

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/05/2018

Reviewed on 01/05/2018

## 1 Identification

- **Product identifier**
- **Trade name:** ETBE Gravimetric Standard
- **Article number:** SPX374
- **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.



GHS07

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

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
tert-Butyl Ethyl Ether
- **Hazard statements**  
Highly flammable liquid and vapor.  
May cause drowsiness or dizziness.
- **Precautionary statements**  
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.

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Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area.

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

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.

Call a poison center/doctor if you feel unwell.

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 = 0

Fire = 3

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 3

Fire = 3

Reactivity = 0

· **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: 637-92-3	tert-Butyl Ethyl Ether	96.536%
CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	1.09%
CAS: 75-65-0	tert-Butyl Alcohol	1.01%

· **Table of Nonhazardous Ingredients**

CAS: 1634-04-4	Methyl Tert-Butyl Ether (MTBE)	0.505%
CAS: 107-39-1	2,4,4-trimethylpent-1-ene	0.253%
CAS: 67-64-1	Acetone	0.202%
CAS: 78-93-3	Methyl Ethyl Ketone	0.101%
CAS: 107-40-4	2,4,4-trimethylpent-2-ene	0.101%
CAS: 2679-87-0	sec-Butyl Ethyl Ether	0.101%
CAS: 67-56-1	Methanol (Methyl Alcohol)	0.101%

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## 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **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).  
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: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	1,800 ppm
CAS: 75-65-0	tert-Butyl Alcohol	150 ppm
CAS: 1634-04-4	Methyl Tert-Butyl Ether (MTBE)	50 ppm
CAS: 107-39-1	2,4,4-trimethylpent-1-ene	230 ppm
CAS: 67-64-1	Acetone	200 ppm
CAS: 78-93-3	Methyl Ethyl Ketone	200 ppm
CAS: 67-56-1	Methanol (Methyl Alcohol)	530 ppm

### · PAC-2:

CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	3300* ppm
CAS: 75-65-0	tert-Butyl Alcohol	1,300 ppm

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CAS: 1634-04-4	Methyl Tert-Butyl Ether (MTBE)	570 ppm
CAS: 107-39-1	2,4,4-trimethylpent-1-ene	2500* ppm
CAS: 67-64-1	Acetone	3200* ppm
CAS: 78-93-3	Methyl Ethyl Ketone	2700* ppm
CAS: 67-56-1	Methanol (Methyl Alcohol)	2,100 ppm

**· PAC-3:**

CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	15000* ppm
CAS: 75-65-0	tert-Butyl Alcohol	8000* ppm
CAS: 1634-04-4	Methyl Tert-Butyl Ether (MTBE)	5300* ppm
CAS: 107-39-1	2,4,4-trimethylpent-1-ene	15000*** ppm
CAS: 67-64-1	Acetone	5700* ppm
CAS: 78-93-3	Methyl Ethyl Ketone	4000* ppm
CAS: 67-56-1	Methanol (Methyl Alcohol)	7200* 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:**

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.

**CAS: 64-17-5 Ethyl Alcohol, Absolute 200 Proof**

PEL Long-term value: 1900 mg/m<sup>3</sup>, 1000 ppm

REL Long-term value: 1900 mg/m<sup>3</sup>, 1000 ppm

TLV Short-term value: 1880 mg/m<sup>3</sup>, 1000 ppm

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**CAS: 75-65-0 tert-Butyl Alcohol**

**PEL** Long-term value: 300 mg/m<sup>3</sup>, 100 ppm

**REL** Short-term value: 450 mg/m<sup>3</sup>, 150 ppm  
Long-term value: 300 mg/m<sup>3</sup>, 100 ppm

**TLV** Long-term value: 303 mg/m<sup>3</sup>, 100 ppm

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

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.

· **Breathing equipment:** Not required.

· **Protection of hands:**

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:** Not determined.

