

Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 11/29/2018 Version: 1.0

1.1. Product identifier	
Product form	: Mixture
Product name	: Toluene Standard
Product code	: AL0-101361
1.2. Relevant identified uses of the substa	ance or mixture and uses advised against
1.3. Details of the supplier of the safety d	ata sheet
Phenova 6390 Joyce Dr. Suite 100 Golden, CO 80403 - United States T 1-866-942-2978 - F 1-866-283-0269 info@phenova.com - www.phenova.com	
1.4. Emergency telephone number	
Emergency number	: ChemTel Assistance (US/Canada) 1-800-255-3924 ChemTel Assistance (International) +1 813-248-0585
SECTION 2: Hazards identification	
2.1. Classification of the substance or mix	xture
GHS-US classification	L1005
Flam. Liq. 2 Acute Tox. 3 (Oral) Acute Tox. 3 (Dermal) Acute Tox. 3 (Inhalation:dust,mist) Muta. 1B STOT SE 1 Full text of H statements : see section 16	H225 H301 H311 H331 H340 H370
2.2. Label elements	
GHS-US labeling	
Hazard pictograms (GHS-US) Signal word (GHS-US)	: GHS02 : Danger
<b>o</b> ( )	<ul> <li>H225 - Highly flammable liquid and vapour</li> <li>H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled</li> <li>H340 - May cause genetic defects</li> <li>H370 - Causes damage to organs</li> </ul>
Precautionary statements (GHS-US)	<ul> <li>P201 - Obtain special instructions before use.</li> <li>P202 - Do not handle until all safety precautions have been read and understood.</li> <li>P210 - Keep away from heat/sparks/open flames/hot surfaces No smoking.</li> <li>P233 - Keep container tightly closed.</li> <li>P260 - Do not breathe dust/fume/gas/mist/vapors/spray.</li> <li>P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.</li> <li>P264 - Wash hands, forearms and face thoroughly after handling.</li> <li>P270 - Do not eat, drink or smoke when using this product.</li> <li>P271 - Use only outdoors or in a well-ventilated area.</li> <li>P280 - Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P310 - If swallowed: Immediately call a poison center or doctor</li> <li>P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower</li> <li>P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing</li> <li>P307+P311 - If exposed or concerned: Get medical advice/attention.</li> <li>P311 - Call a poison center or doctor</li> </ul>
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P312 - Call a poison center or doctor if you feel unwell
P321 - Specific treatment (see supplemental first aid instruction on this label)
P322 - Specific treatment (see supplemental first aid instruction on this label)
P330 - Rinse mouth.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use media other than water to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

#### 2.3. Other hazards

#### No additional information available

2.4. Unknown acute toxicity (GHS US

### No data available

### SECTION 3: Composition/Information on ingredients

### 3.1. Substances

### Not applicable

#### 3.2. Mixtures

Name	Product identifier	%	GHS-US classification
methanol	(CAS-No.) 67-56-1	99.8	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370
toluene	(CAS-No.) 108-88-3	0.2	Flam. Liq. 2, H225 Muta. 1B, H340

4.1. Description of first aid measures	
First-aid measures general	<ul> <li>Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice/attention.</li> </ul>
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Immediately call a poison center or doctor/physician. Wash with plenty of soap and water. Wash contaminated clothing before reuse.
First-aid measures after eye contact	: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a poison center or doctor/physician.
4.2. Most important symptoms and eff	ects, both acute and delayed
Symptoms/effects after inhalation	: Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after skin contact	<ul> <li>Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin.</li> </ul>
Symptoms/effects after ingestion	: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed

### No additional information available

SECTION 5: Firefighting measures	
5.1. Extinguishing media	
Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: Do not use a heavy water stream.
5.2. Special hazards arising from the su	bstance or mixture
Fire hazard	: Highly flammable liquid and vapour.
Explosion hazard	: May form flammable/explosive vapor-air mixture.

