



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Toluene, ACS Reagent Grade

Product Number RSOT0200

Other Identifying Product Numbers RSOT0200-20E4, RSOT0200-4C, RSOT0200-500C, RSOT0200-55E4

1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

1.3. Details of the Supplier of the Safety Data Sheet

Company Ricca Chemical Company

Address 412 West Fork Drive

Arlington, TX 76012 USA

Telephone 888-467-4222

1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA) 800-424-9300

CHEMTREC (International) 1+ 703-527-3887

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SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

Hazard Class	Category	Hazard Statements	Precautionary Statements
Acute Toxicity - Inhalation (Vapors)	Category 4	H332	P261,P271,P304+P340,P312
Flammable Liquids	Category 2	H225	P210,P233,P240,P241,P242,P243, P280,P303+P361+P353,P370+P378, P403+P235,P501
Skin Corrosion / Irritation	Category 2	H315	P264,P280,P302+P352,P321, P332+P313,P362+P364
Reproductive Toxicity	Category 2	H361	P201,P202,P280,P308+P313,P405, P501
Specific Target Organ Toxicity - Single Exposure - Transient Effects	Category 3 - Narcotic Effects	H336	P261,P271,P304+P340,P312, P403+P233,P405,P501
Specific Target Organ Toxicity - Repeated Exposure	Category 1	H372	P260,P264,P270,P314,P501
Aspiration Hazard	Category 1	H304	P301+P310,P331,P405,P501

2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

NOTE: Hazard statements may be combined on labels to improve clarity and readability.

Hazard Number	Hazard Statement
H225	Highly flammable liquid and vapor
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure

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Precautionary Statements:

NOTE: Precautionary statements may be combined or consolidated on labels to improve clarity and readability.

Prevention

Precautionary Number	Precautionary Statement
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.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharge.
P260	Do not breathe fumes or mist.
P264	Wash hands, arms, and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection.

Response

Precautionary Number	Precautionary Statement
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 or shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	If exposed or concerned: Get medical advice or attention.
P312	Call a poison center or doctor if you feel unwell.
P331	Do NOT induce vomiting.
P332+P313	If skin irritation occurs: Get medical advice or attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use dry chemical, foam, or carbon dioxide to extinguish.

Storage

Precautionary Number	Precautionary Statement
P403+P233+P235	Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405	Store locked up.

Disposal

Precautionary Number	Precautionary Statement
P501	Dispose of contents/container to suitable waste stream in accordance with local, state, federal, and international regulations.

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2.3. Hazards not Otherwise Classified

No other hazards identified.

2.4. Ingredients of Unknown Acute Toxicity

SECTION 3: Composition / Information on Ingredients

3.1. Components of Substance

Chemical Name (IUPAC)	Common Name and Synonyms	CAS Number	Weight%
methylbenzene	Toluene; phenylmethane	108-88-3	100.00

SECTION 4: First-Aid Measures

4.1. Description of Necessary Measures

Eye Contact: May cause irritation with burning and stinging with possible damage to the cornea and conjunctiva.

Ingestion: IF SWALLOWED: Immediately call a POISON CENTER or doctor. Aspiration hazard. Do not induce vomiting, vomiting may occur spontaneously. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Call a physician.

Inhalation: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Skin Contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. May cause irritation, redness and pain. May be absorbed through skin on prolonged exposure.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Suspected of damaging fertility or the unborn child DANGER! Flammable. Keep away from heat, sparks, and open flames. Use with adequate ventilation. Avoid prolonged breathing of vapor or contact with skin. Harmful if swallowed. Do not pipet by mouth. If ingested, do not induce vomiting. Give large quantity of water and call a physician. Wash areas of contact with plenty of water for 15 minutes. For eyes, get medical attention. EYE CONTACT: May cause irritation with burning and stinging with possible damage to the cornea and conjunctiva. SKIN CONTACT: May cause irritation, redness and pain. May be absorbed through skin on prolonged exposure. CHRONIC EFFECTS / CARCINOGENICITY: Chronic exposure may affect kidneys and liver.

4.3. Immediate Medical Attention or Special Treatment Needed

Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops. Aspiration hazard. Do not induce vomiting, vomiting may occur spontaneously. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Call a physician.

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SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

In case of fire: Use dry chemical, foam, or carbon dioxide to extinguish. Carbon dioxide, dry chemical, foam

5.2. Specific Hazards Arising from the Substance or Mixture in a Fire

Highly flammable liquid and vapor Flammable liquid. Vapors are heavier than air and may travel to a source of ignition and flash back. Liquid floats on water and may travel to a source of ignition and spread fire.

5.3. Special Protective Equipment and Precautions for Firefighters

Wear full protective clothing and positive pressure self-contained breathing apparatus. Polyvinyl alcohol, Teflon, or Viton barrier recommended.

SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Ground and bond container and receiving equipment. Use explosion-proof equipment. Use non-sparking tools. Take action to prevent static discharge. Wear protective gloves and eye protection.

6.2. Cleanup and Containment Methods and Materials

Eliminate all ignition sources. Stop or control the leak, if this can be done without undue risk. Use water spray to cool and disperse vapors and protect personnel. Absorb in noncombustible material for proper disposal. Control runoff and isolate discharged material for proper disposal.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Store in secure, flammable storage area away from all sources of ignition. Empty containers may be hazardous since they retain product residues.

SECTION 8: Exposure Controls / Personal Protection

8.1. Exposure Limits

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U.S. OSHA - Permissible Exposure Limits (PEL) - Time Weighted Averages (TWA)

Chemical Name	CAS Number	Exposure Limit
Toluene	108-88-3	200 ppm TWA

U.S. OSHA - Permissible Exposure Limits (PEL) - Ceiling Limits

Chemical Name	CAS Number	Exposure Limit
Toluene	108-88-3	300 ppm Ceiling

U.S. OSHA - Permissible Exposure Limits (PEL) - Short Term Exposure Limits (STEL)

No limits found.

U.S. OSHA - Specifically Regulated Chemicals

No limits found.

ACGIH - Threshold Limit Values - Ceilings (TLV-C)

No limits found.

ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)

No limits found.

ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

Chemical Name	CAS Number	Exposure Limit
Toluene	108-88-3	20 ppm TWA

8.2. Engineering Controls

Use only outdoors or in a well-ventilated area. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limit.

8.3. Individual Protective Measures and Personal Protective Equipment

Respiratory Protection: Normal room ventilation is adequate. If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge may be worn.

Skin Protection: Chemical resistant gloves.

Eye Protection: Safety glasses or goggles.

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SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Physical State:	liquid
Color:	Colorless
Odor:	characteristic, model airplane glue
Odor Threshold:	Data not available.
Melting/Freezing Point:	-95°C
Boiling Point/Range:	Approximately 111°C
Flammability:	Data not available.
Flammability/Explosive Limits:	0.19
Flash Point:	4.4 °C closed cup (ECHA_API)
Auto-Ignition Temperature:	Data not available.
Decomposition Temperature:	Data not available.
pH:	N/A
Kinematic Viscosity:	Data not available.
Solubility:	515 mg/L at 20°C
Vapor Pressure:	30 hPa at 20°C
Evaporation Rate:	2.24 (butyl acetate = 1)
Relative Density:	0.87
Relative Vapor Density:	3.1
Particle Characteristics:	Data not available.
Partition Coefficient n-octanol/water, log	2.65

SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

10.2. Possibility of Hazardous Reactions

Data not available.

10.3. Conditions to Avoid and Incompatible Materials

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Strong oxidizing agents such as Nitrates, Perchlorates or Sulfuric Acid, heat, sparks, open flame. Will attack some forms of plastics, rubber and coatings.

10.4. Hazardous Decomposition Products

Will not occur.

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SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Oral acute toxicity estimate (ATE): 4328 mg/kg(calculated)

Chemical Name	CAS Number	Toxicity
Toluene	108-88-3	Oral LD50 Rat 4328 mg/kg (Source: Canada_HSA)

Acute Toxicity - Dermal Exposure:

Not acutely toxic.

Chemical Name	CAS Number	Toxicity
Toluene	108-88-3	Dermal LD50 Rabbit 12200 mg/kg (Source: Canada_HSA)

Acute Toxicity - Inhalation Exposure:

Inhalation acute toxicity estimate (ATE, vapor): 19.0000 mg/L, 4 h(calculated)

Chemical Name	CAS Number	Toxicity
Toluene	108-88-3	Inhalation LC50 Rat 19.0 mg/L 4 h (Source: Canada_HSA)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
Toluene	108-88-3	Group 3 (Not Classified) - Monograph 71 [1999]; Monograph 47 [1989]

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
Toluene	108-88-3	Male Rat - No Evidence; Female Rat - No Evidence; Male Mice - No Evidence; Female Mice - No Evidence (TR-371)

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
		No data found.

