

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.31.2015

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Toluene, Reagent Grade

SECTION 1: Identification of the substance/mixture and of the supplier

Product name: Toluene, Reagent Grade

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25611

Recommended uses of the product and restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific, Inc
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Supplier Details:

Fisher Science Education
6771 Silver Crest Road, Nazareth, PA 18064
(724)517-1954

Emergency telephone number:

Fisher Science Education
Emergency Telephone No.: 800-535-5053

SECTION 2: Hazards identification

Classification of the substance or mixture:



Flammable

Flammable liquids, category 2



Irritant

Skin irritation, category 2

Specific target organ toxicity following single exposure, category 3



Health hazard

Reproductive toxicity, category 2

Specific target organ toxicity following repeated exposure, category 2

Aspiration hazard, category 2

Flam. Liq. 2.

Skin Irrit. 2.

Repr. 2.

STOT SE 3, Central nervous system.

STOT RE 2.

Asp. Tox. 1.

Aquatic Acute 2.

Signal word: Danger

Hazard statements:

Highly flammable liquid and vapour.

May be harmful if swallowed and enters airways.

Causes skin irritation.

May cause drowsiness or dizziness.

Suspected of damaging fertility or the unborn child.

May cause damage to organs through prolonged or repeated exposure.

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Toxic to aquatic life.

Precautionary statements:

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Obtain special instructions before use.

Wash skin thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

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

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/light/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe dust/fume/gas/mist/vapours/spray.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see supplemental first aid instructions on this label).

Do NOT induce vomiting.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash before reuse.

In case of fire: Use agents recommended in section 5 for extinction.

Store in a well ventilated place. Keep container tightly closed.

Store in a well ventilated place. Keep cool.

Store locked up.

Dispose of contents and container to an approved waste disposal plant.

Other Non-GHS Classification:

WHMIS



NFPA/HMIS

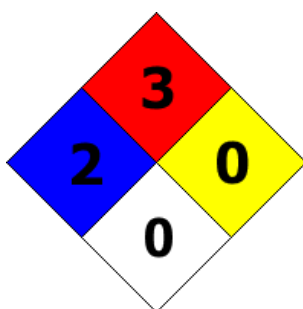
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NFPA SCALE (0-4)

Health	2
Flammability	3
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

SECTION 3: Composition/information on ingredients

Ingredients:

Percentages are by weight

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Loosen clothing and place exposed in a comfortable position. Seek immediate medical attention.

After skin contact:

IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

After eye contact:

Protect unexposed eye. Flush exposed eye gently using water for 15-20 minutes. Remove contact lenses while rinsing. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

After swallowing:

Rinse mouth with water. Never give anything by mouth to an unconscious person. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital.

Most important symptoms and effects, both acute and delayed:

Irritation. Shortness of breath. Headache. Nausea. Dizziness. The substance is irritating to the eyes and respiratory tract. The substance may cause effects on the central nervous system. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. Exposure at high levels could cause cardiac dysrhythmia and unconsciousness. The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the central nervous system. Exposure to the substance may increase noise-induced hearing loss. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

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Use foam, dry chemical, or carbon dioxide.

Unsuitable extinguishing agents:

Solid streams of water may spread fire.

Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors. Vapors may ignited and cause explosion if in confined space. Vapors can flow across ignition source and flashback.

Advice for firefighters:

Protective equipment:

Wear protective eyewear, gloves, and clothing. Refer to Section 8.

Additional information (precautions):

Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing. Cool closed containers exposed to fire with water spray. Approach fire from upwind to avoid hazardous vapors and toxic decomposition. If material on fire or involved in fire: Do not extinguish fire unless flow can be stopped or safely confined. Use water in flooding quantities as fog. Solid streams of water may spread fire. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Remove all sources of ignition.

Environmental precautions:

Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

Methods and material for containment and cleaning up:

Wear protective eyewear, gloves, and clothing. Refer to Section 8. Always obey local regulations. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Containerize for disposal. Refer to Section 13. Keep in suitable closed containers for disposal. Remove all sources of ignition. Have extinguishing agent available in case of fire. Use non-sparking equipment.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Refer to Section 13. Do not eat, drink, smoke, or use personal products when handling chemical substances. Use explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly sealed. Store away from incompatible materials. Store as flammable. Keep away from sources of ignition.

