SAFETY DATA SHEET

1. Identification

Product identifier **Washington VPH Primary Dilution Standard Mixture (with Surro**

Other means of identification

Item M-USTVPHWA1M5

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, oral	Category 3
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 3
	Serious eye damage/eye irritation	Category 2A
	Germ cell mutagenicity	Category 1
	Carcinogenicity	Category 1A
	Reproductive toxicity (fertility, the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 1
	Specific target organ toxicity, repeated exposure	Category 1
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. Toxic if swallowed. Toxic in contact with skin. Causes serious eye irritation. Toxic if inhaled. May cause genetic defects. May cause cancer. Suspected of damaging fertility. Suspected of damaging the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure. Harmful 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. 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. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Immediately call a poison center/doctor. 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. Specific treatment (see this label). Rinse mouth. If eye irritation persists: Get medical advice/attention. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.
Supplemental information	1% of the mixture consists of component(s) of unknown acute oral toxicity. 1.6% of the mixture consists of component(s) of unknown acute dermal toxicity. 2% of the mixture consists of component(s) of unknown acute inhalation toxicity. 98% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 97.6% 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	%
Methanol		67-56-1	90 - 100
1,2,3-Trimethylbenzene		526-73-8	0.2
1-Methylnaphthalene		90-12-0	0.2
2,5-Dibromotoluene		615-59-8	0.2
Benzene		71-43-2	0.2
Ethylbenzene		100-41-4	0.2
m-Xylene		108-38-3	0.2
Naphthalene		91-20-3	0.2
n-Decane		124-18-5	0.2
n-Dodecane		112-40-3	0.2
n-Hexane		110-54-3	0.2
n-Octane		111-65-9	0.2
n-Pentane		109-66-0	0.2
o-Xylene		95-47-6	0.2
p-Xylene		106-42-3	0.2
tert-Butyl methyl ether		1634-04-4	0.2
Toluene		108-88-3	0.2

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

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. Call a POISON CENTER or doctor/physician if you feel unwell. Get medical attention if irritation develops and persists.
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	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. 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. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off immediately all contaminated clothing. IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
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. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. 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	Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. 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. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. 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	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. 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. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. 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

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. 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. Do not taste or swallow. Avoid contact with skin. Avoid contact with eyes. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Avoid contact with clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Do not empty into drains.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

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. Avoid spark promoters. Eliminate sources of ignition. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Refrigeration recommended. Store away from incompatible materials (see Section 10 of the SDS). Keep in an area equipped with sprinklers.

8. Exposure controls/personal protection

Occupational 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

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

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3
		100 ppm
Methanol (CAS 67-56-1)	PEL	260 mg/m3
		200 ppm
m-Xylene (CAS 108-38-3)	PEL	435 mg/m3
		100 ppm
Naphthalene (CAS 91-20-3)	PEL	50 mg/m3
		10 ppm
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3
		500 ppm
n-Octane (CAS 111-65-9)	PEL	2350 mg/m3
		500 ppm
n-Pentane (CAS 109-66-0)	PEL	2950 mg/m3
		1000 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

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
1,2,3-Trimethylbenzene (CAS 526-73-8)	TWA	25 ppm
1-Methylnaphthalene (CAS 90-12-0)	TWA	0.5 ppm
Benzene (CAS 71-43-2)	STEL	2.5 ppm
	TWA	0.5 ppm
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
m-Xylene (CAS 108-38-3)	STEL	150 ppm
	TWA	100 ppm
Naphthalene (CAS 91-20-3)	STEL	15 ppm
	TWA	10 ppm
n-Hexane (CAS 110-54-3)	TWA	50 ppm
n-Octane (CAS 111-65-9)	TWA	300 ppm
n-Pentane (CAS 109-66-0)	TWA	600 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
tert-Butyl methyl ether (CAS 1634-04-4)	TWA	50 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
1,2,3-Trimethylbenzene (CAS 526-73-8)	TWA	125 mg/m3
		25 ppm
Benzene (CAS 71-43-2)	STEL	1 ppm
	TWA	0.1 ppm
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 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
Naphthalene (CAS 91-20-3)	STEL	75 mg/m3
		15 ppm
	TWA	50 mg/m3
		10 ppm
n-Hexane (CAS 110-54-3)	TWA	180 mg/m3
		50 ppm
n-Octane (CAS 111-65-9)	Ceiling	1800 mg/m3
		385 ppm
	TWA	350 mg/m3
		75 ppm
n-Pentane (CAS 109-66-0)	Ceiling	1800 mg/m3
		610 ppm
	TWA	350 mg/m3
		120 ppm
o-Xylene (CAS 95-47-6)	STEL	655 mg/m3
		150 ppm
	TWA	435 mg/m3
		100 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
p-Xylene (CAS 106-42-3)	STEL	655 mg/m3 150 ppm
	TWA	435 mg/m3 100 ppm
Toluene (CAS 108-88-3)	STEL	560 mg/m3 150 ppm
	TWA	375 mg/m3 100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmercapturic acid	Creatinine in urine	*
Ethylbenzene (CAS 100-41-4)	0.7 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*
m-Xylene (CAS 108-38-3)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*
n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedion, 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	*
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

