



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

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: 448 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

Safety Data Sheet

SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

For the full text of the Hazard and Precautionary Statements listed below, see Section 16.

Hazard Class	Category	Hazard Statements	Precautionary Statements:
Acute Toxicity - Inhalation	Category 4	H332	P261, P271, P304+P340, P312
Skin Corrosion / Irritation	Category 2	H315	P264, P280, P302+P352, P321, P332+P313, P362
Reproductive Toxicity	Category 2	H361	P201, P202, P280, P308+P313, P405, P501
Specific Target Organs/Systemic Toxicity Following Single Exposure	Category 3	H335, H336	P261, P271, P304+P340, P312, P403+P233, P405, P501
Specific Target Organs/Systemic Toxicity Following Repeated Exposure	Category 1	H372	P260, P264, P270, P314, P501
Aspiration Hazard	Category 1	H304	P301+P310, P331, P405, P501
Flammable Liquids	Category 2	H225	P210, P233, P240, P241, P242, P243, P280, P303+P361+P353, P370+P378, P403+P235, P501

2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

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.
H335	May cause respiratory irritation.
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.

Safety Data Sheet

Precautionary Statements:

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, sparks and open flame. No smoking.
P233	Keep container tightly closed.
P240	Ground container and receiving equipment.
P241	Use explosion-proof equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe fumes, mist, vapors, or spray.
P261	Avoid breathing fumes, mist, vapors, or spray.
P264	Wash arms, hands 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.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or physician.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical attention.
P312	Call a POISON CENTER or physician if you feel unwell.
P314	Get medical attention if you feel unwell.
P321	Specific treatment (Wash areas of contact with water).
P331	Do NOT induce vomiting.
P332+P313	If skin irritation occurs: Get medical attention.
P362	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

Safety Data Sheet

SECTION 3: Composition / Information on Ingredients

3.1. Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Toluene	C ₆ H ₅ CH ₃	92.13 g/mol	108-88-3	100.00

SECTION 4: First-Aid Measures

4.1. General First Aid Information

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

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. May cause irritation, redness and pain. May be absorbed through skin on prolonged exposure.

Ingestion: IF SWALLOWED: Immediately call a POISON CENTER or physician. 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.

4.2. Most Important Symptoms and Effects, Acute and Delayed

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

Specific treatment (Wash areas of contact with water). 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.

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

Safety Data Sheet

5.2. Specific Hazards Arising from the Substance or Mixture

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 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 container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against 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 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 Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Toluene (108-88-3)	TWA	USA	200 ppm TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Toluene (108-88-3)	TLV-TWA	USA	20 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Toluene (108-88-3)	PEL-Ceiling	USA	300 ppm Ceiling	U.S. - OSHA - Final PELs - Ceiling Limits

8.2. Exposure Controls

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.

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



Safety Data Sheet

Skin Protection: Wear protective gloves and eye protection. Chemical resistant gloves.

Eye Protection: Wear protective gloves and eye protection. Safety glasses or goggles.

8.3. Personal Protective Equipment

Wear protective gloves and eye protection. Normal room ventilation is adequate. If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge may be worn. Chemical resistant gloves. Safety glasses or goggles.

SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Appearance: Colorless liquid

Physical State: Liquid

Odor: Characteristic, model airplane glue

Odor Threshold: Data not available.

pH: Data not available.

Melting/Freezing Point: -95°C

Initial Boiling Point/Range: Approximately 111°C - Approximately 111°C

Flash Point: 4°C

Evaporation Rate: 2.24 (butyl acetate = 1)

Flammability: Data not available.

Flammability/Explosive Limits: Data not available.

Vapor Pressure: 30 hPa at 20°C

Vapor Density: 3.1

Relative Density: 0.87

Solubility: 515 Mg/L at 20°C

Partition Coefficient: 2.65

Auto-Ignition Temperature: Data not available.

Decomposition Temperature: Data not available.

Viscosity: Data not available.

Explosive Properties: Data not available.

Oxidizing Properties: Data not available.

SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

Safety Data Sheet

10.2. Possibility of Hazardous Reactions

Data not available.

