ESSENTIAL CHEMISTRY. INNOVATIVE SOLUTIONS.

SAFETY DATA SHEET

Print Date: *December 26, 2018*

Section 1: Product & Company Information

Product Identifier: **Toluene**

Other Means of Identification
Product Number: *151251*

Recommended Use and Restrictions on Use
Recommended Use: *Solvent. For Industrial Uses.*
Restrictions on Use: *Not known.*

Manufacturer / Importer / Supplier / Distributor Information
Company Name: *CORECHEM Inc.*
Address: *4320 Greenway Drive*
Knoxville, TN 37918
USA

Information Telephone Number: *1-865-524-4239*
Fax Number: *1-865-524-3375*
Website: *www.corecheminc.com*
Contact Person: *Regulatory Manager*
E-mail: *regulatory@corecheminc.com*

Emergency Phone Number: *Chemtrec® 1-800-424-9300 / Outside USA 1-703-527-3887 (monitored 24 hours/day)*

Section 2: Hazards Identification

GHS Hazard Classification(s)
In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Physical Hazard(s)
Flammable, Liquids - 2

Health Hazard(s)
Aspiration Hazard - 1
Corrosion/Irritation, Skin - 2
Toxic to Reproduction - 2
Specific Target Organ Toxicity (STOT), Single exposure - 2
Specific Target Organ Toxicity (STOT)-CNS, Single exposure - 3

Environmental Hazard(s)
Aquatic, Acute - 2

Label Elements
Signal Word
DANGER

Hazard Symbol(s)

Hazard Statement(s)
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.
H361: Suspected of damaging fertility or the unborn child.
H371: May cause damage to organs.
H401: Toxic to aquatic life.

Precautionary Statements
General
Not applicable.

Prevention
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/open flames/hot surfaces. No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting/equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P264: Wash face, hands and any exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P281: Use personal protective equipment as required.

Response

P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313: IF exposed or concerned: Get medical advice/attention.
P309 + P311: IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P321: Specific treatment (see supplemental first aid instructions on this label).
P332 + P313: If skin irritation occurs: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.
P370 + P378: In case of fire: Use suitable extinguishing media for extinction.

Storage

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.

Disposal

P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Section 3: Composition/Information on Ingredients

Substance

Chemical Identity [2]	Common Name/Synonym(s)	CAS # [3]	Weight %	Impurity or Stabilizing Additive
Toluene	-	*108-88-3*	*99 – 100%*	*No*

1. *Information regarding the composition and the percent ranges of the mixtures ingredients are not presented as it Confidential Business Information (CBI). Where a medical emergency exists (as determined by medical professional), timely disclosure of CBI is assured. The information omitted pertains to only the names of the substances and the concentration in the mixture (product) and can only be requested by a doctor/physician or Local/State/Provincial or Federal Authority.*
2. *Non-hazardous ingredients are not presented as to protect the proprietary formula of the product.*
3. *"—"Indicates ingredient is a mixture and contains multiple ingredients or may have no identifying CAS number.*

Section 4: First-Aid Measures

General Information

Call a physician Immediately.

Inhalation

Move to fresh air. Get medical attention immediately. Respiratory Problems: consult a doctor/ medical service.

Skin Contact

Wash immediately with lots of water. Soap may be used. Do not apply chemical neutralizing agents. Remove clothing before washing. Take victim to a doctor if irritation persists.

Eye Contact

Rinse immediately with lots of water. Remove contact lenses if present and easy to do so. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Take victim to a doctor or medical service if irritation persists.

Ingestion

Call a physician or poison control center immediately. Do NOT induce vomiting. Rinse mouth. If vomiting Occurs, keep head, low so that stomach content gets into lungs. Aspiration may cause pulmonary edema and pneumonitis.

Most important symptoms/effects, acute and delayed

Symptoms

Decrease in Motor functions. Behavioral changes. Narcosis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Aspiration may cause pulmonary edema and pneumonitis. Skin irritation. May cause redness and pain. Direct contact with eyes may cause temporary irritation. Prolonged exposure may cause chronic Effects.

Indication of immediate medical attention and special treatment needed

Hazards

No data available.

Treatment

Treat symptomatically. Symptoms may be delayed.

Section 5: Fire-Fighting Measures

General Fire Hazards

In case of fire and/or explosion do not breathe fumes.

