

## Safety Data Sheet

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### 1. Product and company identification

Product name : AQUALYTE Water Standard 0.02  
Part No. : D312143-1  
Name of manufacturer : HIRANUMA Co., Ltd.  
Address : 1739 Motoyoshida, Mito, Ibaraki, 310-0836, JAPAN  
Name of section : Quality assurance department  
Telephone number : +81-29-247-7343  
Facsimile number : +81-29-240-0381  
Mail address : info-f@hiranuma.com

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### 2. Summary of danger and Hazard

#### GHS classification

##### Physical and chemical hazard

Flammable liquids : Category 2  
Pyrophoric liquids : Out of category  
Corrosive to metals  
: Out of category

##### Human health hazard

Acute toxicity (oral)  
: Category 4  
Acute toxicity (dermal)  
: Out of category  
Acute toxicity (inhalation: vapors)  
: Out of category

Skin corrosion/irritation  
: Out of category

Serious eye damage/eye irritation  
: Category 2B

Specific target organ systemic toxicity (single exposure)  
: Category 3 (anesthetic action)

Aspiration hazard : Category 1

##### Environmental hazard

Hazardous to the aquatic environment-acute hazard  
: Category 1

Hazardous to the aquatic environment—chronic hazard

: Category 1

Pictogram or symbol



Signal word : Danger

Hazard statement : Highly flammable liquid and vapor  
Harmful if swallowed  
Causes eye irritation  
May cause drowsiness and dizziness  
May be fatal if swallowed and enters airways  
Very toxic to aquatic life  
Very toxic to aquatic life with long lasting effects

Cautions

Safety measurements

: Keep away from ignition sources such as heat, sparks, or open flame.  
Keep containers tightly closed.  
Ground container and receiving equipment in case of transport and stirring.  
Use explosion-proof apparatus.  
Use only non-sparking tools.  
Avoid breathing dust, mist, and vapor.  
Use only in a well-ventilated area.  
Avoid release to the environment.  
Do not eat, drink or smoke when using this product.  
Wear appropriate protective gloves, glasses, clothing, face shield, or mask.  
Wash hands thoroughly after handling.

First-aid measures : If inhaled : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical treatment if you feel unwell.  
If swallowed: Rinse mouth, do not induce vomiting. Immediately get medical treatment.  
If in eyes : Rinse cautiously with water for several minutes. Get medical treatment.  
If on skin : Remove contaminated clothing and the substance.

- Get medical treatment, if you feel unwell.  
Wash hands thoroughly after handling.  
Collect leakage
- Storage : Tightly container closed and store in a well-ventilated area.  
Store locked up.
- Disposal : Dispose of contents and containers appropriately in accordance with related regulations.

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3. Composition/Information on ingredients

Substance/Mixture

: Mixture

Chemical name or commercial name

: Methylcyclohexane solution containing 0.003% water

Ingredients and composition

: Methylcyclohexane 99.997%

Chemical formula

: Methylcyclohexane  $\text{CH}_3\text{C}_6\text{H}_{11}$

CAS No.

: Methylcyclohexane 108-87-2

Dangerous and hazardous ingredients

: Methylcyclohexane

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4. First aid measures

Inhalation

: Remove the victim to fresh air, and make him blow his nose and gargle.

Skin contact

: Wash the affected areas under running water.

Eye contact

: Wash the affected areas under running water for at least 15 minutes. Get medical treatment.

Ingestion

: Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.

Anticipated acute and delayed symptoms

: If inhaled, causes state of dizziness, lethargy.

Protection for first aid person

: Rescuers should wear proper protective equipment like rubber gloves, goggles.

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5. Fire fighting measures

Extinguishing media

: Dry chemical powder, carbon dioxide, dry sand, foam

Prohibited extinguishing media

: Water spray

Particular fire fighting

- : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.
- Fight fire from windward.
- Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Foam extinguisher is effective for a large scale fire.

Protection for firefighters

- : Firefighters should wear protective equipment.

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6. Accidental release measures

Cautions for personnel

- : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Cautions for environment

- : Attention should be given to avoid damage to the environment by flowing of spillage to rivers.

- Removal measure : Absorb spill with inert material (e.g., diatomaceous earth, sand) and flush spillage area with copious amounts of water.

Prevention of second accident

- : Remove nearby sources of ignition and prepare extinguishing media.

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7. Cautions of handling and storage

Handling

Engineering measures

- : Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Pay attention to fire.

Cautions for safety handling

- : Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas.

Storage

Adequate storage condition

- : Store in a dark, cool place and tightly closed.

Safety adequate container materials

: Glass, fluorine resin, stainless steel  
Do not use polyvinyl chloride resin, polystyrene, polyethylene  
etc.

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8. Exposure control/Personal protection

Engineering measures

: Use with an enclosed system or a local exhaust ventilation.

