

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/10/2020

Reviewed on 03/10/2020

## 1 Identification

- **Product identifier**
- **Trade name:** AO-Original w/Nonylphenol  
Level 3
- **Article number:** ARL017
- **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
- **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.



GHS08 Health hazard

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

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



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
Cyclohexane

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· **Hazard statements**

Highly flammable liquid and vapor.  
 Causes skin irritation.  
 Suspected of damaging fertility or the unborn child.  
 May cause drowsiness or dizziness.  
 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.  
 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 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 exposed or concerned: Get medical advice/attention.  
 Call a poison center/doctor if you feel unwell.  
 Take off contaminated clothing and wash it before reuse.  
 If skin irritation occurs: Get medical advice/attention.  
 In case of fire: Use for extinction: CO<sub>2</sub>, 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.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 1  
 Fire = 3  
 Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 1  
 Fire = 3  
 Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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## 3 Composition/information on ingredients

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

- **Dangerous components:**

|                 |                         |       |
|-----------------|-------------------------|-------|
| CAS: 110-82-7   | Cyclohexane             | 99.8% |
| CAS: 84852-15-3 | 4-nonylphenol, branched | 0.2%  |

## 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.
- **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:**  
CO<sub>2</sub>, 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** 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:** 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 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-I:**

|                 |                         |                       |
|-----------------|-------------------------|-----------------------|
| CAS: 110-82-7   | Cyclohexane             | 300 ppm               |
| CAS: 84852-15-3 | 4-nonylphenol, branched | 3.9 mg/m <sup>3</sup> |

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|                 |                         |                       |
|-----------------|-------------------------|-----------------------|
| · <b>PAC-2:</b> |                         |                       |
| CAS: 110-82-7   | Cyclohexane             | 1700* ppm             |
| CAS: 84852-15-3 | 4-nonylphenol, branched | 43 mg/m <sup>3</sup>  |
| · <b>PAC-3:</b> |                         |                       |
| CAS: 110-82-7   | Cyclohexane             | 10000** ppm           |
| CAS: 84852-15-3 | 4-nonylphenol, branched | 260 mg/m <sup>3</sup> |

## 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 item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.  
At this time, the remaining constituent has no known exposure limits.

|                                  |   |
|----------------------------------|---|
| <b>CAS: 110-82-7 Cyclohexane</b> |   |
| PEL                              | Long-term value: 1050 mg/m <sup>3</sup> , 300 ppm |
| REL                              | Long-term value: 1050 mg/m <sup>3</sup> , 300 ppm |
| TLV                              | Long-term value: 344 mg/m <sup>3</sup> , 100 ppm  |

- **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.

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Avoid contact with the skin.

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:**

|                        |                      |
|------------------------|----------------------|
| <b>Form:</b>           | Liquid               |
| <b>Color:</b>          | Clear to pale yellow |
| <b>Odor:</b>           | Strong               |
| <b>Odor threshold:</b> | Not determined.      |

· **pH-value:** Not determined.

· **Change in condition**

|                                     |                  |
|-------------------------------------|------------------|
| <b>Melting point/Melting range:</b> | 6.4 °C (43.5 °F) |
| <b>Boiling point/Boiling range:</b> | 81 °C (177.8 °F) |

· **Flash point:** -18 °C (-64.4 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 260 °C (500 °F)

· **Decomposition temperature:** Not determined.