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Firefighting instructions       : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering exprivatory protection.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidential release measures       Entergency procedures         6.1. Personal precautions, protective equipment and emergency procedures       Entergency procedures         6.1.1. For non-mergency personnel       Evacuate unnecessary personnel.         6.1.2. For emergency responders       : Ventilate area.         Protective equipment       : Equip cleanup crew with proper protection. Avoid breathing dust/fume/gas/mist/vapors/spray.         C. Environmental precautions       : Ventilate area.         6.2. Environmental precautions       : Take up in absorbent material. Collect spillage.         6.4. Reference to other sections       : Take up in absorbent material. Collect spillage.         6.4. Reference to stafe handling       : Handle empty containers with care because residual vapors are flammable.         Precautions for safe handling       : Wash hands and other exposed areas with mild scop and water before eating. drinking or smoking and when leaving when process area to prevent formation of vapor. No open flames. No smoking. Use only outdoors or in a well-wentilated area.         Hygiene measures       : Do not est, drink or smoke when usead with pridosed. Genthy wash with plenty of scap and				
chemical fire: Provent Tre-Signing water from entering environment. Protection during firefighting ED on the enter fire area without proper protective equipment, including respiratory protection. SECTION 6: Accidental release measures E.1. Personal precautions, protective equipment and emergency procedures E.1. Per non-mergency prosonal Emergency procedures E.2. Evacuate unnecessary personnel. E.3. Protective equipment E.2. Equip cleanup crew with proper protection. Avoid breathing dust/tume/gas/mist/vapors/spray. Emergency procedures E.2. Environmental proceutions E.2. Environmental proceutions Ervent entry to severs and public waters. Notify authorities if liquid enters severs or public waters. E.3. Methods and material for containment and cleaning up Methods for cleaning up E.2. Environmental proceutions EVENT Take up in absorbent material. Collect spillage. E.3. Methods when processes EVENT 7: Handling and storage E.4. Reference to other sections EVENT 7: Handling and storage E.4. Reference to advarage protection. EVENT 7: Handling and storage E.4. Reference to advarage E.4. Precautions for safe handling Methods for safe handling E.2. Conditions for safe handling E.2. Cond				
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SECTION 7: Handling and storage         Precautions for safe handling         Additional hazards when processed       : Handle empty containers with care because residual vapors are flammable.         Precautions for safe handling       : Wash hands and other exposed areas with mild scap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.         Hygiene measures       : Do not eat, drink or smoke when using this product. Gently wash with plenty of scap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.         7.2.       Conditions for safe storage, including any incompatibilities         Technical measures       : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.         Storage conditions       : Keep in fireproof place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep avary from any flames or sparking source.         No additional information available       : Direct sunlight. Heat sources.         Sectific and use(s)       : Direct sunlight. Heat sources.         Storage conditional information available       : Direct sunlight. Heat sources.         Sectific and statical protection       : Direct sunlight. Heat sources.	6.4. Reference to of	ther sections		
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7.1. Precautions for safe handling         Additional hazards when processed       : Handle empty containers with care because residual vapors are flammable.         Precautions for safe handling       : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.         Hygiene measures       : Do not eat, drink or smoke when using this product. Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.         7.2. Conditions for safe storage, including any incompatibilities       :         Technical measures       : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.         Storage conditions       : Keep in fireproof place. Keep away from any flames or sparking source.         Innoompatible materials       : Direct sunlight. Heat sources.         7.3. Specific end use(s)       :         No additional information available       :         SECTION 8: Exposure controls/personal protection         8.1       Control parameters         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       Remark (ACGH)       Headache; eye dam; dizziness; nausea         USA ACGIH       Coling m <sup>2</sup> 260	SECTION 7: Handlin	ng and <u>storage</u>		