· **Odor:** Organic

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

**Melting point/Melting range:** Undetermined.

**Boiling point/Boiling range:** 70 °C (158 °F)

· **Flash point:** -19 °C (-2.2 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:**

**Decomposition temperature:** Not determined.

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· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 25 °C (77 °F):</b>	17.3 hPa (13 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	0.74132 g/cm <sup>3</sup> (6.18632 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	2.0 %
<b>VOC content:</b>	1.80 %
	13.3 g/l / 0.11 lb/gl
<b>Solids content:</b>	1.1 %
· <b>Other information</b>	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	267,541-307,540 mg/kg (rat)
Dermal	LD50	197,941 mg/kg (rabbit)
Inhalative	LC50/4 h	1,079 mg/l

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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

- **Carcinogenic categories**

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

CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	1
CAS: 1634-04-4	Methyl Tert-Butyl Ether (MTBE)	3

- **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 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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** UN1993
- **UN proper shipping name**
- **DOT** Flammable liquids, n.o.s. (Ethyl butyl ether)

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· <b>IMDG, IATA</b>	<b>FLAMMABLE LIQUID, N.O.S. (ETHYL BUTYL ETHER)</b>
· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3
· <b>IMDG, IATA</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3
· <b>Packing group</b>	
· <b>DOT, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Warning: Flammable liquids
· <b>Danger code (Kemler):</b>	33
· <b>EMS Number:</b>	F-E, <u>S-E</u>
· <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. (ETHYL BUTYL ETHER), 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.

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

CAS: 75-65-0	<i>tert-Butyl Alcohol</i>
CAS: 1634-04-4	<i>Methyl Tert-Butyl Ether (MTBE)</i>
CAS: 78-93-3	<i>Methyl Ethyl Ketone</i>
CAS: 67-56-1	<i>Methanol (Methyl Alcohol)</i>

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

<i>tert-Butyl Ethyl Ether</i>
<i>Ethyl Alcohol, Absolute 200 Proof</i>
<i>tert-Butyl Alcohol</i>
<i>Methyl Tert-Butyl Ether (MTBE)</i>
<i>2,4,4-trimethylpent-1-ene</i>
<i>Acetone</i>
<i>Methyl Ethyl Ketone</i>
<i>2,4,4-trimethylpent-2-ene</i>
<i>sec-Butyl Ethyl Ether</i>
<i>Methanol (Methyl Alcohol)</i>

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

· **Proposition 65**

· **Chemicals known to cause cancer:**

*None of the ingredients is listed.*

· **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: 64-17-5	<i>Ethyl Alcohol, Absolute 200 Proof</i>
CAS: 67-56-1	<i>Methanol (Methyl Alcohol)</i>

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

CAS: 67-64-1	<i>Acetone</i>	<i>I</i>
CAS: 78-93-3	<i>Methyl Ethyl Ketone</i>	<i>I</i>

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

CAS: 64-17-5	<i>Ethyl Alcohol, Absolute 200 Proof</i>	<i>A3</i>
CAS: 75-65-0	<i>tert-Butyl Alcohol</i>	<i>A4</i>
CAS: 1634-04-4	<i>Methyl Tert-Butyl Ether (MTBE)</i>	<i>A3</i>
CAS: 67-64-1	<i>Acetone</i>	<i>A4</i>

· **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).

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· **Hazard pictograms**



GHS02 GHS07

· **Signal word** *Danger*

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

*tert-Butyl Ethyl Ether*

· **Hazard statements**

*Highly flammable liquid and vapor.*

*May cause drowsiness or dizziness.*

· **Precautionary statements**

*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.*

*Avoid breathing dust/fume/gas/mist/vapors/spray*

*Use only outdoors or in a well-ventilated area.*

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

*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.*

*Call a poison center/doctor if you feel unwell.*

*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.*

· **Contact:**

· **Date of preparation / last revision**

*01-05-2018: review SDS for accuracy. STN*

*Creation date for SDS 07-22-2015. STN*

*01/05/2018 / -*

· **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)*

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*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**Flam. Liq. 2: Flammable liquids – Category 2**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

US