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1 Identification

- · Product identifier
- Trade name: <u>2% Allyl Alcohol; 2%1-propanol</u> <u>2% 4-Vinyl 1-Cyclohexene in Acetonitrile w/w</u>
- Article number: MOT092
- 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 substan	nce 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 ha	zard
Carcinogenicity 2	H351 Suspected of causing cancer.
GHS07	
Acute Toxicity - Oral 4	H302 Harmful if swallowed.
Acute Toxicity - Inhalation 4	H332 Harmful if inhaled.
Eye Irritation 2A	H319 Causes serious eye irritation.
• Label elements • GHS label elements The pro	duct is classified and labeled according to the Globally Harmonized System (GHS). (Contd. on page 2) US-



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· 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.

· Dangerous components:		
CAS: 75-05-8	Acetonitrile, Reagent ACS Grade 94.0	0%
CAS: 71-23-8	n-propanol 2.0	1%
CAS: 100-40-3	4-Vinyl-1-Cyclohexene 2.0	%
CAS: 107-18-6	allyl alcohol 2.0	1%

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: 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 No further relevant information available.

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		(Contd. of pa
Advice for firefig Protective equip	ghters ment: Mouth respiratory protective device.	
6 Accidental re	lease measures	
	tions, protective equipment and emergency procedures	
	equipment. Keep unprotected persons away.	
• Environmental p	orecautions: oduct to reach sewage system or any water course.	
	e authorities in case of seepage into water course or sewage system.	
Dilute with plent		
	enter sewers/ surface or ground water.	
	uterial for containment and cleaning up:	
	<i>id-binding material (sand, diatomite, acid binders, universal binders, sawdust).</i> <i>inated material as waste according to section 13.</i>	
Ensure adequate	•	
· Reference to oth		
See Section 7 for	information on safe handling.	
	information on personal protection equipment.	
	or disposal information. n Criteria for Chemicals	
· Protective Action	n Crueriu for Chemicuis	
	Acetonitrile, Reagent ACS Grade	13 ppn
	n-propanol	250 pp
	4-Vinyl-1-Cyclohexene	0.3 pp
CAS: 107-18-6		0.09 pj
· PAC-2:		'
CAS: 75-05-8	Acetonitrile, Reagent ACS Grade	50 ppi
CAS: 71-23-8	n-propanol	670 pj
CAS: 100-40-3	4-Vinyl-1-Cyclohexene	210 pj
CAS: 107-18-6	allyl alcohol	1.7 pp
· PAC-3:		
	Acetonitrile, Reagent ACS Grade	150 ppm
CAS: 75-05-8	Acetonitrile, Reagent ACS Grade n-propanol	150 ррт 4000* рр

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.

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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.
- \cdot 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

· Compo	nents with limit values that require monitoring at the workplace:
CAS: 7	5-05-8 Acetonitrile, Reagent ACS Grade
PEL	Long-term value: 70 mg/m³, 40 ppm
REL	Long-term value: 34 mg/m ³ , 20 ppm
TLV	Long-term value: 20 ppm Skin, A4
CAS: 7	1-23-8 n-propanol
PEL	Long-term value: 500 mg/m ³ , 200 ppm
REL	Short-term value: 625 mg/m³, 250 ppm Long-term value: 500 mg/m³, 200 ppm Skin
TLV	Long-term value: 100 ppm A4
CAS: 1	00-40-3 4-Vinyl-1-Cyclohexene
TLV	Long-term value: 0.1 ppm A3
WEEL	Long-term value: 4.4 mg/m³, 1 ppm
CAS: 1	07-18-6 allyl alcohol
PEL	Long-term value: 5 mg/m³, 2 ppm Skin
REL	Short-term value: 10 mg/m³, 4 ppm Long-term value: 5 mg/m³, 2 ppm Skin
TLV	Long-term value: 0.5 ppm Skin, A4
Additio	nal information: The lists that were valid during the creation were used as basis.

• 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.

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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

Information on basic physical and of General Information	chemical properties	
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:	Undetermined.	
Flash point:	5 °C (41 °F)	
Flammability (solid, gaseous):	Highly flammable.	
Auto igniting:	525 °C (977 °F)	
Decomposition temperature:	Not determined.	