Precautions for safe handling       : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking, Use only non-sparking tools. Use only outdoors or in a well-ventilated area.         Hygiene measures       : Do not eat, drink or smoke when using this product. Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.         7.2.       Conditions for safe storage, including any incompatibilities         Technical measures       : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.         Storage conditions       : Keep in fireproof place. Keep away from any flames or sparking source.         Incompatible materials       : Direct sunlight. Heat sources.         7.3.       Specific end use(s)         Storage conditional information available       : Direct sunlight. Heat sources.         Storage conditional information available       : Direct sunlight. Heat sources.         Storage Cold use(s)       : Direct sunlight. Heat sources.         Storage Cold use(s)       : Direct sunlight. Heat sources.         Storage Cold use(s)       : Direct sunlight. Heat sources.         Storage Cold in Information available       : Direct sunlight. Heat sources.         Storage Cold use(s)       : Direct sunlight. Heat sources.     <				
smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.         Hygiene measures       : Do not eat, drink or smoke when using this product. Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.         7.2.       Conditions for safe storago, including any incompatibilities         Technical measures       : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.         Storage conditions       : Keep in fireproof place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.         Incompatible materials       : Direct sunlight. Heat sources.         7.3.       Specific end use(s)         No additional information available       Exposure controls/personal protection         Bc1.       Control parameters         Toluene Standard       200 ppm         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       CGIH)       Headache; eye dam; dizziness; nausea         USA ACGIH       OSHA PEL (TWA) (m/m²)       260 mg/m²         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA AC	Additional hazards when p	processed	Handle empty containers with care be	ecause residual vapors are flammable.
Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.         7.2. Conditions for safe storage, including any incompatibilities         Technical measures       : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.         Storage conditions       : Keep in fireproof place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.         Incompatible materials       : Direct sunlight. Heat sources.         7.3. Specific end use(s)       No additional information available         SECTION 8: Exposure controls/personal protection       8.1         8.1. Control parameters       Toluene Standard         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       ACGIH STEL (ppm)       250 ppm         USA OSHA       OSHA PEL (TWA) (mg/m³)       260 mg/m³         USA OSHA       OSHA PEL (TWA) (ppm)       200 ppm         USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Va	Precautions for safe hand	ling :	smoking and when leaving work. Pro- of vapor. No open flames. No smokin	vide good ventilation in process area to prevent formation
Technical measures       : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.         Storage conditions       : Keep in fireproof place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.         Incompatible materials       : Direct sunlight. Heat sources.         7.3.       Specific end use(s)         No additional information available         SECTION 8: Exposure controls/personal protection         Storage Controls/personal protection         Super Standard         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       ACGIH STEL (ppm)       250 ppm         USA ACGIH       Remark (ACGIH)       Headache; eye dam; dizziness; nausea         USA OSHA       OSHA PEL (TWA) (mg/m³)       260 mg/m³         USA ACGIH       Remark (ACGIH)       Headache; eye dam; dizziness; nausea         USA OSHA       OSHA PEL (TWA) (ppm)       200 ppm         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Meth	Hygiene measures	:	Remove/Take off immediately all con	
Storage conditions       : Keep in fireproof place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.         Incompatible materials       : Direct sunlight. Heat sources.         7.3.       Specific end use(s)         Ko additional information available       Storage controls/personal protection         Storage Controls/personal protection         8.1.         Control parameters         Storage Controls/personal protection         8.1.         Output parameters         Storage Control parameters         USA ACGIH         ACGIH TWA (ppm)         Storage Control parameters         USA A	7.2. Conditions for	safe storage, including	any incompatibilities	
well-ventilated place. Keep away from any flames or sparking source.         Incompatible materials       : Direct sunlight. Heat sources.         7.3. Specific end use(s)         No additional information available         SECTION 8: Exposure controls/personal protection         8.1. Control parameters         Toluene Standard         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       ACGIH STEL (ppm)       250 ppm         USA ACGIH       Remark (ACGIH)       Headache; eye dam; dizziness; nausea         USA OSHA       OSHA PEL (TWA) (mg/m³)       260 mg/m³         USA ACGIH       QSHA PEL (TWA) (ppm)       200 ppm         Methanol (67-56-1)       USA ACGIH       USA ACGIH         USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       200 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	Technical measures	:	Proper grounding procedures to avoid container and receiving equipment.	d static electricity should be followed. Ground/bond
