Safety Data Sheet
acc. to OSHA HCS

Printing date 05/25/2021 Reviewed on 05/25/2021

1 Identification

· **Product identifier**

· **Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700**

· **Article number:** BP070
· **CAS Number:**
108-88-3
· **EC number:**
203-625-9
· **Index number:**
601-021-00-3

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Aqua Solutions, Inc.
6913 Highway 225
DEER PARK, TX 77536
USA
800-256-2586

· **Information department:**
Technical Coordinator
Sherman Nelson shermann@aquasolutions.org
· **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666

*
2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.

· **Label elements**
· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/25/2021 *Reviewed on 05/25/2021*

Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700

(Contd. of page 1)

· ***Hazard pictograms***



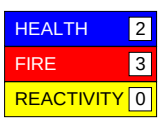
GHS02 GHS07 GHS08

· ***Signal word*** *Danger*
· ***Hazard statements***
Highly flammable liquid and vapor.
Causes skin irritation.
Suspected of damaging fertility or the unborn child.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.
· ***Precautionary statements***
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
Call a poison center/doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· ***Classification system:***
· ***NFPA ratings (scale 0 - 4)***



Health = 1
Fire = 3
Reactivity = 0

· ***HMIS-ratings (scale 0 - 4)***



Health = 2
Fire = 3
Reactivity = 0

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700

(Contd. of page 2)

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
108-88-3 Toluene
· **Identification number(s)**
· **EC number:** 203-625-9
· **Index number:** 601-021-00-3

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:** If symptoms persist consult doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700

(Contd. of page 3)

See Section 13 for disposal information.

· ***Protective Action Criteria for Chemicals***
· ***PAC-1:*** *67 ppm*
· ***PAC-2:*** *560 ppm*
· ***PAC-3:*** *3700* ppm*

7 Handling and storage

· ***Handling:***
· ***Precautions for safe handling*** *No special precautions are necessary if used correctly.*
· ***Information about protection against explosions and fires:***
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:*** *Store in a cool location.*
· ***Information about storage in one common storage facility:*** *Not required.*
· ***Further information about storage conditions:***
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· ***Specific end use(s)*** *No further relevant information available.*

*
8 Exposure controls/personal protection

· ***Additional information about design of technical systems:*** *No further data; see item 7.*

· ***Control parameters***

· ***Components with limit values that require monitoring at the workplace:***	
CAS: 108-88-3 Toluene	
PEL	*Long-term value: 200 ppm* *Ceiling limit value: 300; 500* ppm* **10-min peak per 8-hr shift*
REL	*Short-term value: 560 mg/m³, 150 ppm* *Long-term value: 375 mg/m³, 100 ppm*
TLV	*Long-term value: 20 ppm* *BEI, NIC-OTO*

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700

(Contd. of page 4)

· **Ingredients with biological limit values:**

CAS: 108-88-3 Toluene

BEI	0.02 mg/L LD50 Intraperitoneal: blood Time: prior to last shift of workweek LD50: Toluene 0.03 mg/L LD50 Intraperitoneal: urine Time: end of shift LD50: Toluene 0.3 mg/g creatinine LD50 Intraperitoneal: urine Time: end of shift LD50: o-Cresol with hydrolysis (background)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**



Tightly sealed goggles

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/25/2021 Reviewed on 05/25/2021

Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700

(Contd. of page 5)

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Colorless
· **Odor:**	Aromatic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	-95 °C (-139 °F)
Boiling point/Boiling range:	110-111 °C (230-231.8 °F)
· **Flash point:**	4 °C (39.2 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	535 °C (995 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Not determined.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	1.2 Vol %
Upper:	7 Vol %
· **Vapor pressure at 20 °C (68 °F):**	29 hPa (21.8 mm Hg)
· **Density at 20 °C (68 °F):**	0.86683 g/cm³ (7.2337 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water at 15 °C (59 °F):	0.5 g/l
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic at 20 °C (68 °F):	0.6 mPas
Kinematic:	Not determined.
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/25/2021 Reviewed on 05/25/2021

Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700

(Contd. of page 6)

· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**

· **Carcinogenic categories**
· **IARC (International Agency for Research on Cancer)** 3
· **NTP (National Toxicology Program)** Substance is not listed.
· **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Assessment by list): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**
· **DOT, IMDG, IATA** UN1294

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700

(Contd. of page 7)

· **UN proper shipping name**
· **DOT** Toluene
· **IMDG, IATA** TOLUENE

· **Transport hazard class(es)**

· **DOT**



· **Class** 3 Flammable liquids
· **Label** 3

· **IMDG, IATA**



· **Class** 3 Flammable liquids
· **Label** 3

· **Packing group**
· **DOT, IMDG, IATA** II

· **Environmental hazards:**
· **Marine pollutant:** No

· **Special precautions for user** Warning: Flammable liquids
· **Hazard identification number (Kemler code):** 33
· **EMS Number:** F-E,S-D
· **Stowage Category** B

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **DOT**
· **Quantity limitations** On passenger aircraft/rail: 5 L
On cargo aircraft only: 60 L
· **Hazardous substance:** 1000 lbs, 454 kg

· **IMDG**
· **Limited quantities (LQ)** 1L
· **Excepted quantities (EQ)** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1294 TOLUENE, 3, II

*
15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/25/2021 *Reviewed on 05/25/2021*

Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700

(Contd. of page 8)

· ***Sara***
· ***Section 355 (extremely hazardous substances):*** *Substance is not listed.*
· ***Section 313 (Specific toxic chemical listings):*** *Substance is listed.*
· ***TSCA (Toxic Substances Control Act):*** *ACTIVE*
· ***Hazardous Air Pollutants*** *Substance is listed.*
· ***Proposition 65***
· ***Chemicals known to cause cancer:*** *Substance is not listed.*
· ***Chemicals known to cause reproductive toxicity for females:*** *Substance is not listed.*
· ***Chemicals known to cause reproductive toxicity for males:*** *Substance is not listed.*
· ***Chemicals known to cause developmental toxicity:*** *Substance is listed.*

· ***Carcinogenic categories***
· ***EPA (Environmental Protection Agency)*** *II*
· ***TLV (Threshold Limit Value)*** *A4*
· ***NIOSH-Ca (National Institute for Occupational Safety and Health)*** *Substance is not listed.*
· ***GHS label elements*** *The substance is classified and labeled according to the Globally Harmonized System (GHS).*
· ***Hazard pictograms***



GHS02 GHS07 GHS08

· ***Signal word*** *Danger*
· ***Hazard statements***
Highly flammable liquid and vapor.
Causes skin irritation.
Suspected of damaging fertility or the unborn child.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.
· ***Precautionary statements***
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
Call a poison center/doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/25/2021 *Reviewed on 05/25/2021*

Trade name: Toluene, PRF Conforms to ASTM D2699 and D2700

(Contd. of page 9)

Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** *Environment protection department.*
· **Contact:**
· **Date of preparation / last revision**
Revision 0.1, Reviewed SDS. STN
05/25/2021 / 1.0
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1
· **** Data compared to the previous version altered.***