SECTION 8: Exposure controls/personal protection



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Control Parameters:	108-88-3 , Toluene, ACGIH TLV TWA 20 ppm. 108-88-3, Toluene, OSHA PEL TWA 200 ppm.
Appropriate Engineering controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. Use under a chemical fume hood. Use explosion-proof equipment.
Respiratory protection:	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment. Use under a chemical fume hood.
Protection of skin:	Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.
Eye protection:	Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses or goggles are appropriate eye protection.
General hygienic measures:	Perform routine housekeeping. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes, and clothing. Before reworking wash contaminated clothing.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	Explosion limit lower: Explosion limit upper:	7 %(V) 1.2 %(V)
Odor:	Sweet, pungent, benzene-like odor.	Vapor pressure at 20°C:	29 mbar
Odor threshold:	1.03 to 140 ug/cu m	Vapor density:	3.1
pH-value:	Not Determined	Relative density:	0.865 g/mL at 25 °C (77 °F)
Melting/Freezing point:	-95°C (-139°F)	Solubilities:	Insoluble in water. Molecular Weight: 92.14.
Boiling point/Boiling range:	110 - 111 °C (230 - 232 °F)	Partition coefficient (n-octanol/water):	log Kow 2.73
Flash point (closed cup):	4.0 °C (39.2 °F)	Auto/Self-ignition temperature:	535.0 °C (995.0 °F)
Evaporation rate:	2.4	Decomposition temperature:	Not Determined
Flammability (solid, gaseous):	Highly flammable	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not Determined
Density at 20°C:	Not Determined		

SECTION 10: Stability and reactivity

Reactivity:

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Nonreactive under normal conditions. Reacts violently with strong oxidants. This generates fire and explosion hazard.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None under normal processing. Vapours may form explosive mixture with air.

Conditions to avoid:

Incompatible materials. excess heat. Direct Sunlight.

Incompatible materials:

Oxidizing agents. Acids.

Hazardous decomposition products:

Carbon oxides.

SECTION 11: Toxicological information

Acute Toxicity:

Oral:

108-88-3 (Toluene) LD50 Rat: 636mg/kg

Dermal:

108-88-3 (Toluene) LD50 Rabbit: 12,124 mg/kg

Inhalation:

108-88-3 (Toluene) LC50 Rat: 12,500 - 28,800 mg/m³/4 h

Chronic Toxicity: No additional information.

Corrosion Irritation:

Dermal:

108-88-3 (Toluene) Rabbit: Skin Irritation - 24 h

Sensitization: No additional information.

Numerical Measures: No additional information.

Carcinogenicity:

IARC:: Group 3: Not classifiable as to its carcinogenicity to humans (Toluene)

Mutagenicity:

rat Liver DNA damage.

Reproductive Toxicity:

Suspected human reproductive toxicant. rat - Inhalation Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). rat - Oral Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

SECTION 12: Ecological information

Ecotoxicity:

Fish LC50 - Oncorhynchus mykiss (rainbow trout) - 7.63 mg/l - 96 h: 108-88-3 (Toluene)

Invertebrates EC50 - Daphnia magna (Water flea) - 6 mg/l - 48 h: 108-88-3 (Toluene)

Persistence and degradability:

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Readily biodegradable.

Bioaccumulative potential:

bioconcentration in aquatic organisms is low to moderate.

Mobility in soil:

toluene is expected to have high to moderate mobility in soil. 2.65 log Pow.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed together with household garbage. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

SECTION 14: Transport information

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA 1294

Limited Quantity Exception: None

Bulk:

RQ (if applicable): None

Proper shipping Name: Toluene.

Hazard Class: 3

Packing Group: II.

Marine Pollutant (if applicable): No additional information.

Comments: None

Non Bulk:

RQ (if applicable): None

Proper shipping Name: Toluene.

Hazard Class: 3

Packing Group: II.

Marine Pollutant (if applicable): No additional information.

Comments: None



SECTION 15: Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute, Chronic, Fire

SARA Section 313 (Specific toxic chemical listings):

108-88-3 Toluene.

RCRA (hazardous waste code):

108-88-3 Toluene - U220.

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TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

108-88-3 Toluene 1000 lb.

Proposition 65 (California):**Chemicals known to cause cancer:**

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

108-88-3 Toluene.

Canada**Canadian Domestic Substances List (DSL):**

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 1%):

108-88-3 Toluene.

SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases: None

Abbreviations and Acronyms: None

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