Printing date 10/26/2022 Reviewed on 10/26/2022

1 Identification

· Product identifier

· Trade name: Hydrogen Sulfide Solvent

· Article number: STA032

· 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

Flammable Liquids 2 H225 Highly flammable liquid and vapor.



GHS03 Flame over circle

Oxidizing Liquids 1 H271 May cause fire or explosion; strong oxidizer.



GHS05 Corrosion

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

Eye Damage 1 H318 Causes serious eye damage.

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







GHS02 GH

GHS03

GHS05

- · Signal word Danger
- · Hazard-determining components of labeling:
- 2-Aminoethanol (Monoethanolamine), Reagent Grade
- · Hazard statements

 ${\it Highly flammable\ liquid\ and\ vapor.}$

May cause fire or explosion; strong oxidizer.

(Contd. on page 2)

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(Contd. of page 1)

Causes severe skin burns and eye damage.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep/Store away from clothing and other combustible materials

Take any precaution to avoid mixing with combustibles.

Keep container tightly closed.

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.

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

Wear fire/flame resistant/retardant clothing.

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 on clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

Specific treatment (see on this label).

Wash contaminated clothing before reuse.

In case of fire: Use CO2, powder or water spray to extinguish.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

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 = 3Fire = 3

Reactivity = 0

The substance possesses oxidizing properties.

· 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.

(Contd. on page 3)

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		(Contd. of page 2)
· Dangerous comp	ponents:	
CAS: 141-43-5	2-Aminoethanol (Monoethanolamine), Reagent Grade	34.7%
CAS: 6484-52-2	Ammonium Nitrate	22.7%
CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	11.97%
CAS: 67-56-1	Methanol	0.665%
•	· Table of Nonhazardous Ingredients	
CAS: 7732-18-5	Water	29.3%
CAS: 67-63-0	Isopropanol	0.665%

4 First-aid measures

- · Description of first aid measures
- · General information: Immediately remove any clothing soiled by the product.
- · 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. Then consult a doctor.
- · After swallowing: 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.
- · 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

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

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

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

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.

(Contd. on page 4)

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Protective Action	n Criteria for Chemicals	(Contd. of page
PAC-1:		
CAS: 141-43-5	2-Aminoethanol (Monoethanolamine), Reagent Grade	6 ррт
CAS: 6484-52-2	Ammonium Nitrate	6.7 mg/m ³
CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	1,800 ppn
CAS: 67-56-1	Methanol	530 ppm
CAS: 67-63-0	Isopropanol	400 ppm
PAC-2:		•
CAS: 141-43-5	2-Aminoethanol (Monoethanolamine), Reagent Grade	170 ppm
CAS: 6484-52-2	Ammonium Nitrate	73 mg/m³
CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	3300* ppn
CAS: 67-56-1	Methanol	2,100 ppm
CAS: 67-63-0	Isopropanol	2000* ppn
PAC-3:		
CAS: 141-43-5	2-Aminoethanol (Monoethanolamine), Reagent Grade	1,000 ppm
CAS: 6484-52-2	Ammonium Nitrate	440 mg/m^3
CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	15000* ppm
CAS: 67-56-1	Methanol	7200* ppm
CAS: 67-63-0	Isopropanol	12000** ppn

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

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.

· 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.

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

CAS: 141-43-5 2-Aminoethanol (Monoethanolamine), Reagent Grade

PEL Long-term value: 6 mg/m³, 3 ppm REL Short-term value: 15 mg/m³, 6 ppm

Long-term value: 8 mg/m³, 3 ppm

TLV Short-term value: 6 ppm Long-term value: 3 ppm

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

PEL Long-term value: 1900 mg/m³, 1000 ppm REL Long-term value: 1900 mg/m³, 1000 ppm

TLV Short-term value: 1000 ppm

A3

CAS: 67-56-1 Methanol

PEL Long-term value: 260 mg/m³, 200 ppm

REL Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm

Skin

TLV Short-term value: 250 ppm Long-term value: 200 ppm

Skin; BEI

· Ingredients with biological limit values:

CAS: 67-56-1 Methanol

BEI 15 mg/L

LD50 Intraperitoneal: urine

Time: end of shift

LD50: Methanol (background, 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.

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

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· Material of gloves

(Contd. of page 5)

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

Information on basic physical and c	chemical properties
General Information Appearance:	
Appearance. Form:	Liquid
Color:	Clear
Odor:	Characteristic
Odor threshold:	Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	78.3 °C (172.9 °F)
Flash point:	11 °C (51.8 °F)
Flammability (solid, gaseous):	Highly flammable.
Ignition temperature:	385 °C (725 °F)
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Explosive when mixed with combustible material.
Explosion limits:	
Lower:	3.5 Vol %
Upper:	19 Vol %
<i>Vapor pressure at 20 °C (68 °F):</i>	59 hPa (44.3 mm Hg)
Density at 20 °C (68 °F):	1.13957 g/cm³ (9.50971 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.

