Printing date 08/04/2023 Reviewed on 08/04/2023

1 Identification

· Product identifier

· Trade name: <u>MEK/MIBK</u> 1:1 V/V Solution

· Article number: ERL272

· 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

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.



GHS08 Health hazard

Carcinogenicity 2

H351 Suspected of causing cancer.



GHS07

Eye Irritation 2A

H319 Causes serious eye irritation.

Specific Target Organ Toxicity - Single Exposure 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

· Signal word Danger

(Contd. on page 2)

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Trade name: MEK/MIBK 1:1 V/V Solution

(Contd. of page 1)

· Hazard-determining components of labeling:

Methyl Isobutyl Ketone (4-Methyl-2-pentanone)

Methyl Ethyl Ketone

· Hazard statements

Highly flammable liquid and vapor.

Causes serious eye irritation.

Suspected of causing cancer.

May cause drowsiness or dizziness.

· 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.

Avoid breathing 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 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.

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 = 3

Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 2

Fire = 3

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

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Trade name: MEK/MIBK
1:1 V/V Solution

(Contd. of page 2)

3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- · Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:							
CAS: 78-93-3	Methyl Ethyl Ketone	50.162%					
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	49.838%					

4 First-aid measures

- · Description of first aid measures
- · General information: Immediately remove any clothing soiled by the product.
- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Immediately rinse with water.
- · After eve 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.

- · 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:

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).

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.

(Contd. on page 4)

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1:1 V/V Solution

· Protective Action	on Criteria for Chemicals	(Contd. of page 3)
· PAC-1:		
CAS: 78-93-3	Methyl Ethyl Ketone	200 ppm
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	75 ppm
· PAC-2:		
CAS: 78-93-3	Methyl Ethyl Ketone	2700* ppm
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	500 ppm
· PAC-3:		
CAS: 78-93-3	Methyl Ethyl Ketone	4000* ppm
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	3000* 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.

- · 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

· Con	troi parameters					
· Con	· Components with limit values that require monitoring at the workplace:					
CAS	: 78-93-3 Methyl Ethyl Ketone					
PEL	Long-term value: 590 mg/m³, 200 ppm					
REL	Short-term value: 885 mg/m³, 300 ppm					
	Long-term value: 590 mg/m³, 200 ppm					
TLV	Short-term value: NIC-150 (300) ppm					
	Long-term value: NIC-75 (200) ppm					
	BEL NIC-Skin					

(Contd. on page 5)

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Trade name: MEK/MIBK
1:1 V/V Solution

(Contd. of page 4)

CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)

PEL Long-term value: 410 mg/m³, 100 ppm REL Short-term value: 300 mg/m³, 75 ppm Long-term value: 205 mg/m³, 50 ppm

TLV Short-term value: 75 ppm Long-term value: 20 ppm

BEI, A3

· Ingredients with biological limit values:

CAS: 78-93-3 Methyl Ethyl Ketone

BEI 2 mg/L

LD50 Intraperitoneal: urine

Time: end of shift

LD50: Methyl ethyl ketone (nonspecific)

CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)

BEI 1 mg/L

LD50 Intraperitoneal: urine

Time: end of shift LD50: MIBK

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- $\cdot \textit{General protective and hygienic measures:} \\$

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.

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Trade name: MEK/MIBK
1:1 V/V Solution

(Contd. of page 5)

· Eye protection:



Tightly sealed goggles

· Body protection: Protective work clothing

Information on basic physical and o	chemical properties
General Information	
Appearance:	
Form:	Liquid
Color:	Clear
· Odor: · Odor threshold:	Characteristic Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	79 °C (174.2 °F)
Flash point:	-4 °C (24.8 °F)
Flammability (solid, gaseous):	Highly flammable.
Auto igniting:	460 °C (860 °F)
Decomposition temperature:	Not determined.
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vaper mixtures are possible.
Explosion limits:	
Lower:	1.7 Vol %
Upper:	11.5 Vol %
Vapor pressure at 20 °C (68 °F):	105 hPa (78.8 mm Hg)
Density at 20 °C (68 °F):	0.80341 g/cm³ (6.70446 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	er): Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.

(Contd. on page 7)

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Trade name: MEK/MIBK
1:1 V/V Solution

		(Contd. of page 6)
· Solvent content: Organic solvents: VOC content:	100.0 % 100.00 % 803.4 g/l / 6.70 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.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Inhalative LC50/4h 22.1 mg/l (ATE)

- · Primary irritant effect:
- · on the skin: No irritant effect.
- · 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 (Interna	tional Agency for Research on Cancer)	
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	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.

(Contd. on page 8)

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Trade name: MEK/MIBK
1:1 V/V Solution

(Contd. of page 7)

- · 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.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

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· DOT, IMDG, IATA

UN1993

· UN proper shipping name

 $\cdot DOT$

Flammable liquids, n.o.s. (Methyl Ethyl Ketone

, Methyl Isobutyl Ketone (4-Methyl-2-pentanone))
• IMDG, IATA FLAMMABLE LIQUID, N.O.S. (Methyl Ethyl Ketone

, Methyl Isobutyl Ketone (4-Methyl-2-pentanone))

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



· Class 3 Flammable liquids

· Label

· IMDG, IATA



· Class 3 Flammable liquids

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Trade name: MEK/MIBK 1:1 V/V Solution

	(Contd. of page
· 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:	<i>F-E</i> , <u><i>S-E</i></u>
· Stowage Category	В
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L
~ .	On cargo aircraft only: 60 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. (METHYL ETH
Š	KETONE
	, METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE 3, II

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture

No further relevant information available

No further relev	vant information available.	
Sara		
· Section 355 (ex	ctremely hazardous substances):	
None of the ing	redients is listed.	
· Section 313 (Sp	pecific toxic chemical listings):	
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	
· TSCA (Toxic S	ubstances Control Act):	
Methyl Ethyl Ko	etone	ACTIVE
Methyl Isobutyl	Ketone (4-Methyl-2-pentanone)	ACTIVE
· Hazardous Air	Pollutants	
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	

- · Proposition 65
- · Chemicals known to cause cancer:

CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)

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· 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: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)

· Carcinogenic categories

· EPA (Environmental Protection Agency)

All components have the value I.

· TLV (Threshold Limit Value)

None of the ingredients is listed.

· 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

02 GHS07

GHS0

· Signal word Danger

· Hazard-determining components of labeling:

Methyl Isobutyl Ketone (4-Methyl-2-pentanone)

Methyl Ethyl Ketone

· Hazard statements

Highly flammable liquid and vapor.

Causes serious eye irritation.

Suspected of causing cancer.

May cause drowsiness or dizziness.

· 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.

Avoid breathing 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 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.

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Trade name: MEK/MIBK 1:1 V/V Solution

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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, 08/04/2023: Reviewed SDS for Accuracy.. STN Revision 0.0, 04-09-2021: Creation date for SDS. STN 08/04/2023

· 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

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

Carcinogenicity 2: Carcinogenicity – Category 2

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) - Category 3

* Data compared to the previous version altered.