Control parameters

ACGIH(2015) : 400ppm(as methylcyclohexane)(TLV-TWA)

Protective equipment

Respiration protective equipment

: If necessary, wear chemical cartridge respirator with an organic  
vapor cartage

Hands protective equipment

: Organic solvents resistant gloves

Eyes protective equipment

: Safety goggles

Skin and body protective equipment

: Protective clothing, protective boots

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9. Physical and chemical properties

(as methylcyclohexane)

Appearance : Liquid

Color : Colorless

Odor : Aromatic odor

pH : Neutral

Boiling point : 100.9 °C

Melting point : -126.6 °C

Flash point : -6 °C

Auto-ignition point : 258 °C

Explosion characteristics

Explosion limit : upper : 6.7vol% lower : 1.2vol%

Vapor pressure : 48hPa (20 °C)

Vapor density : 3.4

Density : 0.769g/cm<sup>3</sup> (20 °C)

Solubility

Solubility in solvents

: Water ; 0.01%(20 °C)

Soluble in many kinds of organic solvents

log Pow : 3.61  
Other data : Viscosity : 0.685cP(20 °C)

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#### 10. Stability and reactivity

Stability : Stable under normal conditions.  
Reactivity : May react with oxidizing substances.  
Incompatible conditions : Light, heat  
Incompatible materials : Oxidizing substances  
Hazardous decomposition products : Carbon monoxide

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#### 11. Toxicological information

Acute toxicity : Harmful if swallowed(category 4)  
Dermal : Out of category  
Inhalation(vapor) : Out of category  
Inhalation (dust, mist) : Not possible to classify because of insufficient data.  
(as methycyclohexane)  
mouse oral LD50=1200mg/kg  
rabbit skin LD50>86700mg/kg  
There is the description that death is not observed with 7500-10000ppm on mouse but observed with 2-hour exposure to 10000-12,500ppm (4-hour equivalent assuming 10000ppm: 28.399mg/L). It was judged that there is no death observed below 28.399mg/L (equivalent of 7082ppm), and acute toxicity (inhalation:vapor) was classified into out of category.

#### Skin corrosion/irritation

: Out of category  
It was set as out of category from description that the skin was stimulated without concrete case report, and description that mild irritating was acknowledged in the test applied to the skin of the rabbit although it was exposure for 24 hours.

#### Serious eye damage/eye irritation

: Causes eye irritation(category 2B)  
Based on the description that mild irritant property was acknowledged in the test applied to the eyes of the rabbits, and on the descriptions that it stimulated the eyes, we categorized it as category 2B although there were no concrete

case reports.

Respiratory sensitization or Skin sensitization

: Respiratory sensitization : Not possible to classify because of insufficient data.

Skin sensitization : Not possible to classify because of insufficient data.

Mutagenicity : Not possible to classify because of insufficient data.

Carcinogenic effects : Not possible to classify because of insufficient data

Effects on the reproductive system

: Not possible to classify because of insufficient data.

Specific target organ systemic toxicity single exposure

: May cause drowsiness and dizziness(category 3)

Because of descriptions referring to confirmation of abdominal positions in inhalation exposure tests with mice, and of a description referring to that anesthetic actions were confirmed in an inhalation exposure test using rabbits, and of descriptions referring to that central nervous systems were affected, it was judged that there were anesthetic actions, and determined as category 3 (anesthetic actions).

Specific target organ systemic toxicity repeated exposure

: Not possible to classify because of insufficient data.

Aspiration hazard : May be fatal if swallowed and enters airways(category 1)

Since it is a hydrocarbon and the dynamic viscosity is about 0.95 mm<sup>2</sup>/s at 20 °C, and the dynamic viscosity at 40 °C is considered to be less than 20.5 mm<sup>2</sup>/s, it was classified into category 1.

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## 12. Ecological information

Ecotoxicity

Fish toxicity : Very toxic to aquatic life(category 1)

Very toxic to aquatic life with long lasting effects(category 1)  
(as methylcyclohexane)

Daphnia magna EC50=0.33mg/L/48H

Pseudokirchneriella subcapitata NOEC=0.067mg/L/72H

Persistence and degradability

: Non-biodegradability

0% by BOD

Bioaccumulative potential

: Low or no bioaccumulative potential in fish or shells

Concentration Carp 95–321 fold(0.1mg/L)  
Carp 134–237 fold(0.01mg/L)

Mobility in soil : Not available

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13. Disposal consideration

Residual disposal : Burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.

Containers : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

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14. Transport information

UN class : Class 3(Flammable liquids) P. G. II

UN number : 2296

Marine regulation information

UN No. : 2296

Proper shipping name

: METHYLCYCLOHEXANE

Class : 3

Sub risk : -

Packing group : II

Marine pollutant : P

Aviation regulation information

UN No. : 2296

Proper shipping name

: Methylcyclohexane

Class : 3

Sub risk : -

Packing group : II

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15. Regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

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16. Other information

References

- 1) Company data on file (SDS provided by manufacturer)
- 2) NITE: National Institute of Technology and Evaluation



\*The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet(SDS) is prepared based on JIS Z7253, and it has the same required elements on the Material Safety Data Sheet(MSDS) which is prepared based on JIS Z7250:2010.