

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/08/2018

Reviewed on 01/08/2018

1 Identification

- **Product identifier**
- **Trade name:** 2,2,4-Trimethylpentane (Iso-Octane), Laboratory Grade
- **Article number:** T8264
- **CAS Number:**
540-84-1
- **EC number:**
208-759-1
- **Index number:**
601-009-00-8
- **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:**
Chemtec: 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

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 substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger

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- **Hazard statements**

Highly flammable liquid and vapor.
 Causes skin irritation.
 May cause drowsiness or dizziness.
 May be fatal if swallowed and enters airways.

- **Precautionary statements**

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.
 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.
 Call a poison center/doctor if you feel unwell.
 Specific treatment (see on this label).
 Do NOT induce vomiting.
 If skin irritation occurs: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 In case of fire: Use for extinction: CO₂, 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)**



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

HEALTH	2	Health = 2
FIRE	3	Fire = 3
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: Substances**

- **CAS No. Description**

540-84-1 2,2,4-Trimethylpentane (Iso-Octane)

- **Identification number(s)**

- **EC number:** 208-759-1

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· **Index number:** 601-009-00-8

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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:**
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** 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-1:** 230 ppm
- **PAC-2:** 830 ppm
- **PAC-3:** 5000* 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.

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Protect against electrostatic charges.

- **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:**

CAS: 540-84-1 2,2,4-Trimethylpentane (Iso-Octane)

PEL	Long-term value: 2350 mg/m ³ , 500 ppm n-Octane only
TLV	Long-term value: 1401 mg/m ³ , 300 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 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.

· **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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· **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:	Colorless
· Odor:	Sweetish
· Odor threshold:	Not determined.

· **pH-value:** Not determined.· **Change in condition**

· Melting point/Melting range:	-107 °C (-160.6 °F)
· Boiling point/Boiling range:	98-99 °C (208.4-210.2 °F)

· **Flash point:** -12 °C (10.4 °F)· **Flammability (solid, gaseous):** Not applicable.· **Ignition temperature:** 410 °C (770 °F)· **Decomposition temperature:** Not determined.· **Auto igniting:** Not determined.· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.· **Explosion limits:**

· Lower:	1.1 Vol %
· Upper:	6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 15 hPa (11.3 mm Hg)· **Density at 20 °C (68 °F):** 0.692 g/cm³ (5.77474 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 at 20 °C (68 °F):	0.51 mPas
· Kinematic:	Not determined.

· **Other information** No further relevant information available.

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

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

14 Transport information

- **UN-Number**
- **DOT, IMDG, IATA** UN1262

- **UN proper shipping name**
- **DOT** Octanes
- **IMDG, IATA** OCTANES

- **Transport hazard class(es)**
- **DOT**



- **Class** 3 Flammable liquids
- **Label** 3

- **IMDG, IATA**



- **Class** 3 Flammable liquids
- **Label** 3

- **Packing group**
- **DOT, IMDG, IATA** II

- **Environmental hazards:** Environmentally hazardous substance, liquid
- **Marine pollutant:** No

- **Special precautions for user** Warning: Flammable liquids
- **Danger code (Kemler):** 33
- **EMS Number:** 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: 5 L
On cargo aircraft only: 60 L
- **Hazardous substance:** 1000 lbs, 454 kg

- **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

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UN "Model Regulation":	UN 1262 OCTANES, 3, II
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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **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):

2,2,4-Trimethylpentane (Iso-Octane)

- **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) II**
- **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



- **Signal word** *Danger*
- **Hazard statements**
 - Highly flammable liquid and vapor.*
 - Causes skin irritation.*
 - May cause drowsiness or dizziness.*
 - May be fatal if swallowed and enters airways.*
- **Precautionary statements**
 - 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.*
 - 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.*
 - Call a poison center/doctor if you feel unwell.*
 - Specific treatment (see on this label).*
 - Do NOT induce vomiting.*
 - If skin irritation occurs: Get medical advice/attention.*
 - Take off contaminated clothing and wash it before reuse.*

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In case of fire: Use for extinction: CO2, 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**

Creation date for SDS 02-14-2014. STN

01-08-2018: review SDS for accuracy. STN

01/08/2018 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

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

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

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

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Asp. Tox. 1: Aspiration hazard – Category 1