Benzene (CAS 71-43-2)	Can be absorbed through the skin.
Methanol (CAS 67-56-1)	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

Methanol (CAS 67-56-1)	Skin designation applies.
Toluene (CAS 108-88-3)	Skin designation applies.

US - Tennesse OELs: Skin designation

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

US ACGIH Threshold Limit Values: Skin designation

1-Methylnaphthalene (CAS 90-12-0)	Can be absorbed through the skin.
Benzene (CAS 71-43-2)	Can be absorbed through the skin.
Methanol (CAS 67-56-1)	Can be absorbed through the skin.
Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.
n-Hexane (CAS 110-54-3)	Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

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

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.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear eye/face protection. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves.

Other Wear appropriate chemical resistant clothing.

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or 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	-144.04 °F (-97.8 °C) estimated
Initial boiling point and boiling range	148.46 °F (64.7 °C) estimated
Flash point	53.6 °F (12.0 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	7.3 % estimated
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	169.3 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	867.2 °F (464 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.787857 g/cm3 estimated
Flammability class	Flammable IB estimated
Percent volatile	97.6 % estimated
Specific gravity	0.79 estimated
VOC (Weight %)	97.6 % 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

Ingestion	Toxic if swallowed.
Inhalation	Toxic by inhalation. May cause damage to organs by inhalation.
Skin contact	Toxic in contact with skin.
Eye contact	Causes serious eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity Toxic by inhalation. Toxic if swallowed. Toxic in contact with skin. Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

Components	Species	Test Results
1,2,3-Trimethylbenzene (CAS 526-73-8)		
Acute		
Oral		
LD50	Rat	8970 mg/kg
1-Methylnaphthalene (CAS 90-12-0)		
Acute		
Oral		
LD50	Rat	1840 mg/kg
Benzene (CAS 71-43-2)		
Acute		
Inhalation		
LC50	Mouse	9980 ppm
		9980 ppm, 7 Hours
	Rat	43767 mg/m3, 4 Hours
		13700 ppm, 4 Hours
		10000 ppm, 7 Hours
Oral		
LD50	Mouse	4700 mg/kg
	Rat	690 - 1230 mg/kg
Other		
LD50	Mouse	340 mg/kg
		0.28 ml/kg
	Rat	2.89 mg/kg
Ethylbenzene (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	17800 mg/kg
		17.8 ml/kg
Inhalation		
LC50	Mouse	> 8000 ppm, 20 Minutes
		35.5 mg/l
	Rat	4000 ppm
		55 mg/l
Oral		
LD50	Rat	3500 mg/kg
		3.5 g/kg
Other		
LD50	Mouse	2272 mg/kg

