



Toluene

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 07/21/2022 Date of Issue: 05/06/2003 Supersedes Date: 03/10/2014

Version: 3.1

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Name: Toluene

Product Code: P41

Formula: C₆H₅-CH₃

Synonyms: Toluene, Toluol, Methylbenzene

Other Means of Identification: Aromatic Hydrocarbon

1.2. Intended Use of the Product

Use of the Substance/Mixture: Manufacturing

1.3. Name, Address, and Telephone of the Responsible Party

Company

Delek US
200 Refinery Road
Big Spring, TX 79720
Phone #: 432-263-7661

Delek US
365 S. Levee Road
Krotz Springs, LA 70750
Phone #: 337-566-0175

Delek US
425 N. McMurrey Drive
Tyler, TX 75702
Phone #: 903-579-3400

Delek US
1000 Mc Henry St.
El Dorado, AR 71730
Phone #: 615-771-6701

1.4. Emergency Telephone Number

Emergency Number : 800-424-9300

CHEMTREC – TOLL FREE 24 HOUR EMERGENCY TELEPHONE NUMBER

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US Classification

Flammable liquids Category 2	H225
Skin corrosion/irritation Category 2	H315
Germ cell mutagenicity Category 1B	H340
Carcinogenicity Category 1A	H350
Reproductive toxicity Category 2	H361
Specific target organ toxicity — Single exposure, Category 3, Narcosis	H336
Specific target organ toxicity (repeated exposure) Category 2	H373
Aspiration hazard Category 1	H304
Hazardous to the aquatic environment - Acute Hazard Category 2	H401
Hazardous to the aquatic environment - Chronic Hazard Category 3	H412

Full text of H statements : see section 16

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H225 - Highly flammable liquid and vapor.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H336 - May cause drowsiness or dizziness.
H340 - May cause genetic defects.
H350 - May cause cancer.
H361 - Suspected of damaging fertility or the unborn child (unborn child).
H373 - May cause damage to organs (kidneys, nervous system, liver, respiratory tract, eyes, hearing organs, hematopoietic system) through prolonged or repeated

Toluene

Safety Data Sheet

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

Precautionary Statements (GHS-US)

exposure.

H401 - Toxic to aquatic life.

H412 - Harmful to aquatic life with long lasting effects.

: P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 - Keep container tightly closed.

P240 - Ground/Bond container and receiving equipment.

P241 - Use explosion-proof electrical, lighting, ventilating equipment.

P242 - Use only non-sparking tools.

P243 - Take precautionary measures against static discharge.

P260 - Do not breathe mist, spray, vapors.

P264 - Wash exposed areas thoroughly after handling.

P271 - Use only outdoors or in a well-ventilated area.

P273 - Avoid release to the environment.

P280 - Wear eye protection, protective clothing, protective gloves.

P301+P310 - If swallowed: Immediately call a poison center or doctor.

P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 - If inhaled: Remove person to fresh air and keep at rest in a position comfortable for breathing.

P308+P313 - If exposed or concerned: Get medical advice/attention.

P314 - Get medical advice/attention if you feel unwell.

P321 - Specific treatment (see Section 4 on this SDS).

P331 - Do NOT induce vomiting.

P332+P313 - If skin irritation occurs: Get medical advice/attention.

P362+P364 - Take off contaminated clothing and wash it before reuse.

P370+P378 - In case of fire: Use appropriate media to extinguish.

P403+P235 - Store in a well-ventilated place. Keep cool.

P405 - Store locked up.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	%	GHS US classification
Toluene	Benzene, methyl- / Methylbenzene / Phenylmethane / TOLUENE	(CAS-No.) 108-88-3	> 97	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 3, H412

Toluene

Safety Data Sheet

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

Ethylbenzene	Benzene, ethyl- / Phenylethane / ETHYLBENZENE / Ethyl benzene	(CAS-No.) 100-41-4	< 2	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation:dust,mist), H332 Carc. 2, H351 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 3, H412
Benzene	Cyclohexatriene / Benzol	(CAS-No.) 71-43-2	0.1 – 0.6	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Muta. 1B, H340 Carc. 1A, H350 STOT SE 3, H336 STOT SE 3, H335 STOT RE 1, H372 Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 3, H412

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

First-aid Measures After Skin Contact: Immediately remove contaminated clothing. Immediately drench affected area with water for at least 15 minutes. Wash affected areas with soap and water. If exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

First-aid Measures After Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

First-aid Measures After Ingestion: Do NOT induce vomiting. Rinse mouth. Place affected person on their side. Immediately call a POISON CENTER or doctor/physician.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

Symptoms/Injuries: May be fatal if swallowed and enters airways. May cause cancer. May cause damage to organs (kidneys, nervous system, liver, respiratory tract, eyes, hearing organs, hematopoietic system) through prolonged or repeated exposure. May cause genetic defects. Suspected of damaging the unborn child. May cause drowsiness and dizziness. Causes skin irritation.

