Printing date 12/10/2021 Reviewed on 12/10/2021

1 Identification

· Product identifier

· Trade name: Nitrogen Standard
500 ug/ml in Toluene

· Article number: AM379

· 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

Carc. 2 H351 Suspected of causing cancer.

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.

 $Asp.\ Tox.\ 1\quad H304\ May\ be\ fatal\ if\ swallowed\ and\ enters\ airways.$



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye 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

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

(Contd. of page 1)

· Signal word Danger

· Hazard-determining components of labeling:

Toluene

Acetone

· Hazard statements

Highly flammable liquid and vapor.

Causes skin irritation.

Causes serious eve irritation.

Suspected of causing cancer.

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 in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use CO2, powder or water spray 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/container in accordance with local/regional/national/international regulations.

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 2 Fire = 3Reactivity = 0

(Contd. on page 3)

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

(Contd. of page 2)

· HMIS-ratings (scale 0 - 4)



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

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	85.462%
CAS: 67-64-1	Acetone	13.834%
CAS: 86-74-8	Carbazole, 96%	0.704%

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

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. If symptoms persist, consult a doctor.

- · 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

During heating or in case of fire poisonous gases are produced.

- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

US

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

(Contd. of page 3)

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

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.

· Protective Action Criteria for Chemicals

PAC-1: CAS: 108-88-3 Toluene CAS: 67-64-1 Acetone	67 ppm 200 ppm
CAS: 67-64-1 Acetone	200 ppm
CAS: 86-74-8 Carbazole, 96%	$0.66 mg/m^3$
· PAC-2:	
CAS: 108-88-3 Toluene	560 ppm
CAS: 67-64-1 Acetone	3200* ppm
CAS: 86-74-8 Carbazole, 96%	$7.2 mg/m^3$
· PAC-3:	
CAS: 108-88-3 Toluene	3700* ppm
CAS: 67-64-1 Acetone	5700* ppm
CAS: 86-74-8 Carbazole, 96%	43 mg/m³

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · 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.

(Contd. on page 5)

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

(Contd. of page 4)

 \cdot 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:

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

	· 108-88-3 Toluene	
	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, OTO, A4	
CAS	67-64-1 Acetone	
PEL	Long-term value: 2400 mg/m³, 1000 ppm	
REL	Long-term value: 590 mg/m³, 250 ppm	
TLV	Short-term value: 500 ppm Long-term value: 250 ppm A4, BEI	

· 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)

CAS: 67-64-1 Acetone

BEI 25 mg/L

LD50 Intraperitoneal: urine

Time: end of shift

LD50: Acetone (nonspecific)

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

(Contd. on page 6)

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

(Contd. of page 5)

- · 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 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

· **Body protection:** Protective work clothing

9 Physical and chemical properties

- · Information on basic physical and chemical properties
- · General Information
- · Appearance:

Form: Liquid

Color: Clear brown to beige

Not determined.

· Odor: Toluene · Odor threshold:

· pH-value: Not determined.

· Change in condition

Melting point/Melting range: Undetermined. Boiling point/Boiling range: 55 °C (131 °F)

-17 °C (1.4 °F) · Flash point:

(Contd. on page 7)

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

	(Contd. of page			
· Flammability (solid, gaseous):	Not applicable.			
· Ignition temperature:	465 °C (869 °F)			
Decomposition temperature:	Not determined.			
· Auto igniting:	Product is not selfigniting.			
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapo mixtures are possible.			
· Explosion limits:				
Lower:	1.2 Vol %			
Upper:	13 Vol %			
· Vapor pressure at 20 °C (68 °F):	ssure at 20 °C (68 °F): 233 hPa (174.8 mm Hg)			
Density at 20 °C (68 °F):	at 20 °C (68 °F): 0.85658 g/cm³ (7.14816 lbs/gal)			
Relative density	Not determined.			
· Vapor density	Not determined.			
· Evaporation rate	Not determined.			
· Solubility in / Miscibility with				
Water:	Not miscible or difficult to mix.			
Partition coefficient (n-octanol/wate	er): Not determined.			
· Viscosity:				
Dynamic:	Not determined.			
Kinematic:	Not determined.			
· Solvent content:				
Organic solvents:	99.3 %			
VOC content:	85.46 %			
	732.1 g/l / 6.11 lb/gal			
Solids content:	nt: 0.7 %			
· 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:
- · Primary irritant effect:
- · on the skin: Irritant to skin and mucous membranes.

(Contd. on page 8)

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

(Contd. of page 7)

- · on the eye: 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%	2 <i>B</i>
· 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

 $Do \ not \ allow \ product \ to \ reach \ ground \ water, \ water \ course \ or \ sewage \ system.$

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.

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- · UN-Number
- · DOT, IMDG, IATA UN1993
- · UN proper shipping name
- · DOT Flammable liquids, n.o.s. (Toluene, Acetone)

(Contd. on page 9)

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

IMDG, IATA	(Contd. of page FLAMMABLE LIQUID, N.O.S. (Toluene, Acetone)
Transport hazard class(es)	1 2 11/2/11 2 2 2 g o 12 , 111 o 131 (1 o une 10, 1 rectione)
DOT	
- DO1	
R AMMERE LOUIS	
· Class	3 Flammable liquids
· Label	3
· IMDG, IATA	
3	
· 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)	
EMS Number:	F-E, <u>S-E</u> B
Stowage Category	D
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
IMDC	on cargo arreign only. 00 L
· 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 1993 FLAMMABLE LIQUID, N.O.S. (TOLUENI ACETONE), 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 10)

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

(Contd. of page 9) · 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 **ACTIVE** Acetone **ACTIVE** Carbazole, 96% **ACTIVE** · Hazardous Air Pollutants CAS: 108-88-3 Toluene · 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 CAS: 67-64-1 Acetone Ι · TLV (Threshold Limit Value) CAS: 108-88-3 Toluene A4CAS: 67-64-1 Acetone A4· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

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







GHS02 G

- · Signal word Danger
- · Hazard-determining components of labeling:

Toluene

Acetone

· Hazard statements

Highly flammable liquid and vapor.

Causes skin irritation.

Causes serious eye irritation.

(Contd. on page 11)

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

(Contd. of page 10)

Suspected of causing cancer.

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 in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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.

 ${\it If skin irritation occurs: Get medical advice/attention.}$

If eye irritation persists: Get medical advice/attention.

In case of fire: Use CO2, powder or water spray 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/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 1.0, 11-16-2021: Updated product information. STN

Revision 2.0, 01-12-2020: Updated sections 1, 2 and 15 to meet Fanns new requirements 12/10/2021 / -

· 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

ELINCS: European List of Notified Chemical Substances

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

(Contd. on page 12)

Printing date 12/10/2021 Reviewed on 12/10/2021

Trade name: Nitrogen Standard 500 ug/ml in Toluene

(Contd. of page 11)

NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU) 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

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Carc. 2: Carcinogenicity – 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

US