10.3. Conditions to Avoid and Incompatible Materials

Keep away from heat, sparks and open flame. No smoking. Keep container tightly closed. 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.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Not applicable.

Acute Toxicity - Dermal Exposure:

Not applicable.

Acute Toxicity - Inhalation Exposure:

Harmful if inhaled. Avoid breathing fumes, mist, vapors, or spray. Use only outdoors or in a well-ventilated area. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

Acute Toxicity - Other Information:

LD50, Oral , Rat: (Toluene) 636 mg/kg, details of toxic effects not reported other than lethal dose value.

Skin Corrosion and Irritation:

Causes skin irritation. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. Specific treatment (Wash areas of contact with water). If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.

Serious Eye Damage and Irritation:

Not applicable.

Respiratory Sensitization:

Not applicable.

Skin Sensitization:

Not applicable.

Germ Cell Mutagenicity:

Not applicable.

Carcinogenicity:

Not applicable.

Reproductive Toxicity:

Suspected of damaging fertility or the unborn child. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.



Safety Data Sheet

Specific Target Organ Toxicity from Single Exposure:

May cause respiratory irritation. May cause drowsiness or dizziness. Avoid breathing fumes, mist, vapors, or spray. Use only outdoors or in a well-ventilated area. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

Specific Target Organ Toxicity from Repeated Exposure:

Causes damage to organs through prolonged or repeated exposure. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Get medical attention if you feel unwell. Dispose of contents in accordance with local, state, federal and international regulations.

Aspiration Hazard:

May be fatal if swallowed and enters airways. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

Additional Toxicology Information:

Data not available.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Not applicable.

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.

SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods

Data not available.

Safety Data Sheet

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):



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):



Safety Data Sheet

SECTION 15: Regulatory Information

15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.

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

Not listed.

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

Toluene (CAS # 108-88-3): 1000 lb final RQ; 454 kg final RQ

15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

Toluene (CAS # 108-88-3): 1.0 % de minimis concentration

15.5. Massachusetts Right-to-Know Substance List

Toluene (CAS # 108-88-3): Present

15.6. Pennsylvania Right-to-Know Hazardous Substances

Toluene (CAS # 108-88-3): Environmental hazard

Toluene (CAS # 108-88-3): Present

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

Toluene (CAS # 108-88-3): flammable - third degree; teratogen

Toluene (CAS # 108-88-3): sn 1866

Toluene (CAS # 108-88-3): SN 1866 500 lb TPQ

15.8. California Proposition 65

Toluene (CAS # 108-88-3): developmental toxicity, 1/1/1991

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

Toluene (CAS # 108-88-3): Present (DSL)

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

All components of this solution are listed as active on the TSCA Inventory or are mixtures (hydrates) of active items listed on the TSCA Inventory.

Toluene (CAS # 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)

Toluene (CAS # 108-88-3): 203-625-9

Safety Data Sheet

SECTION 16: Other Information

16.1. Full Text of Hazard Statements and Precautionary Statements

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

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks and open flame. No smoking. Ground container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye protection.

IF SWALLOWED: Immediately call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical attention. Get medical attention if you feel unwell. Specific treatment (Wash areas of contact with water). Do NOT induce vomiting. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.

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

Dispose of contents in accordance with local, state, federal and international regulations.

16.2. Miscellaneous Hazard Classes

Canadian Carcinogenicity Hazard Class: Not Applicable.

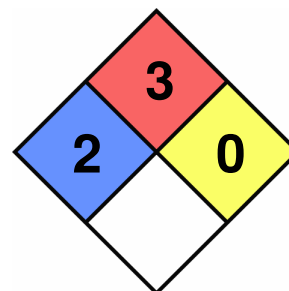
Physical Hazards Not Otherwise Classified (PHNOC): Not Applicable.

Health Hazards Not Otherwise Classified (HHNOC): Not Applicable.

Biohazardous Infectious Materials Hazard Class: Not Applicable.

16.3. National Fire Protection Association (NFPA) Rating

Health: 2
Flammability: 3
Reactivity: 0
Special Hazard:





Safety Data Sheet

16.4. Document Revision

Last Revision Date: 2023-10-11

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.