

TOLUENE

SECTION 1. IDENTIFICATION

Product Identifier	TOLUENE
Other Means of Identification	13-271, 13-274, 13-278, 13-278EXP, 83-274, 83-279, 83-279SHER
Other Identification	Toluol
Recommended Use	Please refer to Product label.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	Recochem Inc., 850 Montee de Liesse, Montreal, QC, H4T 1P4, Compliance and Regulatory Department, 905-878-5544, www.recochem.com
Emergency Phone No.	CANUTEC, 613-996-6666, 24 Hours
SDS No.	1633

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Flammable liquid - Category 2; Acute toxicity (Dermal) - Category 4; Acute toxicity (Inhalation) - Category 4; Skin irritation - Category 2; Eye irritation - Category 2B; Germ cell mutagenicity - Category 1B; Carcinogenicity - Category 1A; Reproductive toxicity - Category 1B; Specific target organ toxicity (single exposure) - Category 3; Specific target organ toxicity (repeated exposure) - Category 2; Aspiration hazard - Category 1; Aquatic hazard (Acute) - Category 2

Label Elements



Signal Word:
Danger

Hazard Statement(s):

H225	Highly flammable liquid and vapour.
H312 + H332	Harmful in contact with skin or if inhaled.
H304	May be fatal if swallowed and enters airways.
H315 + H320	Causes skin and eye irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.

Precautionary Statement(s):

Prevention:

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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 and bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating, and lighting equipment.
P241	Use explosion-proof equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P243	Take action to prevent static discharges.
P260	Do not breathe fume, mist, vapours, spray.
P264	Wash hands and skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves, eye protection.

Response:

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
P331	Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P312	Call a POISON CENTRE or doctor if you feel unwell.
P332 + P313	If skin irritation occurs: Get medical advice or attention.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTRE or doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTRE or doctor if you feel unwell.
P337 + P313	If eye irritation persists: Get medical advice or attention.
P308 + P313	IF exposed or concerned: Get medical advice or attention.
P370 + P378	In case of fire: Use appropriate foam, carbon dioxide, dry chemical powder, water spray or fog to extinguish.

Storage:

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

Disposal:

Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Toluene	108-88-3	60-100	
Xylene (mixed isomers)	1330-20-7	15-40	
Benzene	71-43-2	0.1-0.5	

Notes

The specific chemical identity and/or exact percentage of composition (concentration) has been withheld as a trade secret.

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SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Take precautions to prevent a fire (e.g. remove sources of ignition). Remove source of exposure or move to fresh air. Call a Poison Centre or doctor if you feel unwell.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Quickly and gently blot or brush away excess chemical. Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes. Call a Poison Centre or doctor if you feel unwell. If skin irritation occurs, get medical advice or attention.

Eye Contact

Avoid direct contact. Wear chemical protective gloves if necessary. Quickly and gently blot or brush chemical off the face. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists, get medical advice or attention.

Ingestion

Do not induce vomiting. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again. Immediately call a Poison Centre or doctor.

First-aid Comments

If exposed or concerned, get medical advice or attention.

Most Important Symptoms and Effects, Acute and Delayed

No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Immediate Medical Attention and Special Treatment

Target Organs

Auditory (hearing) system, eyes, kidneys, liver, nervous system, skin.

Special Instructions

No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Medical Conditions Aggravated by Exposure

Dermatitis.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Highly flammable liquid and vapour. Can ignite at room temperature. Releases vapour that can form explosive mixture with air. Can be ignited by static discharge. Can accumulate static charge by flow, splashing or agitation. May travel a considerable distance to a source of ignition and flash back to a leak or open container. See Section 9 (Physical and Chemical Properties) for flash point and explosive limits. May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, resulting in a fire hazard. Closed containers may rupture violently when heated releasing contents.

In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide; toxic, flammable aldehydes; irritating chemicals; toxic chemicals.

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Special Protective Equipment and Precautions for Fire-fighters

Review Section 6 (Accidental Release Measures) for important information on responding to leaks/spills. See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Evacuate downwind locations. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Eliminate all ignition sources. Use grounded, explosion-proof equipment. May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, if ventilation is not sufficient. Distant ignition and flashback are possible. Monitor area for flammable or explosive atmosphere.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for Safe Storage

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Toluene	20 ppm A4	Not established	100 ppm	150 ppm		

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Xylene (mixed isomers)	100 ppm	150 ppm	100 ppm	150 ppm		
Benzene	0.5 ppm A1 Skin	2.5 ppm A1 Skin	1 ppm	5 ppm		

Appropriate Engineering Controls

General ventilation is usually adequate. For large scale use of this product: do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored. Control static electricity discharges which includes bonding of equipment to ground. Use only non-combustible, compatible materials for walls, floors, ventilation system, air cleaning devices, pallets, shelving. Provide eyewash and safety shower if contact or splash hazard exists.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Respiratory Protection

Not usually required when working with small quantities. For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Clear colourless liquid.
Odour	Aromatic
Odour Threshold	0.16 - 37 ppm (0.6 - 138.9 mg/m ³) (detection)
pH	Not available
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	110.6 °C (231.1 °F)
Flash Point	4 °C (39 °F) (closed cup)
Evaporation Rate	2.0 (n-butyl acetate = 1)
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	7.1% (upper); 1.2% (lower)
Vapour Pressure	21.98 mm Hg (2.93 kPa) at 20 °C
Vapour Density (air = 1)	3.18
Relative Density (water = 1)	0.865 - 0.870 at 20 °C
Solubility	Slightly soluble (0.1-1 g/100 mL) in water; Soluble in all proportions in common organic solvents.
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	480 °C (896 °F)
Decomposition Temperature	Not available
Viscosity	0.676 mm ² /s at 20 °C (kinematic); 0.586 mPa.s at 20 °C (dynamic)
Other Information	
Physical State	Liquid
Molecular Weight	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity

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None known.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources. Temperatures above 3.0 °C (37.4 °F)

Incompatible Materials

Increased risk of fire and explosion on contact with: strong oxidizing agents (e.g. perchloric acid).