Components	Species	Test Results
Methanol (CAS 67-56-1)		
Acute		
Dermal		
LD50	Rabbit	15800 mg/kg
Inhalation		
LC50	Mouse	79.43 mg/l, 134 Minutes
	Rat	> 115.9 mg/l, 4 Hours
		64000 ppm, 4 Hours
		82.1 mg/l, 6 Hours
Oral		
LD50	Monkey	6000 mg/kg
	Mouse	7300 mg/kg
	Pig	> 5000 mg/kg
	Rabbit	14.4 g/kg
	Rat	5628 mg/kg
Other		
LD50	Guinea pig	3556 mg/kg
	Hamster	8555 mg/kg
	Mouse	4100 mg/kg
	Rabbit	1826 mg/kg
	Rat	2131 mg/kg
m-Xylene (CAS 108-38-3)		
Acute		
Dermal		
LD50	Rabbit	12100 mg/kg
Inhalation		
LC50	Mouse	5267 ppm, 6 Hours
	Rat	6700 ppm, 4 Hours
		5984 ppm, 6 Hours
Oral		
LD50	Mouse	1590 mg/kg
	Rat	4300 mg/kg
Naphthalene (CAS 91-20-3)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
	Rat	> 2500 mg/kg
Inhalation		
LC50	Rat	> 78 ppm, 4 Hours
		> 0.4 mg/l, 4 Hours
Oral		
LD50	Guinea pig	1200 mg/kg
	Mouse	533 mg/kg
	Rat	490 mg/kg
Other		
LD50	Mouse	100 mg/kg
n-Decane (CAS 124-18-5)		
Acute		
Dermal		
LD50	Rabbit	>= 3160 mg/kg
	Rat	> 2000 mg/kg

Components	Species	Test Results
Inhalation		
LC50	Monkey	>= 11160 mg/m3
	Mouse	72.3 mg/l, 2 Hours
	Rat	> 5000 mg/m3, 8 Hours
		> 4951 mg/m3, 4 Hours
		> 41 ppm, 8 Hours
Oral		
LD50	Rat	> 5000 mg/kg
n-Dodecane (CAS 112-40-3)		
Acute		
Dermal		
LD50	Rabbit	>= 3160 mg/kg
	Rat	> 2000 mg/kg
Inhalation		
LC50	Monkey	>= 11160 mg/m3
	Rat	> 5000 mg/m3, 8 Hours
		> 4951 mg/m3, 4 Hours
		> 41 ppm, 8 Hours
Oral		
LD50	Rat	> 5000 mg/kg
n-Hexane (CAS 110-54-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
		> 5 ml/kg
Inhalation		
LC50	Mouse	48000 ppm, 4 Hours
	Rat	> 5000 ppm, 24 Hours
		> 31.86 mg/l
		73860 ppm, 4 Hours
Oral		
LD50	Rat	24 ml/kg
		24 mg/kg
	Wistar rat	49 mg/kg
n-Octane (CAS 111-65-9)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 24.88 mg/l, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg
n-Pentane (CAS 109-66-0)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC100	Cat	90 %
LC50	Rat	> 25.3 mg/l, 4 Hours
Oral		
LD50	Rat	> 2000 mg/kg

Components	Species	Test Results
Other		
LD50	Mouse	446 mg/kg
o-Xylene (CAS 95-47-6)		
Acute		
Dermal		
LD50	Rabbit	> 5000 ml/kg
		> 43 g/kg
Inhalation		
LC50	Mouse	4595 ppm, 6 Hours
	Rat	6350 ppm, 4 Hours
		4330 ppm, 6 Hours
Oral		
LD50	Mouse	1590 mg/kg
	Rat	3523 mg/kg
		10 ml/kg
p-Xylene (CAS 106-42-3)		
Acute		
Dermal		
LD50	Rabbit	> 5000 ml/kg
		> 43 g/kg
Inhalation		
LC50	Mouse	3900 ppm, 6 Hours
	Rat	5922 ppm, 4 Hours
		4591 ppm, 6 Hours
Oral		
LD50	Mouse	1590 mg/kg
	Rat	3523 - 8600 mg/kg
Other		
LD50	Rat	3.8 mg/kg
tert-Butyl methyl ether (CAS 1634-04-4)		
Acute		
Dermal		
LD50	Rabbit	> 10000 mg/kg
	Rat	> 2000 mg/kg
Inhalation		
LC50	Rat	85 mg/l, 4 Hours
Oral		
LD50	Rat	> 2000 mg/kg
		4 ml/kg
Other		
LD50	Rabbit	> 10 ml/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
		14.1 ml/kg
Inhalation		
LC50	Mouse	6405 - 7436 ppm, 6 Hours
		5320 ppm, 8 Hours
		400 ppm, 24 Hours
	Rat	26700 ppm, 1 Hours
		12200 ppm, 2 Hours