11.3 Additional Toxicology Information:

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May be fatal if swallowed and enters airways. Causes skin irritation. Harmful if inhaled. May cause drowsiness or dizziness. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Chemical Name	CAS Number	Species	Exposure	Toxicity
Toluene	108-88-3	Freshwater Algae	Acute	EC50 96 h <i>Pseudokirchneriella subcapitata</i> >433 mg/L (IUCLID); EC50 72 h <i>Pseudokirchneriella subcapitata</i> 12.5 mg/L [static] (EPA)
Toluene	108-88-3	Freshwater Fish	Acute	LC50 96 h <i>Pimephales promelas</i> 15.22 - 19.05 mg/L [flow-through] (1 day old, EPA); LC50 96 h <i>Pimephales promelas</i> 12.6 mg/L [static] (EPA); LC50 96 h <i>Oncorhynchus mykiss</i> 5.89 - 7.81 mg/L [flow-through] (EPA); LC50 96 h <i>Oncorhynchus mykiss</i> 14.1 - 17.16 mg/L [static] (EPA); LC50 96 h <i>Oncorhynchus mykiss</i> 5.8 mg/L [semi-static] (EPA); LC50 96 h <i>Lepomis macrochirus</i> 11.0 - 15.0 mg/L [static] (EPA); LC50 96 h <i>Oryzias latipes</i> 54 mg/L [static] (EPA); LC50 96 h <i>Poecilia reticulata</i> 28.2 mg/L [semi-static] (EPA); LC50 96 h <i>Poecilia reticulata</i> 50.87 - 70.34 mg/L [static] (EPA)
Toluene	108-88-3	Water Flea	Acute	EC50 48 h <i>Daphnia magna</i> 5.46 - 9.83 mg/L [Static] (EPA); EC50 48 h <i>Daphnia magna</i> 11.5 mg/L (IUCLID)

12.2. Persistence and Degradability

Data not available.

12.3. Bioaccumulative Potential

Data not available.

12.4. Mobility in soil

Data not available.

12.5. Other Adverse Ecological Effects

Data not available.

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SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods

Data not available.

SECTION 14: Transportation Information

14.1 Transportation by Land - Department of Transportation (DOT, United States of America)

Sizes: 4 L, 16 L, 20 L, 55 Gal, 500 mL

UN Number: UN1294

Proper Shipping Name: Toluene

Hazard Class: 3

Packing Group: II

Hazard Label(s):



14.2 Transportation by Air - International Air Transport Association (IATA)

Sizes: 4 L, 16 L, 20 L, 55 Gal, 500 mL

UN Number: UN1294

Proper Shipping Name: Toluene

Hazard Class: 3

Packing Group: II

Hazard Label(s):





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14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 4 L, 16 L, 20 L, 55 Gal, 500 mL

UN Number: UN1294

Proper Shipping Name: TOLUENE

Hazard Class: 3

Packing Group: II

Hazard Label(s):



SECTION 15: Regulatory Information

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15.01. Occupational Safety and Health Administration (OSHA) Hazards

Chemical Name	CAS Number	Regulatory Information
No data found.		

15.02. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Chemical Name	CAS Number	RQ
No data found.		

15.03. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Chemical Name	CAS Number	Regulatory Information
Toluene	108-88-3	1000 lb final RQ; 454 kg final RQ

15.04. Superfund Amendments and Reauthorization Act (SARA) 313 Toxics Release Inventory (TRI)

Chemical Name	CAS Number	List	Regulatory Information
Toluene	108-88-3	Emission Reporting	1.0 % de minimis concentration

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Toluene	108-88-3	Present

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Toluene	108-88-3	Environmental hazard

15.07. New Jersey Worker and Community Right-to-Know Components

Chemical Name	CAS Number	Regulatory Information
Toluene	108-88-3	sn 1866

15.08. California Proposition 65

Chemical Name	CAS Number	Regulatory Information
Toluene	108-88-3	developmental toxicity, 1/1/1991

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15.09. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

Chemical Name	CAS Number	List	Status
Toluene	108-88-3	DSL	Present

15.10. United States of America Toxic Substances Control Act (TSCA) List

Chemical Name	CAS Number	Status
Toluene	108-88-3	Present (ACTIVE)

15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Chemical Name	CAS Number	List	Number
Toluene	108-88-3	EINECS	203-625-9

15.12. China - Inventory of Existing chemical Substances (IECSC)

Chemical Name	CAS Number	Status
Toluene	108-88-3	Present [16691]

15.13. Korea - Existing Chemicals Inventory (KECI/KECL)

Chemical Name	CAS Number	List	Status
Toluene	108-88-3	Annex 1	Present [KE-33936]

15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Toluene	108-88-3	(3)-2, (3)-60

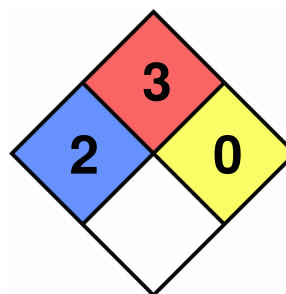
SECTION 16: Other Information

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16.1 National Fire Protection Associate (NFPA) Rating

Health: 2
Flammability: 3
Reactivity 0
Special Hazard:



16.2 Document Revision

Last Revision Date:
2026-05-23

DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.