Symptoms/Injuries After Inhalation: High concentrations may cause central nervous system depression such as dizziness, vomiting, numbness, drowsiness, headache, and similar narcotic symptoms.

Symptoms/Injuries After Skin Contact: Redness, pain, swelling, itching, burning, dryness, and dermatitis.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes.

Symptoms/Injuries After Ingestion: Aspiration into the lungs can occur during ingestion or vomiting and may cause lung injury.

Chronic Symptoms: May cause cancer. May cause damage to organs (kidneys, nervous system, liver, respiratory tract, eyes, hearing organs, hematopoietic system) through prolonged or repeated exposure. May cause genetic defects. Suspected of damaging the unborn child.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand. If exposed or concerned, get medical advice and attention.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂). Water may be ineffective but water should be used to keep fire-exposed container cool.

Unsuitable Extinguishing Media: Do not use a heavy water stream. A heavy water stream may spread burning liquid.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Highly flammable liquid and vapor. Vapors may travel to source of ignition and flash back.

Explosion Hazard: May form flammable or explosive vapor-air mixture.

Toluene

Safety Data Sheet

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

Reactivity: Reacts violently with strong oxidizers. Increased risk of fire or explosion.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO₂).

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Use special care to avoid static electric charges. Do not breathe vapor, mist or spray. Do not get in eyes, on skin, or on clothing.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel. Stop leak if safe to do so.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Eliminate ignition sources first, then ventilate the area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: As an immediate precautionary measure, isolate spill or leak area in all directions. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Do not take up in combustible material such as: saw dust or cellulosic material.

Methods for Cleaning Up: Use only non-sparking tools. Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material. Do not take up in combustible material such as: saw dust or cellulosic material. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors. Handle empty containers with care because residual vapors are flammable.

Precautions for Safe Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Use only non-sparking tools. Keep away from heat, sparks, open flames, hot surfaces. No smoking. Take precautionary measures against static discharge. Do not get in eyes, on skin, or on clothing. Do NOT breathe (vapor, mist, spray). Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Use explosion-proof electrical, ventilating, and lighting equipment. Ground and bond container and receiving equipment. Take action to prevent static discharges. Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container tightly closed. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Keep in fireproof place. Store locked up/in a secure area.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

7.3. Specific End Use(s)

Manufacturing

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

Toluene

Safety Data Sheet

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

Toluene (108-88-3)		
USA ACGIH	ACGIH OEL TWA [ppm]	20 ppm
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA ACGIH	BEI (BLV)	0.02 mg/l Parameter: Toluene - Medium: blood - Sampling time: prior to last shift of workweek 0.03 mg/l Parameter: Toluene - Medium: urine - Sampling time: end of shift 0.3 mg/g Kreatinin Parameter: o-Cresol with hydrolysis - Medium: urine - Sampling time: end of shift (background)
USA NIOSH	NIOSH REL (TWA)	375 mg/m ³
USA NIOSH	NIOSH REL TWA [ppm]	100 ppm
USA NIOSH	NIOSH REL (STEL)	560 mg/m ³
USA NIOSH	NIOSH REL STEL [ppm]	150 ppm
USA IDLH	IDLH [ppm]	500 ppm
USA OSHA	OSHA PEL (TWA) [2]	200 ppm
USA OSHA	OSHA PEL C [ppm]	300 ppm
USA OSHA	Acceptable Maximum Peak Above The Acceptable Ceiling Concentration For An 8-Hr Shift	500 ppm Peak (10 minutes)
Ethylbenzene (100-41-4)		
USA ACGIH	ACGIH OEL TWA [ppm]	20 ppm
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
USA ACGIH	BEI (BLV)	0.15 g/g Kreatinin Parameter: Sum of mandelic acid and phenylglyoxylic acid - Medium: urine - Sampling time: end of shift (nonspecific)
USA NIOSH	NIOSH REL (TWA)	435 mg/m ³
USA NIOSH	NIOSH REL TWA [ppm]	100 ppm
USA NIOSH	NIOSH REL (STEL)	545 mg/m ³
USA NIOSH	NIOSH REL STEL [ppm]	125 ppm
USA IDLH	IDLH [ppm]	800 ppm (10% LEL)
USA OSHA	OSHA PEL (TWA) [1]	435 mg/m ³
USA OSHA	OSHA PEL (TWA) [2]	100 ppm
Benzene (71-43-2)		
USA ACGIH	ACGIH OEL TWA [ppm]	0.5 ppm
USA ACGIH	ACGIH OEL STEL [ppm]	2.5 ppm
USA ACGIH	ACGIH chemical category	Confirmed Human Carcinogen, Skin - potential significant contribution to overall exposure by the cutaneous route
USA ACGIH	BEI (BLV)	25 µg/g Kreatinin Parameter: S-Phenylmercapturic acid - Medium: urine - Sampling time: end of shift (background) 500 µg/g Kreatinin Parameter: t,t-Muconic acid - Medium: urine - Sampling time: end of shift (background)
USA NIOSH	NIOSH REL TWA [ppm]	0.1 ppm
USA NIOSH	NIOSH REL STEL [ppm]	1 ppm
USA IDLH	IDLH [ppm]	500 ppm
USA OSHA	OSHA PEL (TWA) [2]	10 ppm 1 ppm
USA OSHA	OSHA PEL (STEL) [2]	5 ppm (see 29 CFR 1910.1028)
USA OSHA	OSHA PEL C [ppm]	25 ppm
USA OSHA	Acceptable Maximum Peak Above The Acceptable Ceiling Concentration For An 8-Hr Shift	50 ppm Peak (10 minutes)
USA OSHA	OSHA Action Level/Excursion Limit	0.5 ppm (Action Level, see 29 CFR 1910.1028)

