
Safety Data Sheet**1. Chemical product and company identification****Product name** : 2,2,4-Trimethylpentane**SDS code** : F4-19**Company/undertaking identification** :

HAYASHI PURE CHEMICAL IND.,LTD.

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URL : <https://www.hpc-j.co.jp/>**Emergency number** : 06-6910-7305**Recommended use** : For research and experimental use only.**Restrictions on use** : Do not use on a human body or for animal medicines, foods, household products, cosmetics, etc.**2. Hazards identification****GHS classification**

| | | | |
|--------------------------------------------------|--------------------------------------------------------------------------|---------------------------------|-----------------------------|
| Physical hazards | Explosives | classification not possible | |
| | Flammable gases | No classification | |
| | Aerosol | classification not possible | |
| | Oxidizing gases | No classification | |
| | Gases under pressure | No classification | |
| | Flammable liquids | Category 2 | |
| | Flammable solids | No classification | |
| | Self-reactive substances and mixtures | classification not possible | |
| | Pyrophoric liquids | classification not possible | |
| | Pyrophoric solids | No classification | |
| | Self-heating substances and mixtures | classification not possible | |
| | Substances and mixtures which in contact with water emit flammable gases | classification not possible | |
| | Oxidizing liquids | classification not possible | |
| | Oxidizing solids | No classification | |
| | Organic peroxides | classification not possible | |
| | Corrosive to metals | classification not possible | |
| | Desensitized explosives | classification not possible | |
| | Health hazards | Acute toxicity (oral) | classification not possible |
| | | Acute toxicity (dermal) | classification not possible |
| | | Acute toxicity (inhalation:gas) | classification not possible |
| Acute toxicity (inhalation:vapors) | | classification not possible | |
| Acute toxicity (inhalation:dust/mist) | | classification not possible | |
| Skin corrosion/irritation | | classification not possible | |
| Serious eye damage/eye irritation | | classification not possible | |
| Respiratory sensitization | | classification not possible | |
| Skin sensitization | | classification not possible | |
| Germ cell mutagenicity | | classification not possible | |
| Carcinogenicity | classification not possible | | |
| Reproductive toxicity | classification not possible | | |
| Specific target organ toxicity (single exposure) | classification not possible | | |

| | | |
|-----------------------|-----------------------------------------------------------|-----------------------------|
| Environmental hazards | Specific target organ toxicity (repeated exposure) | classification not possible |
| | Aspiration hazard | classification not possible |
| | Hazardous to the aquatic environment, short-term (acute) | classification not possible |
| | Hazardous to the aquatic environment, long-term (chronic) | classification not possible |
| | Hazardous to the ozone layer | classification not possible |

Hazard pictograms (GHS JP)



GHS02

Signal word (GHS JP) : Danger
 Hazard statements (GHS JP) : Highly flammable liquid and vapor (H225)

Precautionary statements (GHS JP)

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210)
 Keep container tightly closed. (P233)
 Ground and bond container and receiving equipment. (P240)
 Use explosion-proof electrical/ventilating/lighting equipment. (P241)
 Use only non-sparking tools. (P242)
 Take action to prevent static discharges. (P243)
 Wear protective gloves/protective clothing/eye protection/face protection. (P280)

Response : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. (P303+P361+P353)
 In case of fire: Use specify appropriate media to extinguish. (P370+P378)

Storage : Store in a well-ventilated place. Keep cool. (P403+P235)

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)

3. Composition/information on ingredients

Distinction of substance or mixture : Substance
 Synonyms : Isooctane, Isobutyltrimethylmethane

| Name | Concentration or Concentration range | Formula | Kanpo number | | CAS RN |
|------------------------|--------------------------------------|---------|--------------|-----------------------------|----------|
| | | | CSCL no | ISHL no | |
| 2,2,4-Trimethylpentane | ≥99.0%, ≤100% | C8H18 | (2)-8 | Existing Chemical Substance | 540-84-1 |

The above concentration or concentration range are not product specification.
 All percentages listed in the above concentration or concentration range are wt%, unless otherwise specified.

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
 Get immediate medical advice/attention.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing.
 Gently wash with plenty of soap and water.
 Get immediate medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Get immediate medical advice/attention.

- First-aid measures after ingestion : Do NOT induce vomiting.
Rinse mouth.
Get immediate medical advice/attention.