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|   |  |
|---|--|
| · <b>Auto igniting:</b>   | Product is not selfigniting.   |
| · <b>Danger of explosion:</b>                                     | Product is not explosive. However, formation of explosive air/vapor mixtures are possible. |
| · <b>Explosion limits:</b>  |  |
| <b>Lower:</b>   | 1.2 Vol %  |
| <b>Upper:</b>   | 8.3 Vol %  |
| · <b>Vapor pressure at 20 °C (68 °F):</b>                         | 104 hPa (78 mm Hg)   |
| · <b>Density at 20 °C (68 °F):</b>                                | 0.78 g/cm <sup>3</sup> (6.5091 lbs/gal)  |
| · <b>Relative density</b>   | Not determined.  |
| · <b>Vapor density</b>  | Not determined.  |
| · <b>Evaporation rate</b>   | Not determined.  |
| · <b>Solubility in / Miscibility with Water at 20 °C (68 °F):</b> | 0.05 g/l   |
| · <b>Partition coefficient (n-octanol/water):</b>                 | Not determined.  |
| · <b>Viscosity:</b>   |  |
| <b>Dynamic at 20 °C (68 °F):</b>                                  | 0.94 mPas  |
| <b>Kinematic:</b>   | Not determined.  |
| · <b>Solvent content:</b>   |  |
| <b>Organic solvents:</b>  | 99.8 %   |
| <b>VOC content:</b>   | 99.80 %  |
|   | 998.0 g/l / 8.33 lb/gal  |
| <b>Solids content:</b>  | 0.0 %  |
| · <b>Other information</b>  | 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:**

CAS: 84852-15-3 4-nonylphenol, branched

|      |      |                 |
|------|------|-----------------|
| Oral | LD50 | 500 mg/kg (ATE) |
|------|------|-----------------|

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** No irritating effect.

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- **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 (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **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.

## 14 Transport information

- |                                  |  |
|----------------------------------|--|
| · <b>UN-Number</b>               | UN1993   |
| · <b>DOT, IMDG, IATA</b>         |  |
| · <b>UN proper shipping name</b> | Flammable liquids, n.o.s. (Cyclohexane)        |
| · <b>DOT</b>                     | FLAMMABLE LIQUID, N.O.S. (CYCLOHEXANE), MARINE |
| · <b>IMDG</b>                    | POLLUTANT                                      |

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· IATA

FLAMMABLE LIQUID, N.O.S. (CYCLOHEXANE)

· Transport hazard class(es)

· DOT



· Class

3 Flammable liquids

· Label

3

· IMDG



· Class

3 Flammable liquids

· Label

3

· IATA



· Class

3 Flammable liquids

· Label

3

· Packing group

· DOT, IMDG, IATA

II

· Environmental hazards:

Product contains environmentally hazardous substances:  
Cyclohexane

· Marine pollutant:

Symbol (fish and tree)

· Special precautions for user

Warning: Flammable liquids

· Danger code (Kemler):

33

· EMS Number:

F-E, S-D

· 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: 5 L

On cargo aircraft only: 60 L

· IMDG

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

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· UN "Model Regulation":

UN 1993 FLAMMABLE LIQUID, N.O.S. (CYCLOHEXANE), 3, II

## 15 Regulatory information

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

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

All ingredients are listed.

· TSCA (Toxic Substances Control Act):

Cyclohexane

ACTIVE

4-nonylphenol, branched

ACTIVE

· Hazardous Air Pollutants

None of the ingredients is listed.

· 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:

None of the ingredients is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

CAS: 110-82-7 Cyclohexane

I

· TLV (Threshold Limit Value established by ACGIH)

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



GHS07



GHS08

· Signal word Danger

· Hazard-determining components of labeling:

Cyclohexane

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· **Hazard statements**

Highly flammable liquid and vapor.  
 Causes skin irritation.  
 Suspected of damaging fertility or the unborn child.  
 May cause drowsiness or dizziness.  
 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.  
 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 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 exposed or concerned: Get medical advice/attention.  
 Call a poison center/doctor if you feel unwell.  
 Take off contaminated clothing and wash it before reuse.  
 If skin irritation occurs: Get medical advice/attention.  
 In case of fire: Use for extinction: CO<sub>2</sub>, 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 0.0, 03-09-2020: Creation date for SDS. STN  
 03/10/2020 / -

· **Abbreviations and acronyms:**

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  
Flam. Liq. 2: Flammable liquids – Category 2  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Repr. 2: Reproductive toxicity – Category 2  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
Asp. Tox. 1: Aspiration hazard – Category 1

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