Specific end use(s)         No additional information available         SECTION 8: Exposure controls/personal protection         8.1. Control parameters         Toluene Standard         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       ACGIH STEL (ppm)       250 ppm         USA ACGIH       Remark (ACGIH)       Headache; eye dam; dizziness; nausea         USA OSHA       OSHA PEL (TWA) (mg/m³)       260 mg/m³         USA OSHA       OSHA PEL (TWA) (ppm)       200 ppm         Methanol (67-56-1)       200 ppm (Methanoi; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanoi; USA; Short time value; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Methanoi; USA; Short time value; TLV - Adopted Value)	Storage conditions	:	Keep in fireproof place. Keep contain well-ventilated place. Keep away fron	er tightly closed. Keep container tightly closed and in a n any flames or sparking source.
No additional information available SECTION 8: Exposure controls/personal protection 8.1. Control parameters Toluene Standard USA ACGIH ACGIH TWA (ppm) 200 ppm USA ACGIH ACGIH STEL (ppm) 250 ppm USA ACGIH ACGIH STEL (ppm) 250 ppm USA ACGIH Remark (ACGIH) Headache; eye dam; dizziness; nausea USA OSHA OSHA PEL (TWA) (mg/m³) 260 mg/m³ USA OSHA OSHA PEL (TWA) (mg/m³) 200 ppm Methanol (67-56-1) USA ACGIH ACGIH TWA (ppm) 200 ppm Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) USA ACGIH ACGIH STEL (ppm) 250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	Incompatible materials	:	Direct sunlight. Heat sources.	
SECTION 8: Exposure controls/personal protection8.1. Control parametersToluene StandardUSA ACGIHACGIH TWA (ppm)200 ppmUSA ACGIHACGIH STEL (ppm)250 ppmUSA ACGIHRemark (ACGIH)Headache; eye dam; dizziness; nauseaUSA OSHAOSHA PEL (TWA) (mg/m³)260 mg/m³USA OSHAOSHA PEL (TWA) (ppm)200 ppmMethanol (67-56-1)USA ACGIHACGIH TWA (ppm)200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)USA ACGIHACGIH STEL (ppm)250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	7.3. Specific end us	se(s)		
8.1. Control parameters         Toluene Standard         USA ACGIH       ACGIH TWA (ppm)       200 ppm         USA ACGIH       ACGIH STEL (ppm)       250 ppm         USA ACGIH       ACGIH STEL (ppm)       250 ppm         USA ACGIH       Remark (ACGIH)       Headache; eye dam; dizziness; nausea         USA OSHA       OSHA PEL (TWA) (mg/m³)       260 mg/m³         USA OSHA       OSHA PEL (TWA) (ppm)       200 ppm         methanol (67-56-1)       USA ACGIH       ACGIH TWA (ppm)         USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	No additional information a	available		
Toluene StandardUSA ACGIHACGIH TWA (ppm)200 ppmUSA ACGIHACGIH STEL (ppm)250 ppmUSA ACGIHRemark (ACGIH)Headache; eye dam; dizziness; nauseaUSA OSHAOSHA PEL (TWA) (mg/m³)260 mg/m³USA OSHAOSHA PEL (TWA) (ppm)200 ppmmethanol (67-56-1)USA ACGIHACGIH TWA (ppm)USA ACGIHACGIH TWA (ppm)200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)USA ACGIHACGIH STEL (ppm)250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	SECTION 8: Exposu	ure controls/persor	nal protection	
USA ACGIHACGIH TWA (ppm)200 ppmUSA ACGIHACGIH STEL (ppm)250 ppmUSA ACGIHRemark (ACGIH)Headache; eye dam; dizziness; nauseaUSA OSHAOSHA PEL (TWA) (mg/m³)260 mg/m³USA OSHAOSHA PEL (TWA) (ppm)200 ppmmethanol (67-56-1)USA ACGIHACGIH TWA (ppm)USA ACGIHACGIH TWA (ppm)200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)USA ACGIHACGIH STEL (ppm)250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)				
USA ACGIHACGIH STEL (ppm)250 ppmUSA ACGIHRemark (ACGIH)Headache; eye dam; dizziness; nauseaUSA OSHAOSHA PEL (TWA) (mg/m³)260 mg/m³USA OSHAOSHA PEL (TWA) (ppm)200 ppmmethanol (67-56-1)USA ACGIHACGIH TWA (ppm)USA ACGIHACGIH TWA (ppm)200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)USA ACGIHACGIH STEL (ppm)250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	Toluene Standard			
USA ACGIH       Remark (ACGIH)       Headache; eye dam; dizziness; nausea         USA OSHA       OSHA PEL (TWA) (mg/m³)       260 mg/m³         USA OSHA       OSHA PEL (TWA) (ppm)       200 ppm         methanol (67-56-1)       USA ACGIH       ACGIH TWA (ppm)         USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)			-	
USA OSHA       OSHA PEL (TWA) (mg/m³)       260 mg/m³         USA OSHA       OSHA PEL (TWA) (ppm)       200 ppm         methanol (67-56-1)       USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	USA ACGIH	ACGIH STEL (pp	m)	250 ppm
USA OSHA       OSHA PEL (TWA) (ppm)       200 ppm         methanol (67-56-1)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	USA ACGIH	Remark (ACGIH)		Headache; eye dam; dizziness; nausea
methanol (67-56-1)     200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)       USA ACGIH     ACGIH TWA (ppm)     250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)       USA ACGIH     ACGIH STEL (ppm)     250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	USA OSHA	OSHA PEL (TWA	۸) (mg/m³)	260 mg/m <sup>3</sup>
USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	USA OSHA	OSHA PEL (TWA	\) (ppm)	200 ppm
USA ACGIH       ACGIH TWA (ppm)       200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)         USA ACGIH       ACGIH STEL (ppm)       250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	methanol (67-56-1)			·
USA ACGIH ACGIH STEL (ppm) 250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	. ,	ACGIH TWA (pp	n)	
	USA ACGIH	ACGIH STEL (pp	m)	250 ppm (Methanol; USA; Short time value; TLV -
	USA ACGIH	Remark (ACGIH)		

