyl sulfoxide	-1.35
Methylene chloride	1.25
m-Xylene	3.2
N,N-Dimethylacetamide	-0.77
N,N-Dimethylformamide	-1.01
Neohexane	3.82
n-Hexane	3.9
o-Xylene	3.12
p-Xylene	3.15
Pyridine	0.65
Tetrahydrofuran	0.46
Tetrahydrothiophene-1,1-dioxide	-0.77
Toluene	2.73

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 Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. 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 D018: Waste Benzene
D038: Waste Pyridine
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 I
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions T11, TP1, TP27
Packaging exceptions 150

Packaging non bulk	201
Packaging bulk	243

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s.
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	I
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	I
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.

Toxic Substances Control Act (TSCA) All components of the mixture on the TSCA 8(b) inventory are designated “active”. This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

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

1,2-Dimethoxyethane (CAS 110-71-4)	1.0 % One-Time Export Notification only.
2-Ethoxyethanol (CAS 110-80-5)	1.0 % One-Time Export Notification only.
Methylene chloride (CAS 75-09-2)	0.1 % Annual Export Notification required.

CERCLA Hazardous Substance List (40 CFR 302.4)

1,2-Dimethoxyethane (CAS 110-71-4)	Listed.
1,4-Dioxane (CAS 123-91-1)	Listed.
2-Ethoxyethanol (CAS 110-80-5)	Listed.
2-Methylpentane (CAS 107-83-5)	Listed.
3-Methylpentane (CAS 96-14-0)	Listed.
Acetonitrile (CAS 75-05-8)	Listed.
Benzene (CAS 71-43-2)	Listed.
Cyclohexane (CAS 110-82-7)	Listed.
Diisopropane (CAS 79-29-8)	Listed.
Ethylbenzene (CAS 100-41-4)	Listed.
Ethylene glycol (CAS 107-21-1)	Listed.
Isopropylbenzene (CAS 98-82-8)	Listed.
Methanol (CAS 67-56-1)	Listed.
Methylene chloride (CAS 75-09-2)	Listed.
m-Xylene (CAS 108-38-3)	Listed.
N,N-Dimethylformamide (CAS 68-12-2)	Listed.
Neohexane (CAS 75-83-2)	Listed.
n-Hexane (CAS 110-54-3)	Listed.
o-Xylene (CAS 95-47-6)	Listed.
p-Xylene (CAS 106-42-3)	Listed.
Pyridine (CAS 110-86-1)	Listed.
Tetrahydrofuran (CAS 109-99-9)	Listed.
Toluene (CAS 108-88-3)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Benzene (CAS 71-43-2)	Cancer
Methylene chloride (CAS 75-09-2)	Cancer
Benzene (CAS 71-43-2)	Central nervous system
Methylene chloride (CAS 75-09-2)	Heart
Benzene (CAS 71-43-2)	Blood
Methylene chloride (CAS 75-09-2)	Central nervous system
Benzene (CAS 71-43-2)	Aspiration
Methylene chloride (CAS 75-09-2)	Liver
Benzene (CAS 71-43-2)	Skin
Methylene chloride (CAS 75-09-2)	Skin irritation
Benzene (CAS 71-43-2)	Eye
Methylene chloride (CAS 75-09-2)	Eye irritation
Benzene (CAS 71-43-2)	respiratory tract irritation
	Flammability

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Carcinogenicity
Reproductive toxicity

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Ethylbenzene	100-41-4	0.217

Other federal regulations

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

1,2-Dimethoxyethane (CAS 110-71-4)
1,4-Dioxane (CAS 123-91-1)
2-Ethoxyethanol (CAS 110-80-5)
Acetonitrile (CAS 75-05-8)

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Ethylene glycol (CAS 107-21-1)
Isopropylbenzene (CAS 98-82-8)
Methanol (CAS 67-56-1)
Methylene chloride (CAS 75-09-2)
m-Xylene (CAS 108-38-3)
N,N-Dimethylformamide (CAS 68-12-2)
n-Hexane (CAS 110-54-3)
o-Xylene (CAS 95-47-6)
p-Xylene (CAS 106-42-3)
Toluene (CAS 108-88-3)

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

Not regulated.

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

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

Toluene (CAS 108-88-3)	6594

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

Toluene (CAS 108-88-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Toluene (CAS 108-88-3)	594

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

Methyl sulfoxide (CAS 67-68-5)	Low priority
Pyridine (CAS 110-86-1)	Low priority

US state regulations

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

1,2-Dimethoxyethane (CAS 110-71-4)
1,4-Dioxane (CAS 123-91-1)
2-Ethoxyethanol (CAS 110-80-5)
Acetonitrile (CAS 75-05-8)
Benzene (CAS 71-43-2)
Cyclohexane (CAS 110-82-7)
Ethylbenzene (CAS 100-41-4)
Ethylene glycol (CAS 107-21-1)
Isopropylbenzene (CAS 98-82-8)
Methanol (CAS 67-56-1)
Methylene chloride (CAS 75-09-2)
m-Xylene (CAS 108-38-3)
N,N-Dimethylacetamide (CAS 127-19-5)
N,N-Dimethylformamide (CAS 68-12-2)
n-Hexane (CAS 110-54-3)
o-Xylene (CAS 95-47-6)
p-Xylene (CAS 106-42-3)
Pyridine (CAS 110-86-1)
Tetrahydrofuran (CAS 109-99-9)
Toluene (CAS 108-88-3)

California Proposition 65

WARNING: This product can expose you to chemicals including N,N-Dimethylacetamide, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,4-Dioxane (CAS 123-91-1)	Listed: January 1, 1988
Benzene (CAS 71-43-2)	Listed: February 27, 1987
Ethylbenzene (CAS 100-41-4)	Listed: June 11, 2004
Isopropylbenzene (CAS 98-82-8)	Listed: April 6, 2010
Methylene chloride (CAS 75-09-2)	Listed: April 1, 1988
N,N-Dimethylacetamide (CAS 127-19-5)	Listed: September 13, 2019
N,N-Dimethylformamide (CAS 68-12-2)	Listed: October 27, 2017
Pyridine (CAS 110-86-1)	Listed: May 17, 2002

California Proposition 65 - CRT: Listed date/Developmental toxin

2-Ethoxyethanol (CAS 110-80-5)	Listed: January 1, 1989
Benzene (CAS 71-43-2)	Listed: December 26, 1997
Ethylene glycol (CAS 107-21-1)	Listed: June 19, 2015
Methanol (CAS 67-56-1)	Listed: March 16, 2012
N,N-Dimethylacetamide (CAS 127-19-5)	Listed: May 21, 2010
Toluene (CAS 108-88-3)	Listed: January 1, 1991

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

2-Ethoxyethanol (CAS 110-80-5)	Listed: January 1, 1989
Benzene (CAS 71-43-2)	Listed: December 26, 1997
N,N-Dimethylacetamide (CAS 127-19-5)	Listed: May 21, 2010
n-Hexane (CAS 110-54-3)	Listed: December 15, 2017

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 08-03-2022

Version # 01

NFPA ratings Health: 0
Flammability: 0
Instability: 0

Disclaimer

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