

# Safety Data Sheet

acc. to OSHA HCS

Printing date 09/24/2024

Reviewed on 09/24/2024

## 1 Identification

- **Product identifier**
- **Trade name:** Cyclohexanone 99.8%, Laboratory Grade
- **Article number:** C9125
- **CAS Number:**  
108-94-1
- **EC number:**  
203-631-1
- **Index number:**  
606-010-00-7
- **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](mailto:shermann@aquasolutions.org)
- **Emergency telephone number:**  
Chemtec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 3      H226 Flammable liquid and vapor.



GHS06 Skull and crossbones

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



GHS07

Acute Toxicity - Oral 4      H302 Harmful if swallowed.

Skin Irritation 2      H315 Causes skin irritation.

Eye Irritation 2A      H319 Causes serious eye irritation.

- **Label elements**

- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**

GHS02   GHS06   GHS07

· **Signal word** *Danger*· **Hazard statements***Flammable liquid and vapor.**Harmful if swallowed.**Toxic in contact with skin.**Causes skin irritation.**Causes serious eye irritation.*· **Precautionary statements***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.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Wear protective gloves/protective clothing/eye protection/face protection.**If swallowed: Call a poison center/doctor if you feel unwell.**Rinse mouth.**Specific treatment (see on this label).**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**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.**In case of fire: Use CO<sub>2</sub>, 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 = 2**Reactivity = 0*· **HMIS-ratings (scale 0 - 4)***Health = 2**Fire = 2**Reactivity = 0*· **Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.

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· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
CAS: 108-94-1 Cyclohexanone 99.8%
- **Identification number(s)**
- **EC number:** 203-631-1
- **Index number:** 606-010-00-7

### 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:** 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:**  
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 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.

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- See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
  - **PAC-1:** 60 ppm
  - **PAC-2:** 830 ppm
  - **PAC-3:** 5000\* ppm

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **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 limit values that require monitoring at the workplace:**

**CAS: 108-94-1 Cyclohexanone 99.8%**

PEL Long-term value: 200 mg/m<sup>3</sup>, 50 ppm

REL Long-term value: 100 mg/m<sup>3</sup>, 25 ppm  
Skin

TLV Short-term value: 50 ppm  
Long-term value: 20 ppm  
Skin, BEI, A3

- **Ingredients with biological limit values:**

**CAS: 108-94-1 Cyclohexanone 99.8%**

BEI 80 mg/L  
LD50 Intraperitoneal: urine  
Time: end of shift at end of workweek  
LD50: 1,2-Cyclohexanediol (with hydrolysis, nonspecific, nonquantitative)

8 mg/L  
LD50 Intraperitoneal: urine  
Time: end of shift  
LD50: Cyclohexanol (with hydrolysis, nonspecific, nonquantitative)

- **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.

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Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **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.

· **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 to pale yellow

· **Odor:** Characteristic, acetone-like, mint-like

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

**Melting point/Melting range:** -47--26 °C (-52.6--14.8 °F)

**Boiling point/Boiling range:** 130-170 °C (266-338 °F)

· **Flash point:** 44 °C (111.2 °F)

· **Flammability:** Flammable.

· **Auto igniting:** 420 °C (788 °F)

· **Decomposition temperature:** Not determined.

· **Ignition temperature:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

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- |   |                 |
|---|-----------------|
| · <b>Explosion limits:</b>  |                 |
| Lower:  | 1.3 Vol %       |
| Upper:  | 9.4 Vol %       |
| · <b>Vapor pressure at 20 °C (68 °F):</b> <5.33289 hPa (<4 mm Hg)           |                 |
| · <b>Density at 20 °C (68 °F):</b> 0.95 g/cm <sup>3</sup> (7.92775 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> 150 g/l   |                 |
| · <b>Partition coefficient (n-octanol/water):</b> Not determined.           |                 |
| · <b>Viscosity:</b>   |                 |
| Dynamic:  | Not determined. |
| Kinematic:  | Not determined. |
| · <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:**

Oral	LD50	1,535 mg/kg (rat)
Dermal	LD50	948 mg/kg (rabbit)
Inhalative	LC50/4h	8,000 mg/l (rat)
Irritation of skin	Skin Corrosion/Irritation	(rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer) 3**
- **NTP (National Toxicology Program) Substance is not listed.**

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· **OSHA-Ca (Occupational Safety & Health Administration) Substance is not 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 (Assessment by list): 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.

## 14 Transport information

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>                                | <p style="margin: 0;">UN1915</p>   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>IMDG, IATA</b></li> </ul> | <p style="margin: 0;">Cyclohexanone<br/>CYCLOHEXANONE</p>  |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>                           | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>  | <p style="margin: 0;">3 Flammable liquids<br/>3</p>  |

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· **IMDG, IATA**

· **Class** 3 Flammable liquids  
 · **Label** 3

· **Packing group**  
 · **DOT, IMDG, IATA** III

· **Environmental hazards:**  
 · **Marine pollutant:** No

· **Special precautions for user** Warning: Flammable liquids  
 · **Hazard identification number (Kemler code):** 30  
 · **EMS Number:** F-E,S-D  
 · **Stowage Category** A

· **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: 60 L  
 On cargo aircraft only: 220 L  
 · **Hazardous substance:** 5000 lbs, 2270 kg

· **IMDG**

· **Limited quantities (LQ)** 5L  
 · **Excepted quantities (EQ)** Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":** UN 1915 CYCLOHEXANONE, 3, III

## 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):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is not listed.
- **TSCA (Toxic Substances Control Act):** ACTIVE
- **Hazardous Air Pollutants** Substance is not listed.
- **Proposition 65**
- **Chemicals known to cause cancer:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.
- **Carcinogenic categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value)** A3
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.

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· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02    GHS06    GHS07

· **Signal word** *Danger*

· **Hazard statements**

*Flammable liquid and vapor.*

*Harmful if swallowed.*

*Toxic in contact with skin.*

*Causes skin irritation.*

*Causes serious eye irritation.*

· **Precautionary statements**

*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.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

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

*If swallowed: Call a poison center/doctor if you feel unwell.*

*Rinse mouth.*

*Specific treatment (see on this label).*

*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*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.*

*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.*

· **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, 09-24-2024: updated hazard and DOT information. STN/CMC*

*09/24/2024 / 1.2*

· **Abbreviations and acronyms:**

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

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EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
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 3: Flammable liquids – Category 3  
Acute Toxicity - Oral 4: Acute toxicity – Category 4  
Acute Toxicity - Dermal 3: Acute toxicity – Category 3  
Skin Irritation 2: Skin corrosion/irritation – Category 2  
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

**\* Data compared to the previous version altered.**

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