Printing date 05/21/2024 Reviewed on 05/21/2024

### 1 Identification

· Product identifier

· Trade name: Benzene 10% w/w Ethylbenzene 90% w/w

· Article number: MOB095

· 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.



GHS06 Skull and crossbones

Acute Toxicity - Dermal 3 H311 Toxic in contact with skin.



GHS08 Health hazard

Germ Cell Mutagenicity 1B H340 May cause genetic defects.

Carcinogenicity 1A H350 May cause cancer.

Specific Target Organ Toxicity - Repeated Exposure 1 H372-H373 Causes damage to the central nervous system

and the hematopoietic system through prolonged or repeated exposure. May cause damage to the hearing organs through

prolonged or repeated exposure.

Aspiration Hazard 1 H304 May be fatal if swallowed and enters

airways.



Acute Toxicity - Inhalation 4 H332 Harmful if inhaled.
Skin Irritation 2 H315 Causes skin irritation.

(Contd. on page 2)

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Trade name: Benzene 10% w/w Ethylbenzene 90% w/w

(Contd. of page 1)

Eye Irritation 2A

H319

Causes serious eye irritation.

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









GHS02

GHS06 GHS07 GHS08

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

Ethylbenzene, Anhydrous, 99.8%

Benzene

· Hazard statements

Highly flammable liquid and vapor.

Toxic in contact with skin.

Harmful if inhaled.

Causes skin irritation.

Causes serious eye irritation.

May cause genetic defects.

May cause cancer.

Causes damage to the central nervous system and the hematopoietic system through prolonged or repeated exposure. May cause damage to the hearing 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.

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 dust/fume/gas/mist/vapors/spray.

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: 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 immediately all contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

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Trade name: Benzene 10% w/w
Ethylbenzene 90% w/w

(Contd. of page 2)

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

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

· HMIS-ratings (scale 0 - 4)



Health = 2 Fire = 3Reactivity = 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 con	nponents:	
CAS: 100-41-4	Ethylbenzene, Anhydrous, 99.8%	90.0%
CAS: 71-43-2	Benzene	10.0%

### 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.

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

· After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. 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.

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Trade name: Benzene 10% w/w Ethylbenzene 90% w/w

(Contd. of page 3)

### 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.

#### 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 section 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: 100-41-4	Ethylbenzene, Anhydrous, 99.8%	33 ppm
CAS: 71-43-2	Benzene	52 ppm
· PAC-2:		
CAS: 100-41-4	Ethylbenzene, Anhydrous, 99.8%	1100* ppm
CAS: 71-43-2	Benzene	800 ppm
· PAC-3:		
CAS: 100-41-4	Ethylbenzene, Anhydrous, 99.8%	1800* ppm
CAS: 71-43-2	Benzene	4000* ppm

### 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.

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Trade name: Benzene 10% w/w Ethylbenzene 90% w/w

(Contd. of page 4)

- · 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 section 7.
- · Control parameters

· Components	with li	mit value	s that i	romniro	monitoring	at the	worknlace.
· Components	wiii ii	mu vaiue:	s unun 1	equire	monuoring	ui ine	workplace.

#### CAS: 100-41-4 Ethylbenzene, Anhydrous, 99.8%

PEL Long-term value: 435 mg/m³, 100 ppm

REL Short-term value: 545 mg/m³, 125 ppm

Long-term value: 435 mg/m³, 100 ppm

TLV Long-term value: 20 ppm

OTO, BEI, A3

#### CAS: 71-43-2 Benzene

PEL Short-term value: 15\* mg/m³, 5\* ppm

Long-term value: 3\* mg/m³, 1\* ppm

\*table Z-2 for exclusions in 29CFR1910.1028(d)

REL Short-term value: 1 ppm

Long-term value: 0.1 ppm

See Pocket Guide App. A

TLV Short-term value: (2.5) NIC-0.1 ppm

Long-term value: (0.5) NIC-0.02 ppm

Skin; BEI, A1

#### · Ingredients with biological limit values:

#### CAS: 100-41-4 Ethylbenzene, Anhydrous, 99.8%

#### BEI 0.15 g/g creatinine

LD50 Intraperitoneal: urine

Time: end of shift at end of workweek

LD50: Sum of mandelic acid and phenylglyoxylic acid (nonspecific)

### CAS: 71-43-2 Benzene

#### BEI 25 µg/g creatinine

LD50 Intraperitoneal: urine

Time: end of shift Parameter

LD50: S-Phenylmercapturic acid (background

500 μg/g creatinine

LD50 Intraperitoneal: urine

Time: end of shift

LD50: t,t-Muconic acid (background)

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

(Contd. on page 6)

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Trade name: Benzene 10% w/w
Ethvlbenzene 90% w/w

(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

Odor: Distinct

Odor threshold: Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:Undetermined.Boiling point/Boiling range:80 °C (176 °F)

• Flash point:  $-11 \,^{\circ}C \,(12.2 \,^{\circ}F)$ 

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Printing date 05/21/2024 Reviewed on 05/21/2024

Trade name: Benzene 10% w/w Ethylbenzene 90% w/w

	(Contd. of page
Flammability (solid, gaseous):	Highly flammable.
Auto igniting:	430 °C (806 °F)
Decomposition temperature:	Not determined.
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapo mixtures are possible.
Explosion limits:	
Lower:	1 Vol %
Upper:	8 Vol %
Vapor pressure at 20 $^{\circ}C$ (68 $^{\circ}F$ ):	100 hPa (75 mm Hg)
Density at 20 °C (68 °F):	0.84752 g/cm³ (7.07255 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:	100.0 %
VOC content:	100.00 %
	847.5 g/l / 7.07 lb/gal
Solids content:	0.0 %
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.