Components	Species	Test Results
		8000 ppm, 4 Hours
		5879 - 6281 ppm, 6 Hours
		12.5 - 28.8 mg/l, 4 Hours
Oral		
LD50	Rat	2.6 g/kg
Other		
LD50	Mouse	59 mg/kg
	Rat	1332 mg/kg

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

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

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity May cause genetic defects.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Benzene (CAS 71-43-2)	1 Carcinogenic to humans.
Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.
m-Xylene (CAS 108-38-3)	3 Not classifiable as to carcinogenicity to humans.
Naphthalene (CAS 91-20-3)	2B Possibly 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.
tert-Butyl methyl ether (CAS 1634-04-4)	3 Not classifiable as to carcinogenicity to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Benzene (CAS 71-43-2)	Known To Be Human Carcinogen.
Naphthalene (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Benzene (CAS 71-43-2)	Cancer

Reproductive toxicity Suspected of damaging the unborn child. Suspected of damaging fertility.

Specific target organ toxicity - single exposure Causes damage to organs.

Specific target organ toxicity - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Causes damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Components		Species	Test Results
1-Methylnaphthalene (CAS 90-12-0)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	9 mg/l, 96 hours
Benzene (CAS 71-43-2)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	8.76 - 15.6 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	7.2 - 11.7 mg/l, 96 hours
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.37 - 4.4 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	7.5 - 11 mg/l, 96 hours

Components		Species	Test Results
Methanol (CAS 67-56-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
m-Xylene (CAS 108-38-3)			
Aquatic			
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
Naphthalene (CAS 91-20-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	1.11 - 1.68 mg/l, 96 hours
n-Decane (CAS 124-18-5)			
Aquatic			
Fish	LC50	Sheepshead minnow (Cyprinodon variegatus)	> 500 mg/l, 96 hours
n-Hexane (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours
o-Xylene (CAS 95-47-6)			
Aquatic			
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			
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
tert-Butyl methyl ether (CAS 1634-04-4)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	672 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)	8.11 mg/l, 96 hours

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

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

1-Methylnaphthalene	3.87
Benzene	2.13
Ethylbenzene	3.15
Methanol	-0.77
m-Xylene	3.2
Naphthalene	3.3
n-Decane	5.01
n-Hexane	3.9
n-Octane	5.18
n-Pentane	3.39
o-Xylene	3.12
p-Xylene	3.15
tert-Butyl methyl ether	0.94
Toluene	2.73

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

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. 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.

US RCRA Hazardous Waste U List: Reference

Benzene (CAS 71-43-2)	U019
Methanol (CAS 67-56-1)	U154
m-Xylene (CAS 108-38-3)	U239
Naphthalene (CAS 91-20-3)	U165
o-Xylene (CAS 95-47-6)	U239
p-Xylene (CAS 106-42-3)	U239
Toluene (CAS 108-88-3)	U220

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

14. Transport information

DOT

UN number	UN1230
UN proper shipping name	Methanol, solution
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, TP2
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1230
UN proper shipping name	Methanol solution
Transport hazard class(es)	
Class	3
Subsidiary risk	6.1(PGI, II)
Packing group	II
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1230
UN proper shipping name	METHANOL SOLUTION
Transport hazard class(es)	
Class	3
Subsidiary risk	6.1(PGI, II)
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D

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 available.

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.
All components are on the U.S. EPA TSCA Inventory List.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Benzene (CAS 71-43-2)	Listed.
Ethylbenzene (CAS 100-41-4)	Listed.
Methanol (CAS 67-56-1)	Listed.
m-Xylene (CAS 108-38-3)	Listed.
Naphthalene (CAS 91-20-3)	Listed.
n-Hexane (CAS 110-54-3)	Listed.
n-Octane (CAS 111-65-9)	Listed.
n-Pentane (CAS 109-66-0)	Listed.
o-Xylene (CAS 95-47-6)	Listed.
p-Xylene (CAS 106-42-3)	Listed.
tert-Butyl methyl ether (CAS 1634-04-4)	Listed.
Toluene (CAS 108-88-3)	Listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Benzene (CAS 71-43-2)	Cancer Central nervous system Blood Aspiration Skin Eye respiratory tract irritation Flammability