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		(Contd. of page 6
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		
Organic solvents:	48.0 %	
Water:	29.3 %	
VOC content:	48.00 %	
	547.0 g/l / 4.56 lb/gal	
Solids content:	34.7 %	
· 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:

· LD/LC50 1	values tha	t are relevant for classification:
ATE (Acut	te Toxicity	Estimate)
		4,241 mg/kg
Dermal	LD50	2,709 mg/kg
Inhalative	LC50/4h	v v

- · 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: 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 (Intern	ational Agency for Research on Cancer)	
CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	1
CAS: 67-63-0	Isopropanol	3
		(6 1 0)

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

- · 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.

4 Transport information	
· UN-Number · DOT, IMDG, IATA	UN2924
UN proper shipping name	
$\cdot DOT$	Flammable liquids, corrosive, n.o.s. (Ethanol, 2-Aminoethanol
	(Monoethanolamine), Reagent Grade)
· IMDG, IATA	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Ethanol, 2-

Aminoethanol (Monoethanolamine), Reagent Grade)

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(Contd. of page 8) · Transport hazard class(es) $\cdot DOT$ · Class 3 Flammable liquids · Label 3, 8 · IMDG · Class 3 Flammable liquids · Label 3/8 \cdot IATA 3 Flammable liquids · Class · Label 3(8)· Packing group · DOT, IMDG, IATA IINot applicable. · Environmental hazards: · Special precautions for user Warning: Flammable liquids · Hazard identification number (Kemler code): 338 · EMS Number: F-E,S-C· Segregation groups (SGG18) Alkalis · Stowage Category · Stowage Code SW2 Clear of living quarters. · Segregation Code SG35 Stow "separated from" SGG1-acids · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable. · Transport/Additional information: $\cdot DOT$ On passenger aircraft/rail: 1 L · Quantity limitations On cargo aircraft only: 5 L · IMDG · Limited quantities (LQ) 1LCode: E2 · Excepted quantities (EQ) Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml (Contd. on page 10)

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Trade name: Hydrogen Sulfide Solvent

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· UN "Model Regulation":

UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL, 2-AMINOETHANOL (MONOETHANOLAMINE), REAGENT GRADE), 3 (8), II

15 Regulatory information

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

· Section 355	(extremely	hazardous	substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

CAS: 6484-52-2 A	Ammonium Nitrate
------------------	------------------

CAS: 67-56-1 Methanol

CAS: 67-63-0 Isopropanol

· TSCA (Toxic Substances Control Act):

2-Aminoethanol (Monoethanolamine), Reagent Grade	ACTIVE
Water	ACTIVE
Ammonium Nitrate	ACTIVE
Ethyl Alcohol, Absolute 200 Proof	ACTIVE
Methanol	ACTIVE
Isopropanol	ACTIVE

· Hazardous Air Pollutants

CAS: 67-56-1 Methanol

· 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 Ethyl Alcohol, Absolute 200 Proof

CAS: 67-56-1 Methanol

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value)

CAS: 64-17-5	Ethyl Alcohol, Absolute 200 Proof	<i>A3</i>
CAS: 67-63-0	Isopropanol	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).

(Contd. on page 11)

(Contd. of page 10)

Safety Data Sheet acc. to OSHA HCS

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Trade name: Hydrogen Sulfide Solvent

· Hazard pictograms







· Signal word Danger

· Hazard-determining components of labeling:

2-Aminoethanol (Monoethanolamine), Reagent Grade

· Hazard statements

Highly flammable liquid and vapor.

May cause fire or explosion; strong oxidizer.

Causes severe skin burns and eye damage.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep/Store away from clothing and other combustible materials

Take any precaution to avoid mixing with combustibles.

Keep container tightly closed.

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.

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

Wear fire/flame resistant/retardant clothing.

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 on clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

Specific treatment (see on this label).

Wash contaminated clothing before reuse.

In case of fire: Use CO2, powder or water spray to extinguish.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

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.
- · Date of preparation / last revision

Revision 0.0, 10-26-2022 Creation date for SDS. STN 10/26/2022

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Trade name: Hydrogen Sulfide Solvent

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· 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)

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 Flammable Liquids 2: Flammable liquids – Category 2

Oxidizing Liquids 1: Oxidizing liquids – Category 1 Skin Corrosion 1B: Skin corrosion/irritation – Category 1B Eye Damage 1: Serious eye damage/eye irritation – Category 1

US