5. Fire fighting measures

- Suitable extinguishing media : Water spray, Foam, Dry powder, Carbon dioxide, Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.
Fire hazard : Extremely flammable liquid and vapor.
Explosion hazard : Danger of the steam explosion in indoor, outdoor, sewer.
May induce explosion of containers by heating.
Hazardous decomposition products in case of fire : In case of fire, product may produce irritative or toxic fumes/gases.
Firefighting instructions : If ignited, for the initial fire-fighting, cut off combustion sources, extinguish fire at a stroke using appropriate fire-extinguishers.
In the case of peripheral fire, quickly remove movable containers to safe places.
If unable to be moved containers, sprinkle water to containers and surrounding equipment, etc. to cool.
Even after extinguishing fire, thoroughly cool containers by using plenty of water.
Protection during firefighting : Wear appropriate fire-resistant clothing including self contained-compressed air breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Before entering, ventilate the area.
Do not let unauthorized persons come close to the area.
Immediately place the leakage area in isolation, with taking proper distances for all directions.
Wear appropriate personal protective devices to prevent inhalation and contact with eye, skin, and clothing, and never attempt to work on the lee.

Environmental precautions

- Environmental precautions : Avoid release to the environment.
Prevent entry to sewers and public waters.

Methods and Equipment for Containment and Cleaning up

- Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it.
Collect leaking and spilled liquid in sealable containers as far as possible.
Wash out the spilled area with large amounts of water.

7. Handling and storage

Handling

- Technical measures : Work with appropriate personal protective equipment to prevent inhalation or contact to eyes, skin, and clothing.
Handle with care to prevent leakage, overflowing, or scattering, minimize generation of mist or vapor, and thoroughly ventilate.
Precautions for safe handling : Do not eat, drink or smoke when using this product.
Thoroughly wash your hands and gargle after handling.
Ensure good ventilation of the work station.
Do not contact, breathe or swallow.
Take precautionary measures against static discharge.
Use explosion-proof equipment.
Prevents handling of incompatible substances or mixtures : Avoid prolonged or repeated exposure.

Storage

- Storage conditions : Store locked up.
Store in a well-ventilated place, away from direct sunlight. Keep container tightly closed and keep away from fire and heat sources.
- Material used in packaging/containers : Light shielding airtight container.
- Technical measures : Comply with applicable regulations.
- Storage temperature : Cool and dark place

8. Exposure controls / Personal protection equipment

| Exposure limit values | |
|-------------------------|---------------------|
| 2,2,4-Trimethylpentane | |
| Exposure limits (ACGIH) | TWA 300 ppm, STEL - |

- Appropriate engineering controls : Cover up tightly the generation source at the handling place or install local exhaust equipment or overall ventilation equipment. Install safety showers and eye-fountains near a handling place. Clearly indicate the location.

Protective equipment

- Respiratory protection : Gas mask for organic gases
- Hand protection : Impervious protective gloves
- Eye protection : Protective glasses (general glasses, glasses with side-shields, goggles)
- Skin and body protection : Impervious aprons, Impervious work clothing, Impervious long boots

9. Physical and chemical properties

- Physical state : Liquid
- Appearance : Liquid
- Color : colorless transparent
- Odor : characteristic odor
- pH : No data available
- Melting point : -107.5 °C
- Freezing point : No data available
- Boiling point : 99.3 °C
- Flash point : 4.5 °C (Cleveland open cup)
- Auto-ignition temperature : 417 °C
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : 5.1 kPa (20°C)
- Relative density : No data available
- Density : 0.69 g/cm³ (20°C)
- Relative gas density : 3.9 (air=1)
- Solubility : Insoluble in water.
- Partition coefficient n-octanol/water (Log Pow) : No data available
- Explosive limits (vol %) : 1.1 – 6 vol % (in air)
- Viscosity, kinematic : No data available
- Particle characteristics : No data available

10. Stability and reactivity

- Reactivity : No data available
- Chemical stability : Stable under normal handling conditions.
- Possibility of hazardous reactions : Reacts with oxidizing agents to pose a risk of ignition and explosion.
- Conditions to avoid : Sunlight, heat. Ignition sources such as spark, flame and static electricity. Contact with oxidizing agents.
- Incompatible materials : Oxidizing agents
- Hazardous decomposition products : No data available

11. Toxicological information

The information in this section is based on the "GHS Classification Results" by NITE.

| 2,2,4-Trimethylpentane | |
|---------------------------------------|-------------------|
| Acute toxicity (oral) | No data available |
| Acute toxicity (dermal) | No data available |
| Acute toxicity (gas) | No data available |
| Acute toxicity (vapour) | No data available |
| Acute toxicity (inhalation:dust/mist) | No data available |
| Skin corrosion/irritation | No data available |
| Serious eye damage/irritation | No data available |
| Respiratory sensitization | No data available |
| Skin sensitization | No data available |
| Germ cell mutagenicity | No data available |
| Carcinogenicity | No data available |
| Reproductive toxicity | No data available |
| STOT-single exposure | No data available |
| STOT-repeated exposure | No data available |
| Aspiration hazard | No data available |