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methanol (67-56-1)			
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	260 mg/m <sup>3</sup>	
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm	
toluene (108-88-3)			
USA ACGIH	ACGIH TWA (ppm)	20 ppm (Toluene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)	
USA ACGIH	Remark (ACGIH)	Visual impair; female repro;	
USA OSHA	Remark (OSHA)	(2) See Table Z-2.	
8.2. Exposure controls			

Appropriate engineering controls	: Either local exhaust or general room ventilation is usually required.
Personal protective equipment	: Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Safety glasses.
Hand protection	: Wear chemically resistant protective gloves. Wear suitable gloves resistant to chemical penetration.
Eye protection	: Chemical goggles or safety glasses. Safety glasses.
Skin and body protection	: Wear chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact.
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.
Other information	: Do not eat, drink or smoke during use.
<b>SECTION 9: Physical and chemic</b>	cal properties
9.1. Information on basic physical a	nd chemical properties
Physical state	: Liquid

5	•
Color	: Colorless.
Odor	: characteristic.
Odor threshold	: No data available
рН	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

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#### 9.2. Other information

No additional information available

#### SECTION 10: Stability and reactivity

10.1. Reactivity

#### No additional information available

#### 10.2. Chemical stability

Highly flammable liquid and vapour. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

#### Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame.