Suitable (and Unsuitable) Extinguishing Media

Suitable Extinguishing Media

Quick acting ABC powder extinguisher. Quick acting BC powder extinguisher. Quick acting CO2 extinguisher. Class B foam (Not alcohol resistant.)

Unsuitable Extinguishing Media

Water (Quick acting extinguisher, reel): Risk of puddle expansion. Water, risk of puddle expansion.

Specific Hazards Arising from the Chemical

Vapor may cause flash fire. Vapor is denser than air- flashback may be possible over considerable distance. The product can accumulate electrostatic charges, which may cause an electric spark. (Ignition source)

Special Protective Equipment and Precautions for Firefighters

Special Fire-Fighting Equipment Procedures

Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special Protective Equipment for Fire-Fighters

As in any fire, wear self-contained breathing apparatus pressure-demand (OSHA/NIOSH approved or equivalent) and full protective gear.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Gloves, Protective goggles. Head and neck protection. Protective clothing. Large spills/ in enclosed spaces: compressed air apparatus. Large spills in enclosed spaces: gas tight suit. Keep upwind. Mark the danger area. Consider evacuation. Seal off low lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosion proof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes. Do not attempt to take action without suitable protective equipment. For further information see section 8: Exposure controls/personal protection.

Methods and Materials for Containment and Clean-Up

Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the spilled liquid. Try to reduce evaporation. Measure the concentration of the explosive gas/ air mixture. Dilute/disperse combustible gas/vapor with a water curtain. Provide equipment/ receptacles with earthing. Do not use compressed air for pumping over spills. Liquid Spill: Cover with foam. Take up liquid spill into inert absorbent material. e.g. sand, earth, vermiculite. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Take collected spill to manufacturer/ competent authority. Wash clothing and equipment after handling. Dispose of materials or solid residues at an authorized site.

Notification Procedures

Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental Precautions

Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Section 7: Handling and Storage

Precautions for Safe Handling

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Ground/bond container and receiving equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using the product. Use caution when adding this material to water. See Section 8 of the MSDS for Personal Protective Equipment. Avoid contact with eyes. Avoid contact with skin.

Conditions for Safe Storage, including any Incompatibilities

Flammable liquid and storage. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static discharge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep away from incompatible materials. Keep away from food, drink and animal feeding stuffs. Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Section 8: Exposure Controls/Personal Protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Value	Source
Toluene	*TWA*	*20 ppm*	*US. ACGIH Threshold Limit Values*
	TWA	*100 ppm 375 mg/m3*	*US OSHA Table Z-1*
	STEL	*150 ppm 560 mg/m3*	*US OSHA Table Z-1*
	TWA	*200 ppm*	*US OSHA Table Z-1*
	Ceiling	*300 ppm*	*US OSHA Table Z-1*
	MAX. CONC	*500 ppm*	*US OSHA Table Z-1*

Biological Limit Values

The product does not contain any relevant quantities of hazardous materials with assigned biological limit values.

Appropriate Engineering Controls

Ensure good ventilation of the work Station.

Individual protection measures, such as personal protective equipment (PPE)

General Information

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/Face Protection

Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin Protection

Hand Protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory Protection

Full face mask with a filter type A at conc. In air> exposure limits.

Hygiene Measures

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Section 9: Physical and Chemical Properties