Reacts explosively with: nitric acid.

Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide; very toxic, flammable aldehydes.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Toluene	12500-28800 mg/m ³ (rat) (4-hour exposure)	> 5580 mg/kg (rat)	12125 mg/kg (rabbit)
Xylene (mixed isomers)	6350 mg/m ³ (male rat) (4-hour exposure)	3523 mg/kg (rat)	> 1700 mg/kg (rabbit)
Benzene	13700 ppm (rat) (4-hour exposure)	930 mg/kg (rat)	8240 mg/kg (rabbit)

LC50: Not applicable.

LD50 (oral): Not applicable.

LD50 (dermal): Not applicable.

Skin Corrosion/Irritation

Animal tests show moderate or severe irritation.

Serious Eye Damage/Irritation

Human experience and animal tests show mild irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Causes depression of the central nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion. A severe exposure can cause unconsciousness.

Skin Absorption

May be harmful based on limited evidence.

Ingestion

May be harmful based on human experience. Depression of the central nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion. A severe exposure can cause unconsciousness. Can cause effects as described for inhalation.

Aspiration Hazard

Can cause lung damage if aspirated based on human experience. Death can result.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause If inhaled: harmful effects on the hearing (auditory) system. Exposure to this chemical and loud noise may cause greater hearing loss than expected from noise exposure alone.

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May cause If inhaled: at high concentrations effects on the central nervous system. Symptoms may include restlessness, reduced ability to think, muscle tremors, memory loss and personality changes. "organic solvent syndrome".

Causes Following skin contact: dermatitis. Symptoms may include dry, red, cracked skin (dermatitis).

May cause damage to organs based on animal studies. If inhaled: at high concentrations harmful effects on the kidneys, harmful effects on the liver.

Respiratory and/or Skin Sensitization

Not a respiratory sensitizer. Not a skin sensitizer.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Toluene	Group 3	A4	Not Listed	Not Listed
Xylene (mixed isomers)	Group 3	A4	Not Listed	Not Listed
Benzene	Group 1	A1	Known carcinogen	Listed

Key to Abbreviations

A3 = Animal carcinogen.

Group 3 = Not classifiable as to its carcinogenicity to humans.

A4 = Not classifiable as a human carcinogen.

Group 1 = Carcinogenic to humans.

Reproductive Toxicity

Development of Offspring

Animal studies show effects on the offspring. If inhaled: known to cause: decreased weight, long-lasting behavioural changes, hearing loss.

May cause effects on the unborn child based on limited evidence. If inhaled: has been associated with: miscarriage. Teratogenic(external, soft tissue and skeletal defects) birth defects.

Sexual Function and Fertility

Conclusions cannot be drawn from the limited studies available.

Effects on or via Lactation

Can transfer to mother's milk.

Germ Cell Mutagenicity

May be mutagenic based on limited evidence.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Toluene	7.63 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour; fresh water)	8 mg/L (Daphnia magna (water flea); 24 hr)		
Xylene (mixed isomers)	13.4 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour; fresh water)	150 mg/L (Daphnia magna (water flea))		

Benzene	32000 ug/L (Pimephales promelas (fathead minnow); 48-hour; fresh water; static)	10000 ug/L (Daphnia magna (water flea); 48-hour; fresh water; static)		
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Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea
Toluene	5.44 mg/L (Oncorhynchus mykiss (rainbow trout))		Not available	
Xylene (mixed isomers)	Not available		Not available	

Persistence and Degradability

No information was located.

Bioaccumulative Potential

No information was located.

Mobility in Soil

No information was located.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	1294	TOLUENE	3	II
US DOT	1294	TOLUENE	3	II

Environmental Hazards Potential Marine Pollutant

Special Precautions Please note: In containers of 1 L (1Kg) this product is qualified as a "consumer commodity" ORM-D under DOT
In containers of 1 L (1Kg) capacity or less this product is classified as a "Limited Quantities" "Consumer Commodity" under TDG regulations.

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

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Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

Additional USA Regulatory Lists

California Proposition 65:

WARNING: This product contains chemicals known to the State of California to cause birth defects.

WARNING: This product contains chemicals known to the State of California to cause cancer.

SECTION 16. OTHER INFORMATION

SDS Prepared By Compliance and Regulatory Department

Phone No. 905-878-5544

Date of Preparation January 08, 2016

Date of Last Revision January 08, 2016

Additional Information We are committed to uphold the Industry Consumer Ingredient Communication Voluntary Initiative.

Please send us your request by visiting our website at www.recochem.com.

Ingredients present (intentionally added ingredients) at a concentration of greater than one percent (1%) shall be listed in descending order of predominance. Ingredients present at a concentration of not more than one percent shall be listed but may be disclosed without respect to order of predominance.

Disclaimer

Notice to reader: 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.

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