US

Safety Data Sheet acc. to OSHA HCS

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	(Contd. of page
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:	4.4 Vol %
Upper:	16 Vol %
Vapor pressure at 20 °C (68 °F):	97 hPa (72.8 mm Hg)
Density at 20 °C (68 °F):	0.78498 g/cm³ (6.55066 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	p r): Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Solvent content:	
Organic solvents:	4.0 %
VOC content:	4.00 %
	31.4 g/l / 0.26 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 tha	t are relevant for classification:
ATE (Acu	te Toxicity	e Estimate)
Oral		454 mg/kg
Dermal	LD50	770 mg/kg
Inhalative	LC50/4h	10.9 mg/l
	•	(Contd. on page 8)

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2B

•	Primary	irritant	effect:
---	---------	----------	---------

• on the skin: No irritant effect.

- on the eye: Irritating effect.
- Sensitization: No sensitizing effects known.
- \cdot Additional toxicological information:

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

Harmful Irritant

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

CAS: 100-40-3 4-Vinyl-1-Cyclohexene

· 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 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even 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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UN-Number DOT, IMDG, IATA	UN1993
UN proper shipping name DOT	Flammable liquids, n.o.s. (acetonitrile, allyl alcohol, n-propar 4-Vinyl-1-Cyclohexene)
IMDG, IATA	FLAMMABLE LIQUID, N.O.S. (acetonitrile, allyl alcohol, propanol, 4-Vinyl-1-Cyclohexene)
Transport hazard class(es)	
DOT	
RAMANE LOOD	
Class Label	3 Flammable liquids 3
IMDG, IATA	
Class	3 Flammable liquids
Label	3
Packing group	
DOT, IMDG IATA	II I
	1
Environmental hazards: Marine pollutant:	No
Special precautions for user	Warning: Flammable liquids
Hazard identification number (Kemler code): EMS Number:	- 336 F-E,S-E
Stowage Category	B
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: 1 L On cargo aircraft only: 30 L
IMDG	
Limited quantities (LQ)	0
Excepted quantities (EQ)	Code: E3
	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml

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ACTIVE

ACTIVE

ACTIVE

ACTIVE

· UN "Model Regulation":

UN 1993 FLAMMABLE LIQUID, N.O.S. (ACETONITRILE, ALLYL ALCOHOL, N-PROPANOL, 4-VINYL-1-CYCLOHEXENE), 3, 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):

CAS: 107-18-6 allyl alcohol

• Section 313 (Specific toxic chemical listings):

CAS: 75-05-8 Acetonitrile, Reagent ACS Grade

CAS: 107-18-6 allyl alcohol

• TSCA (Toxic Substances Control Act):

Acetonitrile, Reagent ACS Grade

4-Vinyl-1-Cyclohexene

allyl alcohol

· Hazardous Air Pollutants

CAS: 75-05-8 Acetonitrile, Reagent ACS Grade

· Proposition 65

• Chemicals known to cause cancer:

CAS: 100-40-3 4-Vinyl-1-Cyclohexene

· Chemicals known to cause reproductive toxicity for females:

CAS: 100-40-3 4-Vinyl-1-Cyclohexene

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

CAS: 75-05-8 Acetonitrile, Reagent ACS Grade CBD, D

· TLV (Threshold Limit Value)

CAS: 75-05-8 Acetonitrile, Reagent ACS Grade

CAS: 71-23-8 n-propanol

CAS: 100-40-3 4-Vinyl-1-Cyclohexene

CAS: 107-18-6 allyl alcohol

· 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)

- US

A4

A4

A3

A4

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Trade name: 2% Allyl Alcohol; 2%1-propanol 2% 4-Vinyl 1-Cyclohexene in Acetonitrile w/w

(Contd. of page 11)

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 05/12/2023, reviewed SDS for accuracy. STN Creation date for SDS 12-03-2014. STN 05/12/2023
- · 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 Flammable Liquids 2: Flammable liquids – Category 2 Acute Toxicity - Oral 4: Acute toxicity - Category 4 Acute Toxicity - Dermal 3: Acute toxicity - Category 3 Eye Irritation 2A: Serious eye damage/eye irritation - Category 2A Carcinogenicity 2: Carcinogenicity – Category 2 \cdot * Data compared to the previous version altered.