

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/07/2021

Reviewed on 05/07/2021

1 Identification

- **Product identifier**
- **Trade name:** Titration Solvent 2:1
Chlorobenzene:Acetic ASTM D2896-15
- **Article number:** 9554
- **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

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

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



GHS02



GHS05



GHS07

- **Signal word** Danger
- **Hazard-determining components of labeling:**
Chlorobenzene
Acetic Acid

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- **Hazard statements**

Flammable liquid and vapor.
 Harmful if inhaled.
 Causes severe skin burns and eye damage.

- **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.
 Do not breathe dusts or mists.
 Wash thoroughly after handling.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/protective clothing/eye protection/face protection.
 If swallowed: Rinse mouth. 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.
 Immediately call a poison center/doctor.
 Specific treatment (see on this label).
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO2, powder or water spray.
 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)**



- **HMIS-ratings (scale 0 - 4)**

| | | |
|------------|---|----------------|
| HEALTH | 3 | Health = 3 |
| FIRE | 2 | Fire = 2 |
| REACTIVITY | 0 | Reactivity = 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 components:**

| | | |
|---------------|---------------|---------|
| CAS: 108-90-7 | Chlorobenzene | 67.769% |
|---------------|---------------|---------|

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CAS: 64-19-7 Acetic Acid

32.231%

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.

- **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. Then consult a doctor.

- **After swallowing:** Drink copious amounts of water and provide fresh air. 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.

- **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).

Use neutralizing agent.

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-1:**

CAS: 108-90-7 Chlorobenzene

10 ppm

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| | | |
|-----------------|---------------|---------|
| CAS: 64-19-7 | Acetic Acid | 5 ppm |
| · PAC-2: | | |
| CAS: 108-90-7 | Chlorobenzene | 150 ppm |
| CAS: 64-19-7 | Acetic Acid | 35 ppm |
| · PAC-3: | | |
| CAS: 108-90-7 | Chlorobenzene | 400 ppm |
| CAS: 64-19-7 | Acetic Acid | 250 ppm |

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
*Ensure good ventilation/exhaustion at the workplace.
 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:** *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 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.*

CAS: 64-19-7 Acetic Acid

| | |
|-----|---|
| PEL | Long-term value: 25 mg/m ³ , 10 ppm |
| REL | Short-term value: 37 mg/m ³ , 15 ppm Long-term value: 25 mg/m ³ , 10 ppm |
| TLV | Short-term value: 37 mg/m ³ , 15 ppm Long-term value: 25 mg/m ³ , 10 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.
 Avoid contact with the eyes.*

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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: | Vinegar |
| Odor threshold: | Not determined. |

· **pH-value:** Not determined.

· **Change in condition**

| | |
|-------------------------------------|-------------------|
| Melting point/Melting range: | Undetermined. |
| Boiling point/Boiling range: | 118 °C (244.4 °F) |

· **Flash point:** 40 °C (104 °F)

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

· **Ignition temperature:** 485 °C (905 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

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| | |
|---|--|
| · Danger of explosion: | Product is not explosive. However, formation of explosive air/vapor mixtures are possible. |
| · Explosion limits: | |
| Lower: | 1.3 Vol % |
| Upper: | 17 Vol % |
| · Vapor pressure at 20 °C (68 °F): | 16 hPa (12 mm Hg) |
| · Density at 20 °C (68 °F): | 1.0879 g/cm ³ (9.07853 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/water): | Not determined. |
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 32.2 % |
| VOC content: | 32.23 % |
| | 350.6 g/l / 2.93 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) | | |
| Dermal | LD50 | 3,289 mg/kg (rabbit) |
| Inhalative | LC50/4h | 16.2 mg/l |
| CAS: 108-90-7 Chlorobenzene | | |
| Inhalative | LC50/4h | 11 mg/l (ATE) |

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| | | |
|---------------------------------|------|-------------------|
| CAS: 64-19-7 Acetic Acid | | |
| Dermal | LD50 | 1,100 mg/kg (ATE) |

- **Primary irritant effect:**

- **on the skin:** Caustic effect on skin and mucous membranes.

- **on the eye:**

- Strong caustic effect.

- Strong irritant with the danger of severe eye injury.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

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

- Harmful

- Corrosive

- Irritant

- Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- **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.

- Must not reach bodies of water or drainage ditch undiluted or unneutralized.

- 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.

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

| | |
|--|---|
| <ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA | UN2924 |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG, IATA | Flammable liquids, corrosive, n.o.s. (Chlorobenzene, Acetic acid, glacial) FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CHLOROBENZENE, ACETIC ACID, GLACIAL) |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | <div style="display: flex; justify-content: space-around; align-items: center;">   </div> |
| <ul style="list-style-type: none"> · Class · Label | 3 Flammable liquids 3, 8 |
| <ul style="list-style-type: none"> · IMDG | <div style="display: flex; justify-content: space-around; align-items: center;">   </div> |
| <ul style="list-style-type: none"> · Class · Label | 3 Flammable liquids 3/8 |
| <ul style="list-style-type: none"> · IATA | <div style="display: flex; justify-content: space-around; align-items: center;">   </div> |
| <ul style="list-style-type: none"> · Class · Label | 3 Flammable liquids 3 (8) |
| <ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA | II |
| <ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: | No |
| <ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Stowage Code | Warning: Flammable liquids 3 F-E,S-C Liquid halogenated hydrocarbons, acids B SW2 Clear of living quarters. |

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- | | |
|--|--|
| <ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | <p style="text-align: center;"><i>Not applicable.</i></p> |
| <ul style="list-style-type: none"> · UN "Model Regulation": | <p style="text-align: center;">UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CHLORO BENZENE, ACETIC ACID, GLACIAL), 3 (8), II</p> |

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):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**

CAS: 108-90-7 Chlorobenzene

- **TSCA (Toxic Substances Control Act):**

Chlorobenzene

ACTIVE

Acetic Acid

ACTIVE

- **Hazardous Air Pollutants**

CAS: 108-90-7 Chlorobenzene

- **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: 108-90-7 Chlorobenzene

D

- **TLV (Threshold Limit Value)**

CAS: 108-90-7 Chlorobenzene

A3

- **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

GHS05

GHS07

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- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
Chlorobenzene
Acetic Acid
- **Hazard statements**
Flammable liquid and vapor.
Harmful if inhaled.
Causes severe skin burns and eye damage.
- **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.
Do not breathe dusts or mists.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. 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.
Immediately call a poison center/doctor.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
In case of fire: Use for extinction: CO2, powder or water spray.
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 05-07-2021: updated hazard information. STN
Creation date for SDS 07-10-2014. STN
05/07/2021 / 1.0
- **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

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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. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1

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

US