Printing date 06/14/2018 Reviewed on 11/22/2017

1 Identification

· Product identifier

· Trade name: TEAB 10% w/v

in Solvent Mix

· Article number: HUN009

· 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

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.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



Acute Tox. 4 H302 Harmful if swallowed.

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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

GHS05

GHS06 GHS07

GHS0

· Signal word Danger

· Hazard-determining components of labeling:

Chloroform

Acetic Acid

Acetone

Tetraethylammonium Bromide, 98%

· Hazard statements

Highly flammable liquid and vapor.

Harmful if swallowed.

Toxic if inhaled.

Causes severe skin burns and eye damage.

Suspected of causing cancer.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

Causes damage to organs through prolonged or repeated exposure.

· 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 dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Call a poison center/doctor if you feel unwell.

If swallowed: Rinse mouth. 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.

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Get medical advice/attention if you feel unwell.

Wash contaminated clothing 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.

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(Contd. of page 2)

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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



Health = 3Fire = 3Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 3Fire = 3

- · 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.

Г	Dangarous ao	manage to the state of the stat	
L	· Dangerous components:		
	CAS: 64-19-7	Acetic Acid	36.631%
ſ	CAS: 67-64-1	Acetone	27.482%
Ī	CAS: 67-66-3	Chloroform	25.741%
Ī	CAS: 71-91-0	Tetraethylammonium Bromide, 98%	10.146%

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.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

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. Then consult a doctor.
- · After swallowing:

Immediately call a doctor.

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.

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· 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.

- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

· Environmental precautions:

Dilute with plenty of water.

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).

Use neutralizing agent.

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: 64-19-7 A	Acetic Acid	5 ppm		
CAS: 67-64-1 A	cetone	200 ppm		
CAS: 67-66-3 (Chloroform	2 ppm		
CAS: 71-91-0 T	etraethylammonium Bromide, 98%	1.1 mg/m ³		
· PAC-2:				
CAS: 64-19-7 A	cetic Acid	35 ppm		
CAS: 67-64-1 A	cetone	3200* ppm		
CAS: 67-66-3 (Chloroform	64 ppm		
CAS: 71-91-0 T	etraethylammonium Bromide, 98%	12 mg/m³		
· PAC-3:				
CAS: 64-19-7 A	cetic Acid	250 ppm		
CAS: 67-64-1 A	cetone	5700* ppm		
CAS: 67-66-3 (Chloroform	3,200 ppm		
CAS: 71-91-0 T	etraethylammonium Bromide, 98%	43 mg/m ³		

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7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

· 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.

· 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	64-19-7 Acetic Acid			
PEL	Long-term value: 25 mg/m³, 10 ppm			
REL	Short-term value: 37 mg/m³, 15 ppm Long-term value: 25 mg/m³, 10 ppm			
TLV Short-term value: 37 mg/m³, 15 ppm Long-term value: 25 mg/m³, 10 ppm				
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: 1187 mg/m³, 500 ppm Long-term value: 594 mg/m³, 250 ppm BEI			
CAS	: 67-66-3 Chloroform			
PEL	Ceiling limit value: 240 mg/m³, 50 ppm			
REL	Short-term value: 9.78* mg/m³, 2* ppm *60-min; See Pocket Guide App. A			
TLV	Long-term value: 49 mg/m³, 10 ppm			
	(Contd on page 6)			

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· Ingredients with biological limit values:

CAS: 67-64-1 Acetone

BEI 50 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.
- · 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.

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

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	(Contd. of page
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	55 °C (131 °F)
· Flash point:	-17 °C (1.4 °F)
· 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/vap
5 ,	mixtures are possible.
· Explosion limits:	
Lower:	2.6 Vol %
Upper:	17 Vol %
· Vapor pressure at 20 °C (68 °F):	233 hPa (174.8 mm Hg)
· Density at 20 °C (68 °F):	0.98558 g/cm³ (8.22467 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water:	Fully miscible.
· Partition coefficient (n-octanol/wate	e r): Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	64.1 %
VOC content:	36.63 %
	361.0 g/l / 3.01 lb/gl
Solids content:	10.1 %
· 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.