Toluene

Safety Data Sheet

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

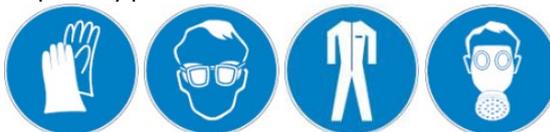
8.2. Exposure Controls

Appropriate Engineering Controls

: Ensure adequate ventilation, especially in confined areas. Use explosion-proof equipment. Proper grounding procedures to avoid static electricity should be followed. Gas detectors should be used when flammable gases or vapors may be released. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment

: Gloves. Protective goggles. Protective clothing. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing

: Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Hand Protection

: Wear chemically resistant protective gloves.

Eye and Face Protection

: Chemical goggles or safety glasses. Wear face shield where splash hazard exists.

Skin and Body Protection

: Wear suitable protective clothing.

Respiratory Protection

: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information

: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear. Colorless.
Odor	: Characteristic.
Odor Threshold	: 1.6 ppm
pH	: No data available
Evaporation Rate	: 2.24
Melting Point	: -95 °C (-139°F)
Freezing Point	: No data available
Boiling Point	: 110.56 °C (231°F)
Flash Point	: 4.4 °C (40°F) TCC OPEN CUP: 4°C (39°F)
Critical Temperature	: 318.6 °C (605.5°F)
Auto-ignition Temperature	: 480 (896°F)
Decomposition Temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapor Pressure	: 28.4 mm Hg @ 25°C (77°F)
Relative Vapor Density at 20°C	: 3.1 (Air = 1)
Relative Density	: No data available
Specific Gravity	: 0.866 (Water = 1)
Solubility	: Water: Partially soluble in cold water
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available
Lower Flammable Limit	: 1.3 %
Upper Flammable Limit	: 7.1 %

9.2. Other Information

VOC Content	: 100 %
-------------	---------

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reacts violently with strong oxidizers. Increased risk of fire or explosion.

10.2. Chemical Stability

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

10.3. Possibility of Hazardous Reactions

Toluene

Safety Data Sheet

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

Hazardous polymerization will not occur.

10.4. Conditions to Avoid

Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources.

10.5. Incompatible Materials

Strong acids, strong bases, strong oxidizers.

10.6. Hazardous Decomposition Products

Thermal decomposition may produce: Carbon oxides (CO, CO₂). May release flammable gases.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

Toluene (108-88-3)	
LD50 Oral Rat	2600 mg/kg
LD50 Dermal Rabbit	12000 mg/kg
LC50 Inhalation Rat	25.7 mg/l/4h
Ethylbenzene (100-41-4)	
LD50 Oral Rat	3500 mg/kg
LD50 Dermal Rabbit	15400 mg/kg
LC50 Inhalation Rat	17.2 mg/l/4h (Exposure time: 4 h)
Benzene (71-43-2)	
LD50 Oral Rat	810 mg/kg
LD50 Dermal Rabbit	> 8200 mg/kg
LC50 Inhalation Rat	44.66 mg/l/4h

Skin Corrosion/Irritation: Causes skin irritation.

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: May cause genetic defects.

Carcinogenicity: May cause cancer.

Toluene (108-88-3)	
IARC group	3
Ethylbenzene (100-41-4)	
IARC group	2B
National Toxicology Program (NTP) Status	Evidence of Carcinogenicity.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Benzene (71-43-2)	
IARC group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens, Evidence of Carcinogenicity.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
OSHA Specifically Regulated Carcinogen List	In OSHA Specifically Regulated Carcinogen list.