12. Ecological information

The information in this section is based on the "GHS Classification Results" by NITE.

| 2,2,4-Trimethylpentane | |
|---------------------------------------------------|-------------------|
| Hazardous to Aquatic Environment - Acute Hazard | No data available |
| Hazardous to Aquatic Environment - Chronic Hazard | No data available |
| Persistence and degradability | No data available |
| Bioaccumulative potential | No data available |
| Mobility in soil | No data available |
| Hazardous to the ozone layer | No data available |

13. Disposal considerations

- Ecology - waste materials : With the detail information of the waste, subcontract its disposal to a waste disposer authorized by a Prefectural Governor.
- Contaminated container and packaging : Empty the packaging completely prior to disposal.
Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

14. Transport information

International Regulations

Transport by sea(IMDG)

- UN-No. (IMDG) : 1262
- Proper Shipping Name (IMDG) : OCTANES
- Packing group (IMDG) : II
- Transport hazard class(es) (IMDG) : 3
- Hazard labels (IMDG) : 3
- Class (IMDG) : 3
- Limited quantities (IMDG) : 1 L
- Excepted quantities (IMDG) : E2
- Packing instructions (IMDG) : P001
- IBC packing instructions (IMDG) : IBC02
- Tank instructions (IMDG) : T4
- Tank special provisions (IMDG) : TP2
- Stowage category (IMDG) : B
- Properties and observations (IMDG) : Colourless liquids. Explosive limits: 1% to 6.5% ISOCTANE:
flashpoint-12°C c.c. n-OCTANE: flashpoint 13°C c.c. Immiscible with water.
- MFAG-No : 128

Air transport(IATA)

| | |
|----------------------------------------------|-----------|
| UN-No. (IATA) | : 1262 |
| Proper Shipping Name (IATA) | : Octanes |
| Packing group (IATA) | : II |
| Transport hazard class(es) (IATA) | : 3 |
| Hazard labels (IATA) | : 3 |
| Class (IATA) | : 3 |
| PCA Excepted quantities (IATA) | : E2 |
| PCA Limited quantities (IATA) | : Y341 |
| PCA limited quantity max net quantity (IATA) | : 1L |
| PCA packing instructions (IATA) | : 353 |
| PCA max net quantity (IATA) | : 5L |
| CAO packing instructions (IATA) | : 364 |
| CAO max net quantity (IATA) | : 60L |
| ERG code (IATA) | : 3H |

Marine pollutant : Applicable

Regulations in Japan

| | |
|-------------------------------|-----------------------------------------------------------|
| Regulatory information by sea | : Conform to the provisions of the Ship Safety Law. |
| Regulatory information by air | : Conform to the provisions of the Civil Aeronautics Law. |
| MFAG-No | : 128 |

Special transport precautions : When transporting, load containers so that they do not tip over, damage, drop or collapse. Make sure there is no leak in containers.

15. Regulatory information**National law**

| | |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Industrial Safety and Health Law | : Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18 Item 1, Item 2, Attached Table No.9) Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Item 1, Item 2, Attached Table No.9) Octane (Ordinance number : 115) Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1 Item 4) |
| Japanese Poisonous and Deleterious Substances Control Law | : Not applicable |
| Fire Service Law | : Group 4 - Flammable liquids - 1st Class petroleums - Insoluble (Law Art.2 Para.7, Attached Table 1, Group 4) |
| Air Pollution Control Law | : Volatile organic compounds (Article 2, Paragraph 4 of the Act) (2002 VOC emission survey report) |
| Law Relating to Prevention of Marine Pollution and Maritime Disasters | : Marine Pollutants for Non-Bulk Shipment (Ordinance Art.30-2-3, MLIT Notification) |
| Foreign Exchange and Foreign Trade Control Act | : Export Trade Control Ordinance appendix 1-16 |
| Ship Safety Act | : Flammable liquids (Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations) |
| Civil Aeronautics Law | : Flammable liquids (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations) |
| Port Regulation Law | : Flammable liquids (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods) |
| Road Act | : Restriction for Vehicle Traffic (Enforcement Order Art.19-13, Publication of Japan Highway Public Corp.) |
| Waste Management on Public Cleansing Law | : Specially Controlled Industrial Wastes (Act Art.2, para 5, Enforcement Order Art.2-4) |
| Japanese Pollutant Release and Transfer Register Law (PRTR Law) | : Not applicable |

16. Other information

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| Data sources | : Handbook of 17423 Chemical Products, The Chemical Daily Co, Ltd. International Chemical Safety Cards. National Institute of Technology and Evaluation (NITE). 2020 Emergency Response Guidebook (ERG 2020). |
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