Appearance:	
Physical State:	*Liquid*
Color:	*Clear with slight color.*
Odor:	*Characteristic.*
Odor Threshold:	*0.2-69 ppm*
	0.8-276 mg/m³
pH:	*No data available.*
Melting Point/Freezing Point:	*-95°C*
Initial Boiling Point and Boiling Range:	*231.08 °F*
Critical temperature	*231 °C*
Critical Pressure	*4,1077 hPa*
Flash Point:	*39.2 °F (Closed Cup)*
Evaporation Rate *(butyl acetate=1)*:	*2.24*
Vapor Pressure	*21 mm Hg*
Flammability (solid, gas):	*No data available.*
Upper/Lower Limit on Flammability or Explosive Limits	
Flammability Limit – Upper:	*7.1 % (V)*
Flammability Limit – Lower:	*1.1 % (V)*
Explosive Limit – Upper:	*No data available.*
Explosive Limit – Lower:	*No data available.*
Vapor Pressure:	*3.8 kPa (25 °C)*
Vapor Density *(air = 1)*:	*3.1 AIR=1*
Relative Density *(water=1)*:	*1.6*
Specific Gravity /Density	*870 kg/m³*
Solubility(ies):	
Solubility in water:	*Insoluble in water*
Solubility (other):	*No data available.*
Partition coefficient (n-octanol/water):	*2.73*
Auto-Ignition Temperature:	*896 °F*
Decomposition Temperature:	*No data available.*
Viscosity Kinetic	*0.69 mm²/s (20 °C)*
Viscosity dynamic	*0.6 mPa.s (20 °C)*
Explosion Limits	*1.3-7 vol %*
	46-270 g/m³
	LEL: 1.3 vol %
	UEL: 7 vol %
Minimum ignition energy	*0.3 mJ*
Specific Conductivity	*< 1 pS/m*
Saturation Concentration	*110 g/m³*
VOC Content	*100%*
Other Properties	*Gas/Vapor heavier than air at 20 °C. Clear. Volatile. Substance has a neutral reaction. May generate electrostatic charges.*

Other Information:

Molecular Weight:	*92.14 g/mol*
Formula:	*C_7H_8*

Section 10: Stability and Reactivity

Reactivity
Highly flammable liquid and vapor.

Chemical Stability
Material is stable under normal conditions.

Possibility of Hazardous Reactions
Hazardous polymerization does not occur.

Conditions to Avoid
Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

Incompatible Materials
Strong oxidizing agents. Chlorine.

Hazardous Decomposition Products
Thermal decomposition may release oxides of carbon.

Section 11: Toxicological Information

Information on routes of exposure

Ingestion: *Harmful if swallowed.*
Inhalation: *Harmful if inhaled. May cause irritation to the mucous membranes of the upper respiratory tract.*
Skin Contact: *Causes skin irritation.*
Eye Contact: *Causes serious eye irritation.*

Information on Toxicological Effects

Acute Toxicity (List all possible routes of exposure)

Oral
Toluene: LD 50 (Rat): 5,580 mg/kg

Dermal
Toluene: LD 50 (Rabbit): >5000 mg/kg

Inhalation
Toluene: LC 50 (Rat, 4 h): 25.7 mg/l air mg/l

Repeated Dose Toxicity
No data available.

Skin Corrosion/Irritation
Tingling/irritation of skin. Red Skin.

Serious Eye Damage/Eye Irritation
No Data

Respiratory/Skin Sensitization
EXPOSURE TO HIGH CONCENTRATIONS. Headache, nausea, feeling of weakness, dizziness, central nervous system depression, narcosis, mental confusion, drunkenness, coordination disorder, disturbed motor response, disturbances of consciousness.

Carcinogenicity

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

US. National Toxicology Program (NTP) Report on Carcinogens
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Germ Cell Mutagenicity

In Vitro
No mutagenic components identified.

In Vivo
No mutagenic components identified.

Reproductive Toxicity
May damage fertility or the unborn child.

Specific Target Organ Toxicity – Single Exposure
Narcotic effect. Respiratory tract irritation.

Specific Target Organ Toxicity – Repeated Exposure
Peripheral nervous system Central nervous system. Kidneys. Auditory organs.

Aspiration Hazard
May be fatal if swallowed and enters airways.

Other Effects
No data available.

Section 12: Ecological Information

Ecotoxicity

Acute Hazards to the Aquatic Environment

Fish

Toluene: LC 50 (Fathead minnow (Pimephales promelas), 96 h): 12.6 mg/l Mortality
Toluene: LC 50 (Coho salmon, silver salmon (Oncorhynchus kisutch), 96 h): 5.5 mg/l Mortality

Aquatic Invertebrates

Toluene: EC 50 (Brine shrimp (Artemia sp.), 24 h): 22.1 – 54.1 mg/l Intoxication
Toluene: EC 50 (Water flea (Daphnia magna), 48 h): 5.46 – 9.83 mg/l Intoxication

Toxicity to Aquatic Plants

No data available.

Chronic Hazards to the Aquatic Environment

Fish

No data available.

Aquatic Invertebrates

No data available.

Toxicity to Aquatic Plants

No data available.

Persistence and Degradability

Biodegradation

Expected to be readily biodegradable.