Reproductive Toxicity: Suspected of damaging the unborn child.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness or dizziness.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs (kidneys, nervous system, liver, respiratory tract, eyes, hearing organs, hematopoietic system) through prolonged or repeated exposure.

Aspiration Hazard: May be fatal if swallowed and enters airways.

Symptoms/Injuries After Inhalation: High concentrations may cause central nervous system depression such as dizziness, vomiting, numbness, drowsiness, headache, and similar narcotic symptoms.

Symptoms/Injuries After Skin Contact: Redness, pain, swelling, itching, burning, dryness, and dermatitis.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes.

Symptoms/Injuries After Ingestion: Aspiration into the lungs can occur during ingestion or vomiting and may cause lung injury.

Chronic Symptoms: May cause cancer. May cause damage to organs (kidneys, nervous system, liver, respiratory tract, eyes, hearing organs, hematopoietic system) through prolonged or repeated exposure. May cause genetic defects. Suspected of damaging the unborn child.

Toluene

Safety Data Sheet

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

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General : Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Toluene (108-88-3)	
LC50 Fish 1	15.22 (15.22 – 19.05) mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	5.46 (5.46 – 9.83) mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 Fish 2	12.6 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 - Crustacea [2]	11.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)
NOEC Chronic Fish	1.4 mg/l (Oncorhynchus kisutch)
NOEC Chronic Crustacea	0.74 mg/l (Ceriodaphnia dubia)

Ethylbenzene (100-41-4)	
LC50 Fish 1	11 – 18 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 - Crustacea [1]	1.8 – 2.4 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	4.2 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
NOEC Chronic Crustacea	0.956 mg/l

Benzene (71-43-2)	
LC50 Fish 1	10.7 – 14.7 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	8.76 – 15.6 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 Fish 2	5.3 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 - Crustacea [2]	10 mg/l (Exposure time: 48 h - Species: Daphnia magna)
ErC50 (Algae)	29 mg/l
NOEC Chronic Fish	0.8 mg/l

12.2. Persistence and Degradability

Toluene	
Persistence and Degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative Potential

Toluene	
Bioaccumulative Potential	Not established.

Toluene (108-88-3)	
Partition coefficient n-octanol/water (Log Pow)	2.7

Ethylbenzene (100-41-4)	
BCF Fish 1	15
Partition coefficient n-octanol/water (Log Pow)	3.2

Benzene (71-43-2)	
BCF Fish 1	3.5 – 4.4
Partition coefficient n-octanol/water (Log Pow)	2.1

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Sewage Disposal Recommendations: Do not dispose of waste into sewer.

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, and international regulations.

Additional Information: Handle empty containers with care because residual vapors are flammable.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

Toluene

Safety Data Sheet

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

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name : TOLUENE
Hazard Class : 3
Identification Number : UN1294
Label Codes : 3
Packing Group : II
ERG Number : 130



14.2. In Accordance with IMDG

Proper Shipping Name : TOLUENE
Hazard Class : 3
Identification Number : UN1294
Packing Group : II
Label Codes : 3
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D



14.3. In Accordance with IATA

Proper Shipping Name : TOLUENE
Packing Group : II
Identification Number : UN1294
Hazard Class : 3
Label Codes : 3
ERG Code (IATA) : 3L



SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Toluene	
SARA Section 311/312 Hazard Classes	Health hazard - Specific target organ toxicity (single or repeated exposure) Health hazard - Carcinogenicity Health hazard - Reproductive toxicity Health hazard - Skin corrosion or Irritation Physical hazard - Flammable (gases, aerosols, liquids, or solids) Health hazard - Germ cell mutagenicity Health hazard - Aspiration hazard
Toluene (108-88-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1000 lb
SARA Section 313 - Emission Reporting	1 %
Ethylbenzene (100-41-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1000 lb
SARA Section 313 - Emission Reporting	0.1 %
Benzene (71-43-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	10 lb

Toluene

Safety Data Sheet

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

SARA Section 313 - Emission Reporting

0.1 %

15.2. US State Regulations

Toluene (108-88-3)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Ethylbenzene (100-41-4)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Benzene (71-43-2)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

California Proposition 65



WARNING: This product can expose you to Benzene, 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.

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Toluene (108-88-3)		X		
Ethylbenzene (100-41-4)	X			
Benzene (71-43-2)	X	X		X

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 07/21/2022

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200. This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H340	May cause genetic defects
H350	May cause cancer
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H401	Toxic to aquatic life
H412	Harmful to aquatic life with long lasting effects

Toluene

Safety Data Sheet

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

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SDS US (GHS HazCom)