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)

Chemical name	CAS number	% by wt.
Methanol	67-56-1	90 - 100
Benzene	71-43-2	0.2
Ethylbenzene	100-41-4	0.2
Naphthalene	91-20-3	0.2

Other federal regulations

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

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Methanol (CAS 67-56-1)
m-Xylene (CAS 108-38-3)
Naphthalene (CAS 91-20-3)
n-Hexane (CAS 110-54-3)
o-Xylene (CAS 95-47-6)
p-Xylene (CAS 106-42-3)
tert-Butyl methyl ether (CAS 1634-04-4)
Toluene (CAS 108-88-3)

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

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

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

US state regulations

US. Massachusetts RTK - Substance List

1,2,3-Trimethylbenzene (CAS 526-73-8)
1-Methylnaphthalene (CAS 90-12-0)
Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Methanol (CAS 67-56-1)
m-Xylene (CAS 108-38-3)
Naphthalene (CAS 91-20-3)
n-Hexane (CAS 110-54-3)
n-Octane (CAS 111-65-9)
n-Pentane (CAS 109-66-0)
o-Xylene (CAS 95-47-6)
p-Xylene (CAS 106-42-3)
tert-Butyl methyl ether (CAS 1634-04-4)
Toluene (CAS 108-88-3)

US. New Jersey Worker and Community Right-to-Know Act

Benzene (CAS 71-43-2)	500 LBS
Ethylbenzene (CAS 100-41-4)	500 LBS
Methanol (CAS 67-56-1)	500 LBS
m-Xylene (CAS 108-38-3)	500 LBS
Naphthalene (CAS 91-20-3)	500 LBS
n-Hexane (CAS 110-54-3)	500 LBS
n-Pentane (CAS 109-66-0)	500 LBS
o-Xylene (CAS 95-47-6)	500 LBS
p-Xylene (CAS 106-42-3)	500 LBS
tert-Butyl methyl ether (CAS 1634-04-4)	500 LBS
Toluene (CAS 108-88-3)	500 LBS

US. Pennsylvania RTK - Hazardous Substances

1,2,3-Trimethylbenzene (CAS 526-73-8)
1-Methylnaphthalene (CAS 90-12-0)
Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Methanol (CAS 67-56-1)

m-Xylene (CAS 108-38-3)
Naphthalene (CAS 91-20-3)
n-Decane (CAS 124-18-5)
n-Hexane (CAS 110-54-3)
n-Octane (CAS 111-65-9)
n-Pentane (CAS 109-66-0)
o-Xylene (CAS 95-47-6)
p-Xylene (CAS 106-42-3)
tert-Butyl methyl ether (CAS 1634-04-4)
Toluene (CAS 108-88-3)

US. Rhode Island RTK

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Methanol (CAS 67-56-1)
m-Xylene (CAS 108-38-3)
Naphthalene (CAS 91-20-3)
n-Hexane (CAS 110-54-3)
n-Pentane (CAS 109-66-0)
o-Xylene (CAS 95-47-6)
p-Xylene (CAS 106-42-3)
tert-Butyl methyl ether (CAS 1634-04-4)
Toluene (CAS 108-88-3)

US. California Proposition 65

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

Benzene (CAS 71-43-2)	Listed: February 27, 1987
Ethylbenzene (CAS 100-41-4)	Listed: June 11, 2004
Naphthalene (CAS 91-20-3)	Listed: April 19, 2002

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

Benzene (CAS 71-43-2)	Listed: December 26, 1997
Methanol (CAS 67-56-1)	Listed: March 16, 2012
Toluene (CAS 108-88-3)	Listed: January 1, 1991

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

Toluene (CAS 108-88-3)	Listed: August 7, 2009

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

Benzene (CAS 71-43-2)	Listed: December 26, 1997

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	No
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)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
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	08-01-2014
Version #	01
NFPA ratings	Health: 2 Flammability: 3 Instability: 0

Disclaimer

The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc.

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