BOD/COD Ratio

No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Partition Coefficient n-octanol / water (log Kow)

Log Kow: 2.73

Mobility in Soil

Low potential for absorbance in the soil.

Other Adverse Effects

Toxic to aquatic organisms.

Section 13: Disposal Considerations

Disposal Instructions

Dispose of contents/ container in accordance with licensed collectors sorting instructions. Do not discharge into drains or into the environment. Remove waste in accordance with local and/or national regulations. Hazardous wastes shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail the risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport of handle hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution, or damage to people or animals. Recycle by distillation. Do not landfill. Incinerate under surveillance with energy recovery. May be discharged to company wastewater treatment plant. Flammable vapors may accumulate in the container.

Contaminated Packaging

Since emptied containers retain product residue, follow label warnings even after container is emptied.

Section 14: Transportation Information

US Department of Transportation (DOT)

UN Number: UN1294
UN Proper Shipping Name: Toluene
Technical Name: -
Hazard Class: 3
Subsidiary Hazard Risk: -
Packing Group: II
DOT Label/Placard Exemptions: Not determined
Special Provisions: IB2, T4, TP1

Packaging Exceptions: 49CFR 173.150
Packaging Non-Bulk: 49CFR 173.202
Packaging Bulk: 49CFR 173.243
Reportable Quantity (RQ): 1000lb (454kg)
Marine Pollutant: No
Poison Inhalation Hazard: No
Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Emergency Response Guidebook (ERG) #: 130

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

Section 15: Regulatory Information

US Federal Regulations

Toxic Substance Control Act (TSCA), Chemical Substance Inventory, Section 8(b)

This product or ingredient(s) are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance List (40 CFR 302.4)

The following chemical(s) in this material are subject to reporting levels established by CERCLA:
Toluene (CAS# 108-88-3)

Clean Air Act (CAA), Section 112(r)

No chemical(s) in this material are subject to the reporting requirements of CAA.

Emergency Planning and Community Right-To-Know Act (EPCRA)

EPCRA 302 Extremely Hazardous Substance

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA 304 Emergency Response Notification

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 304.

EPCRA 311/312 Emergency and Hazardous Materials Reporting

Fire Hazard: Yes
Sudden Release of Pressure: No
Reactive: No
Acute (Immediate) Health Hazard: Yes
Chronic (Delayed) Health Hazard: Yes

EPCRA 313 Toxic Chemical Release Inventory (TRI) Reporting

The following chemical(s) in this material are subject to reporting levels established by SARA Title III, Section 313:
Toluene (CAS# 108-88-3)

US State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Important Note: Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.

Section 16: Other Information

Hazardous Materials Identification System (HMIS®) Classification

Health Hazard: 2
Chronic Health Hazard: *
Flammability: 3
Physical Hazard: 0
(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

National Fire Protection Association (NFPA 704) Rating

Health Hazard: 2
Fire Hazard: 3
Reactivity Hazard: 0
Special: N/A
(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

Prepared By: Regulatory Manager
Version #: 001
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Revisions: 2

Key to Abbreviations and Acronyms

ATE - Acute Toxicity Estimate
ACGIH - American Conference of Industrial Hygienists

BCF - Bioconcentration Factor
EC50 - Effective concentration, 50%
IDHL – Immediately Dangerous to Life and Health
Kg – Kilogram
l – Liter
lb – Pound
LC50 - Lethal Concentration, 50%
LD50 - Lethal Dose, 50%
mg - milligram
ml – milliliter
N/A – Not Applicable
N/D – Not Determined
PEL – Permissible Exposure Limit
REL – Recommended Exposure Limit
STEL – Short-term Exposure Limit
TWA - Time weighted average

AIHA – American Industrial Hygiene Association
BEI - Biological Exposure Indices
CAS – Chemical Abstracts Service
DOT – US Department of Transportation
EPA – US Environmental Protection Agency
GHS - Globally Harmonized System of Classification and Labelling of Chemicals
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IBC - Intermediate Bulk Container
IMDG - International Maritime Dangerous Goods
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OSHA – US Occupational Health and Safety Administration
SARA – US EPA Superfund Amendments and Reauthorization Act
TSCA – US EPA Toxic Substances Control Act
UN - United Nations

References

HSDB® - Hazardous Substances Data Bank

Disclaimer

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