

Safety Data Sheet

1. Product and company identification

Product name : AQUALYTE Water Standard 0.1
Part No. : D312138-1
Name of manufacturer : HIRANUMA Co., Ltd.
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2. Summary of danger and Hazard

GHS classification

Physical and chemical hazard

Flammable liquids : Category 3
Pyrophoric liquids : Out of category

Human health hazard

Acute toxicity (oral)
: Out of category
Acute toxicity (inhalation:dust, mists)
: Out of category
Skin corrosion/Irritation
: Category 2
Serious eye damage/eye irritation
: Category 2B
Specific target organ systemic toxicity (single exposure)
: Category 3 (respiratory tract irritation) , Category 3
(anesthetic action)
Specific target organ systemic toxicity (repeated exposure)
: Category 1
Aspiration hazard : Category 1

Environmental hazard

Hazardous to the aquatic environment-acute hazard
: Category 2
Hazardous to the aquatic environment-chronic hazard

: Category 2

Pictogram or symbol



Signal word : Danger

Hazard statement : Flammable liquid and vapor
Causes skin irritation
Causes eye irritation
May cause respiratory irritation
May cause drowsiness and dizziness
Causes damage to organs (central nervous system, respiratory organs) through prolonged or repeated exposure
May be fatal if swallowed and enters airways
Toxic to aquatic life
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.
Do not breathe 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 protective equipment thoroughly after use.
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.
Get medical treatment, if you feel unwell.
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.

3. Composition/Information on ingredients

Substance/Mixture

: Substance

Chemical name or commercial name

: Mesitylene

Synonyms

: 1,3,5-Trimethylbenzene

Ingredients and composition

: Mesitylene min.98%

Chemical formula

: $C_6H_3(CH_3)_3$

CAS No.

: 108-67-8

TSCA Inventory

: Registered

EINECS No.

: 2036044

Dangerous and hazardous ingredients

: Mesitylene

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. If necessary, 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

: Inhalation causes confusion, cough, dizziness, lethargy, headache, throat ache, vomiting.

Protection for first aid person

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

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.

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

: Wear breathing apparatus.

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 discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

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.

7. Cautions of handling and storage

Handling

Engineering measures

- : Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited.
- Ventilate well at working places.

Cautions for safety handling

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

Cautions

- : Do not allow contact with oxidizing substances.

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 vinyl chloride resin, acrylic resin, polystyrene etc.

8. Exposure control/Personal protection

Engineering measures

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

Control parameters

- ACGIH(2015) : 25ppm(TLV-TWA)

Protective equipment

Respiration protective equipment

- : Chemical cartridge respirator with an organic vapor cartage or airline respirator

Hands protective equipment

- : Impervious protective gloves

Eyes protective equipment

- : Safety goggles

Skin and body protective equipment

- : Protective clothing, protective boots

9. Physical and chemical properties

- Appearance : Liquid
- Color : Colorless
- Odor : Aromatic odor
- Boiling point : 164.72 °C
- Melting point : -44.72 °C
- Flash point : 43 °C
- Auto-ignition point : 550 °C

Explosion characteristics

Explosion limit	: upper : 6.1vol% lower : 0.9vol%
Vapor pressure	: 2hPa (20 °C)
Vapor density	: 4.1
Density	: 0.865g/cm ³ (20 °C)
Solubility	
Solubility in solvents	
	: Water ; Insoluble
	Organic solvents; Readily soluble in acetone, methanol, benzene.
log Pow	: 3.4
Other data	: Viscosity : 1.154cP(25 °C)

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

11. Toxicological information

Acute toxicity	: Oral : Out of category
	Dermal : Not possible to classify because of insufficient data.
	Inhalation(vapor) : Not possible to classify because of insufficient data.
	Inhalation (dust, mist) : Out of category
	rat oral LD50=5000mg/kg
	rat inhalation LC50=24mg/L/4H(mist)
Skin corrosion/irritation	: Causes skin irritation(category 2)
	In rabbit skin irritation test (OECD TG404 compliant), rabbits showed slight redness from 1 hour after application and moderate to severe redness after 144 hours. Based on the data, it was classified into category 2.
Serious eye damage/eye irritation	: Causes eye irritation(category 2B)
	Following exposure of rabbit eyes to the substance 500mg for 24 hours, mild irritation was observed. Thus, it was classified

into category 2B.

Respiratory sensitization or Skin sensitization

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

Regarding human health effects, nervousness, tension, anxiety and bronchial asthma were observed in 27 factory workers who were occupationally exposed to a product containing 30% mesitylene (this substance) and 50% 1,2,4-trimethylbenzene for several years (hydrocarbon concentration of the vapor: 10–60 ppm). However, the effects cannot be attributed to mesitylene because the other isomer is mixed. Thus, the classification is not possible because of insufficient data.

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

Mutagenicity

: Not possible to classify because of insufficient data.

As for in vivo, there are negative data on micronucleus test in mouse bone marrow cells, and positive data only at high doses on sister chromatid exchange test in mouse bone marrow cells. As for in vitro, there are negative data on reverse mutation test in bacteria.

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 respiratory irritation(category 3) · May cause drowsiness and dizziness(category 3)

Human studies have shown that inhalation exposure causes headache, dizziness, lethargy, incoordination, and vomiting, and ingestion causes aspiration into the lungs resulting in chemical pneumonia. Animal studies have shown that inhalation exposure in mice causes loss of righting reflex and central nervous system depression, and inhalation exposure in rats revealed EC50 for Rota-rod test is 963 ppm (4.73 mg/L), EC50 for analgesia in the hot-plate test is 1,212 ppm (5.96 mg/L). The effects on central nervous system in humans and experimental animals are symptoms which generally fall under anesthetic action. Thus, it was classified into category 3 (respiratory tract irritation, anesthetic action).

Specific target organ systemic toxicity repeated exposure

- : Cause damage to organs (central nervous system, respiratory organs) through prolonged or repeated exposure(category 1)
In humans, effects on central nervous system (nervousness, tension, anxiety) and respiratory organs (asthmatic bronchitis) were observed in many of 27 workers who were exposed to the solvent containing 30% mesitylene (this substance) and 50% 1,2,4-trimethylbenzene for several years (hydrocarbon concentration: 10–60 ppm). As with the case of trimethylbenzene (mixture of isomers), it was classified into category 1 (central nervous system, respiratory organs).
- Aspiration hazard : May be fatal if swallowed and enters airways(category 1)
Since the substance is a hydrocarbon with a kinematic viscosity of 8.9 mm²/s (density: 0.8652 g/cm³ (20 °C)), it was classified into category 1.

12. Ecological information

Ecotoxicity

- Fish toxicity : Toxic to aquatic life(category 2)
Toxic to aquatic life with long lasting effects(category 2)
Crustacea (daphnia magna) LC50=6000 μg/L/48H

Persistence and degradability

- : Non-biodegradability
0% by BOD

Bioaccumulative potential

- : Low or no bioconcentration or bioaccumulation potential in fish or shells.
Concentration Carp 23–342 fold(150 μg/L)
Carp 42–328 fold(15 μg/L)

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.

14. Transport information

- UN class : Class 3(Flammable liquids) P. G. III
UN number : 2325

Marine regulation information

UN No. : 2325
Proper shipping name : 1,3,5-TRIMETHYLBENZENE
Class : 3
Sub risk : -
Packing group : III
Marine pollutant : P

Aviation regulation information

UN No. : 2325
Proper shipping name : 1,3,5-Trimethylbenzene
Class : 3
Sub risk : -
Packing group : III

15. Regulatory information

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

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.