

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/09/2018

Reviewed on 01/09/2018

## 1 Identification

- **Product identifier**
- **Trade name:** Nitrogen Standard  
1.0 ug/g (ppm) in Toluene
- **Article number:** TES003
- **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 sherman@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 product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

Toluene

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- **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.*

*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.*

*Specific treatment (see on this label).*

*Do NOT induce vomiting.*

*If skin irritation occurs: Get medical advice/attention.*

*Take off contaminated clothing and wash it before reuse.*

*In case of fire: Use for extinction: CO<sub>2</sub>, 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 = 1

Fire = 3

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

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### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 108-88-3	Toluene	99.999%
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- **Table of Nonhazardous Ingredients**

CAS: 86-74-8	Carbazole, 96%	0.0012%
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### 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:**  
CO<sub>2</sub>, 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.  
See Section 13 for disposal information.

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### · Protective Action Criteria for Chemicals

· PAC-1:		
CAS: 108-88-3	Toluene	67 ppm
CAS: 86-74-8	Carbazole, 96%	0.66 mg/m <sup>3</sup>
· PAC-2:		
CAS: 108-88-3	Toluene	560 ppm
CAS: 86-74-8	Carbazole, 96%	7.2 mg/m <sup>3</sup>
· PAC-3:		
CAS: 108-88-3	Toluene	3700* ppm
CAS: 86-74-8	Carbazole, 96%	43 mg/m <sup>3</sup>

## 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:	
<b>CAS: 108-88-3 Toluene</b>	
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/m <sup>3</sup> , 150 ppm Long-term value: 375 mg/m <sup>3</sup> , 100 ppm
TLV	Long-term value: 75 mg/m <sup>3</sup> , 20 ppm BEI

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**· 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**· 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

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· **Body protection:** Protective work clothing

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	Light Tan
<b>Odor:</b>	Characteristic
<b>Odor threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

<b>Melting point/Melting range:</b>	-95 °C (-139 °F)
<b>Boiling point/Boiling range:</b>	110 °C (230 °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:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

<b>Lower:</b>	1.2 Vol %
<b>Upper:</b>	7 Vol %

· **Vapor pressure at 20 °C (68 °F):** 29 hPa (21.8 mm Hg)

· **Density at 20 °C (68 °F):** 0.86711 g/cm<sup>3</sup> (7.23603 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:**

<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.

· **Solvent content:**

<b>Organic solvents:</b>	100.0 %
<b>VOC content:</b>	100.00 %
	867.1 g/l / 7.24 lb/gal

**Solids content:** 0.1 %

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· **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.*
- **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:**

- **LD/LC50 values that are relevant for classification:**

**ATE (Acute Toxicity Estimate)**

Oral	LD50	5,000 mg/kg (rat)
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- **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:**  
*The product shows the following dangers according to internally approved calculation methods for preparations:*  
*Irritant*

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

CAS: 108-88-3	Toluene	3
CAS: 86-74-8	Carbazole, 96%	2B

- **NTP (National Toxicology Program)**

*None of the ingredients is listed.*

- **OSHA-Ca (Occupational Safety & Health Administration)**

*None of the ingredients is 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 (Self-assessment): hazardous for water*

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*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

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>  | <p style="margin-left: 20px;">UN1993</p>  |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>IMDG, IATA</b></li> </ul>                         | <p style="margin-left: 20px;">Flammable liquids, n.o.s. (Toluene)<br/>           FLAMMABLE LIQUID, N.O.S. (TOLUENE)</p>   |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>   | <div style="text-align: center; margin-bottom: 10px;">  </div> <p style="margin-left: 20px;">3 Flammable liquids</p> |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>  | <p style="margin-left: 20px;">3<br/>3</p>   |
| <ul style="list-style-type: none"> <li>· <b>IMDG, IATA</b></li> </ul>   | <div style="text-align: center; margin-bottom: 10px;">  </div> <p style="margin-left: 20px;">3 Flammable liquids</p> |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>  | <p style="margin-left: 20px;">3<br/>3</p>   |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>  | <p style="margin-left: 20px;">II</p>  |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>   | <p style="margin-left: 20px;">No</p>  |
| <ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Danger code (Kemler):</b></li> <li>· <b>EMS Number:</b></li> </ul> | <p style="margin-left: 20px;">Warning: Flammable liquids<br/>           33<br/>           F-E,S-E</p>   |

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· <b>Stowage Category</b>	B
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>DOT</b>	
· <b>Quantity limitations</b>	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	1L
· <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN 1993 FLAMMABLE LIQUIDS, N.O.S. (TOLUENE), 3, II

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

CAS: 108-88-3 | Toluene

· **TSCA (Toxic Substances Control Act):**

Toluene

Carbazole, 96%

· **TSCA new (21st Century Act) (Substances not listed)**

· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 86-74-8 | Carbazole, 96%

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

CAS: 108-88-3 | Toluene

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

CAS: 108-88-3 | Toluene

II

· **TLV (Threshold Limit Value established by ACGIH)**

CAS: 108-88-3 | Toluene

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

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- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



- **Signal word** *Danger*

- **Hazard-determining components of labeling:**

*Toluene*

- **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.*

*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.*

*Specific treatment (see on this label).*

*Do NOT induce vomiting.*

*If skin irritation occurs: Get medical advice/attention.*

*Take off contaminated clothing and wash it before reuse.*

*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.*

- **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.

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· **Contact:**

· **Date of preparation / last revision**

01-09-2018: review SDS for accuracy. STN

Creation date for SDS 02-16-2015. STN

01/09/2018 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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