10.5. Incompatible materials

#### No additional information available

10.6. Hazardous decomposition products

May release flammable gases.

### **SECTION 11: Toxicological information**

11.1. Information on toxicological effects

Acute toxicity

: Oral: Toxic if swallowed. Dermal: Toxic in contact with skin. Inhalation:dust,mist: Toxic if inhaled.

Toluene Standard	
ATE CLP (oral)	100.2 mg/kg body weight
ATE CLP (dermal)	300.601 mg/kg body weight
ATE CLP (dust, mist)	0.501 mg/l/4h
methanol (67-56-1)	
LD50 oral rat	> 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rabbit	15800 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	85 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	64000 ppm/4h (Rat; Literature study)
ATE CLP (oral)	100 mg/kg body weight
ATE CLP (dermal)	300 mg/kg body weight
ATE CLP (gases)	700 ppmV/4h
ATE CLP (vapors)	3 mg/l/4h
ATE CLP (dust, mist)	0.5 mg/l/4h
toluene (108-88-3)	
LD50 oral rat	> 2000 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; 5580 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	12223 mg/kg (Rabbit; Literature study; Other; >5000 mg/kg bodyweight; Rabbit; Experimental value)
LC50 inhalation rat (mg/l)	> 20 mg/l/4h (Rat; Literature study)
ATE CLP (dermal)	12223 mg/kg body weight
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: May cause genetic defects.
0	Based on available data, the classification criteria are not met
Carcinogenicity	Not classified
toluene (108-88-3)	
IARC group	3 - Not classifiable
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Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity – single exposure	: Causes damage to organs.
Specific target organ toxicity – repeated exposure	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.
Symptoms/effects after inhalation	: Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after skin contact	: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin.
Symptoms/effects after ingestion	<ul> <li>Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.</li> </ul>

### SECTION 12: Ecological information

12.1. Toxicity	
methanol (67-56-1)	
LC50 fish 1	15400 mg/l (LC50; EPA 660/3 - 75/009; 96 h; Lepomis macrochirus; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 1	> 10000 mg/l (EC50; DIN 38412-11; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
LC50 fish 2	10800 mg/l (LC50; 96 h; Salmo gairdneri)
2.2. Persistence and degradability	
Toluene Standard	
Persistence and degradability	Not established.
methanol (67-56-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.6 - 1.12 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.42 g O <sub>2</sub> /g substance
ThOD	1.5 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.8 (Literature study)
toluene (108-88-3)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	2.15 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	2.52 g O <sub>2</sub> /g substance
ThOD	3.13 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.69
12.3. Bioaccumulative potential	
Toluene Standard	
Bioaccumulative potential	Not established.
methanol (67-56-1)	
BCF fish 1	< 10 (BCF; 72 h; Leuciscus idus)
Log Pow	-0.77 (Experimental value; Other)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
toluene (108-88-3)	
BCF fish 2	90 (BCF; 72 h; Leuciscus idus; Static system; Fresh water)
Log Pow	2.73 (Experimental value; Other; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
12.4. Mobility in soil	
methanol (67-56-1)	