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Printing date 05/21/2024 Reviewed on 05/21/2024

Trade name: Benzene 10% w/w
Ethylbenzene 90% w/w

(Contd. of page 7)

## 11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are relevant for classification:			
ATE (Acua	te Toxicity	Estimate)	
Dermal	LD50	480 mg/kg (mouse)	
Inhalative	LC50/4h	12.2 mg/l	

- · Primary irritant effect:
- · on the skin: Irritant to skin and mucous membranes.
- · on the eye: Irritating effect.
- · Sensitization: No sensitizing effects known.
- $\cdot \textit{Additional toxicological information:}$

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

Harmful

Irritant

The product can cause inheritable damage.

· Carcinogenic categories

,	tional Agency for Research on Cancer)		
CAS: 100-41-4	Ethylbenzene, Anhydrous, 99.8%	2B	
CAS: 71-43-2	Benzene	1	
· NTP (National	Toxicology Program)		
CAS: 71-43-2 Benzene			
· OSHA-Ca (Occupational Safety & Health Administration)			
CAS: 71-43-2	Benzene		

## 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 3 (Self-assessment): extremely hazardous for water

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

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.

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Trade name: Benzene 10% w/w Ethylbenzene 90% w/w

(Contd. of page 8)

# 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.

11X1 X1 1	
· UN-Number · DOT, IMDG, IATA	UN1993
· UN proper shipping name · DOT	Flammable liquids, n.o.s. (Ethylbenzene, Anhydrous, 99.89 Benzene)
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S. (Ethylbenzene, Anhydrous, 99.89 Benzene)
· Transport hazard class(es)	
· DOT	
RAMMABLE LOUID	
· Class	3 Flammable liquids
· Label · IMDG, IATA	
· 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	e): 336
· EMS Number:	F- $E$ , $S$ - $E$

(Contd. on page 10)

Printing date 05/21/2024 Reviewed on 05/21/2024

Trade name: Benzene 10% w/w Ethylbenzene 90% w/w

(Contd. of page 9) · Transport/Additional information: · Quantity limitations On passenger aircraft/rail: 1 L On cargo aircraft only: 60 L  $\cdot$  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 1993 FLAMMABLE LIQUID, N.O.S. (ETHYLBENZENE, · UN "Model Regulation": ANHYDROUS, 99.8%, BENZENE), 3, II

Regulatory in Safety, health a	ond environmental regulations/legislation specific for the substance	or mixture
Sara		
,	tremely hazardous substances):	
None of the ingr	edients is listed.	
Section 313 (Sp	ecific toxic chemical listings):	
All ingredients a	ıre listed.	
TSCA (Toxic St	ubstances Control Act):	
Ethylbenzene, A	nhydrous, 99.8%	ACTIV
Benzene		ACTIV
Hazardous Air	Pollutants	
All ingredients d	ıre listed.	
Proposition 65		
Chemicals knov	vn to cause cancer:	
All ingredients a	ıre listed.	
Chemicals knov	vn to cause reproductive toxicity for females:	
None of the ingr	edients is listed.	
Chemicals knov	vn to cause reproductive toxicity for males:	
CAS: 71-43-2 I	Senzene	
Chemicals knov	vn to cause developmental toxicity:	
CAS: 71-43-2 E	*	

CAS: 71-43-2 Benzene A, K/L · TLV (Threshold Limit Value) CAS: 100-41-4 Ethylbenzene, Anhydrous, 99.8% *A3* CAS: 71-43-2 Benzene *A1* 

(Contd. on page 11)

Printing date 05/21/2024 Reviewed on 05/21/2024

Trade name: Benzene 10% w/w Ethylbenzene 90% w/w

(Contd. of page 10)

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

CAS: 71-43-2 Benzene

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









GHS06

GHS07

· Signal word Danger

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

Ethylbenzene, Anhydrous, 99.8%

Benzene

#### · Hazard statements

Highly flammable liquid and vapor.

Toxic in contact with skin.

Harmful if inhaled.

Causes skin irritation.

Causes serious eye irritation.

May cause genetic defects.

May cause cancer.

Causes damage to the central nervous system and the hematopoietic system through prolonged or repeated exposure. May cause damage to the hearing 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.

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 dust/fume/gas/mist/vapors/spray.

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: 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 immediately all contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

(Contd. on page 12)

Printing date 05/21/2024 Reviewed on 05/21/2024

Trade name: Benzene 10% w/w
Ethylbenzene 90% w/w

(Contd. of page 11)

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

Store in a well-ventilated place. Keep cool.

Store locked up.

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

- · National regulations:
- · Additional classification according to Decree on Hazardous Materials:

Carcinogenic hazardous material group III (dangerous).

· Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· 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:

· Date of preparation / last revision

Revision 1.2, 05/21/2024: Reviewed SDS for accuracy. MH/STN

Revision 0.0, 04-30-2024: Creation date for SDS. STN

05/21/2024

· 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

Acute Toxicity - Dermal 3: Acute toxicity - Category 3

Acute Toxicity - Inhalation 4: Acute toxicity - Category 4

Skin Irritation 2: Skin corrosion/irritation – Category 2

Eye Irritation 2A: Serious eye damage/eye irritation - Category 2A

Germ Cell Mutagenicity 1B: Germ cell mutagenicity - Category 1B

Carcinogenicity 1A: Carcinogenicity - Category 1A

Specific Target Organ Toxicity - Repeated Exposure 1: Specific target organ toxicity (repeated exposure) - Category 1

Aspiration Hazard 1: Aspiration hazard – Category 1

\* Data compared to the previous version altered.

US