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in Solvent Mix

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· 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 (Acu	te Toxicit <u>;</u>	y Estimate)		
Oral	LD50	1,479 mg/kg		
Dermal	LD50	2,894 mg/kg (rabbit)		

CAS: 64-19-7 Acetic Acid					
Dermal	LD50	1,100 mg/kg (ATE)			

CAS: 67-66-3 Chloroform

Oral	LD50	500 mg/kg (ATE
Inhalative	LC50/4h	3 mg/l (ATE)

- · Primary irritant effect:
- · on the skin: Caustic effect on skin and mucous membranes.
- · on the eye:

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Toxic

Harmful

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)	
CAS: 67-66-3 Chloroform	2B
NUMB (A) (* 100 * 1 D)	

· NTP (National Toxicology Program)

CAS: 67-66-3 Chloroform

· 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.

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Trade name: TEAB 10% w/v in Solvent Mix

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- · Additional ecological information:
- · General notes:

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even extremely 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.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

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						ıation
					,	

· UN-Number	
-------------	--

· DOT, IMDG, IATA

UN3286

· UN proper shipping name

 $\cdot DOT$

Flammable liquid, toxic, corrosive, n.o.s. (Acetone, Acetic acid,

glacial, Chloroform)

· IMDG, IATA

FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (ACETONE, ACETIC ACID, GLACIAL, CHLOROFORM)

- · Transport hazard class(es)
- $\cdot DOT$







· Class · Label 3 Flammable liquids

3, 8, 6.1

· IMDG







· Class

3 Flammable liquids

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	(Contd. of page
Label	3/8/6.1
IATA	
Class	3 Flammable liquids
Label	3 (8, 6.1)
Packing group	
DOT, IMDG, IATA	II
Environmental hazards:	
Marine pollutant:	No
Special precautions for user	Warning: Flammable liquids
Danger code (Kemler):	338
EMS Number:	F-E,S-C
Segregation groups	Acids
Stowage Category	B
Stowage Code	SW2 Clear of living quarters.
Segregation Code	SG5 Segregation as for class 3
	SG8 Stow "away from" class 4.1
Transport in bulk according to Annex	
MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT	
Quantity limitations	On passenger aircraft/rail: 1 L
	On cargo aircraft only: 5 L
IMDG	
Limited quantities (LQ)	IL
Excepted quantities (\widetilde{EQ})	Code: E2
• • • • • • • • • • • • • • • • • • • •	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
UN "Model Regulation":	UN 3286 FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.
•	(ACETONE, ACETIC ACID, GLACIAL, CHLOROFORM),
	(MCLIONE, MCLIC MCID, GLACIME, CHLOROI ORM),

15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Sara
- · Section 355 (extremely hazardous substances):

CAS: 67-66-3 Chloroform

· Section 313 (Specific toxic chemical listings):

CAS: 67-66-3 Chloroform

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· TSCA (Toxic Substances Control Act):

Acetic Acid

Acetone

Chloroform

Tetraethylammonium Bromide, 98%

· Proposition 65

· Chemicals known to cause cancer:

CAS: 67-66-3 Chloroform

· 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: 67-66-3 Chloroform

· Carcinogenic categories

· EPA (Environmental Protection Agency)		
CAS: 67-64-1	Acetone	I
CAS: 67-66-3	Chloroform	B2, L, NL

· TLV (Threshold Limit Value established by ACGIH)

CAS: 67-64-1 Acetone	A4
CAS: 67-66-3 Chloroform	A3

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

CAS: 67-66-3 Chloroform

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











GHS02

GHS05

GHS06

GHS07

· Signal word Danger

· Hazard-determining components of labeling:

Chloroform

Acetic Acid

Acetone

Tetraethylammonium Bromide, 98%

· Hazard statements

Highly flammable liquid and vapor.

Harmful if swallowed.

Toxic if inhaled.

Causes severe skin burns and eye damage.

Suspected of causing cancer.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

Causes damage to organs through prolonged or repeated exposure.

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Trade name: TEAB 10% w/v in Solvent Mix

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· 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 dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Call a poison center/doctor if you feel unwell.

If swallowed: Rinse mouth. 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.

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Get medical advice/attention if you feel unwell.

Wash contaminated clothing 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.
- · Contact:
- · Date of preparation / last revision

Revision 1.0, 3/28/2018 Revised DOT to UN1993 from UN1294. DL

Revision 0.1, Reviewed SDS. STN

06/14/2018 / -

· 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

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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

BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3

Skin Corr. 1B: Skin corrosion/irritation – Category 1B Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Carc. 2: Carcinogenicity – Category 2 Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

US