methanol (67-56-1)			
	Surface tension	0.023 N/m (20 °C)	
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methanol (67-56-1) Log Koc	Koc,PCKOCWIN v1.66; 1; Calculated value
toluene (108-88-3)	
Surface tension	0.03 N/m (20 °C)
12.5. Other adverse effects	
Other information	: Avoid release to the environment.
SECTION 13: Disposal consideration	8
13.1. Waste treatment methods	
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials	: Avoid release to the environment. Hazardous waste due to toxicity.
SECTION 14: Transport information	
In accordance with DOT	
Transport document description	: UN1992 Flammable liquids, toxic, n.o.s. (methanol ; benzene), 3 (6.1), II
UN-No.(DOT)	: 1992
DOT NA no.	: UN1992
Proper Shipping Name (DOT)	: Flammable liquids, toxic, n.o.s.
	methanol ; benzene
Class (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT)	: 3 - Flammable liquid
	6.1 - Poison
	3 6
DOT Symbols	: G - Identifies PSN requiring a technical name : II - Medium Danger
Packing group (DOT) DOT Special Provisions (49 CFR 172.102)	<ul> <li>II - Medium Danger</li> <li>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite</li> </ul>
	(31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110
	kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
	T7 - 4 178.274(d)(2) Normal 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the
	following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the
	temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and
	the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For
	liquids transported under ambient conditions may be calculated using the formula: (image)
	Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
	TP13 - Self-contained breathing apparatus must be provided when this hazardous material is
	transported by sea.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 243
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a
	passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" or
	passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this
	section is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
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Additional information	
Emergency Response Guide (ERG) Number	: 131
Other information	: No supplementary information available.
ADR	
Transport document description	: UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (methanol ; benzene), 3 (6.1), II, (D/E)
Packing group (ADR)	: 11
Class (ADR)	: 3 - Flammable liquid
Hazard identification number (Kemler No.)	: 336
Classification code (ADR)	: FT1
Hazard labels (ADR)	: 3 - Flammable liquids 6.1 - Toxic substances
Orange plates	336 1992
Tunnel restriction code (ADR)	: D/E
LQ	: 11
Excepted quantities (ADR)	: E2
Transport by sea	
UN-No. (IMDG)	: 1992
Proper Shipping Name (IMDG)	: FLAMMABLE LIQUID, TOXIC, N.O.S.
Class (IMDG)	: 3 - Flammable liquids
Packing group (IMDG)	: II - substances presenting medium danger
Air transport	
JN-No. (IATA)	: 1992
Proper Shipping Name (IATA)	: Flammable liquid, toxic, n.o.s.
Class (IATA)	: 3 - Flammable Liquids
Packing group (IATA)	: II - Medium Danger
SECTION 15: Regulatory informatio	n
15.1. US Federal regulations	
methanol (67-56-1)	
Listed on the United States TSCA (Toxic Subs Subject to reporting requirements of United St	stances Control Act) inventory ates SARA Section 313
CERCLA RQ	5000 lb
SARA Section 313 - Emission Reporting	1 %

SARA Section 313 - Emission Reporting	1 %	
toluene (108-88-3)		
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313		
CERCLA RQ	1000 lb	
SARA Section 313 - Emission Reporting	1 %	

15.2. International regulations

## CANADA

methanol (67-56-1)	
Listed on the Canadian DSL (Domestic Substances List)	

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### toluene (108-88-3)

Listed on the Canadian DSL (Domestic Substances List)

#### **EU-Regulations**

toluene (108-88-3)

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 2	H225
Acute Tox. 3 (Oral)	H301
Acute Tox. 3 (Dermal)	H311
Acute Tox. 3 (Inhalation:dust,mist)	H331
STOT SE 1	H370
Full text of H statements : see section 16	

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F; R11 T; R23/24/25 T; R39/23/24/25 Full text of R-phrases: see section 16

#### 15.2.2. National regulations

methanol (67-56-1)	
Listed on EPA Hazardous Air Pollutant (HAPS)	
toluene (108-88-3)	
Listed on EPA Hazardous Air Pollutant (HAPS)	

15.3. US State regulations				
Toluene Standard()				
U.S California - Proposition 65 - Carcinogens List		No		
U.S California - Proposition 65 - Developmental Toxicity		No		
U.S California - Proposition 65 - Reproductive Toxicity - Female		No		
U.S California - Proposition 65 - Reproductive Toxicity - Male		No		
methanol (67-56-1)	methanol (67-56-1)			
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No Yes		No	No	
toluene (108-88-3)				
U.S California -	U.S California -	U.S California -	U.S California -	No significant risk level

U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	Yes	No	No	

<b>SECTION 16: Other information</b>	
Data sources	REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Other information	: None.

#### Hazard Rating

#### PHV SDS US

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