# SAFETY DATA SHEET

PRODUCT NAME **Isooctane （2,2,4-Trimethylpentane）**

Data of issue 30/1/2012

Date of revision/ Last confirmation 3/4/2025

## 1. Identification of the substance or mixture and the supplier

| | |
|---|---|
| Product name | Isooctane（2,2,4-Trimethylpentane） |
| SDS No. | GHS-0031E |
| Name of supplier | Kyoto Electronics Manufacturing Co., Ltd. |
| Address | 68 Ninodan-cho, Shinden, Kisshoin, Minami-ku, Kyoto, Japan |
| Division | Quality Assurance Department |
| Phone | +81-75-691-4121 |
| Fax | +81-75-691-4127 |
| Emergency phone | +81-75-691-4125 |

Recommended uses and restrictions on use

| | |
|---|---|
| Recommended use | For analysis |
| Restrictions on use | When using for purposes other than those recommended, consult a specialist. |

## 2. Hazard identification

GHS classification

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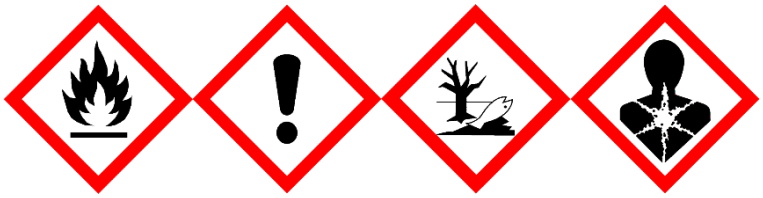
| Physical hazards | |
| Flammable liquids | Category 2 |
| Health hazards | |
| Skin corrosion / Irritation | Category 2 |
| Serious eye damage / Eye irritation | Category 2A |
| Specific target organ toxicity (single exposure) | Category 1(Central nervous system) |
| | Category 3(Narcotic system, Respiratory tract irritation) |
| Aspiration hazard | Category 1 |
| Environmental hazards | |
| Short-term (acute) aquatic hazard | Category 1 |
| Long-term (chronic) aquatic hazard | Category 1 |

GHS label elements

Hazard pictograms



| | |
|---|---|
| Signal word | Danger |
| Hazard statements | H225 Highly flammable liquid and vapor.<br>H315 Causes skin irritation.<br>H319 Causes serious eye irritation.<br>H330 Fatal if inhaled<br>H335 May cause respiratory irritation.<br>H336 May cause drowsiness or dizziness.<br>H370 Causes damage to organs (Central nervous system).<br>H400 Very toxic to aquatic life<br>H410 Very toxic to aquatic life with long lasting effects. |
| Precautionary statements | |
| Prevention | P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>P233 Keep container tightly closed.<br>P240 Ground and bond container and receiving equipment.<br>P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.<br>P242 Use non-sparking tools.<br>P243 Take action to prevent static discharges.<br>P260 Do not breathe mist or vapors.<br>P264 Wash skin thoroughly after handling.<br>P271 Use only outdoors or in a well-ventilated area.<br>P273 Avoid release to the environment.<br>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| Response | P301 + P310 + P331 IF SWALLOWED: Immediately Call a POISON CENTER/ doctor. Do NOT induce vomiting.<br>P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.<br>P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a |

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| | POISON CENTER/ doctor if you feel unwell.<br>P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P337 + P313 If eye irritation persists: Get medical advice/ attention.<br>P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.<br>P332 + P313 If skin irritation occurs: Get medical advice/ attention.<br>P362 + P364 Take off contaminated clothing and wash it before reuse.<br>P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.<br>P391 Collect spillage. |
| Storage | P403 + P233 Store in a well-ventilated place. Keep container tightly closed.<br>P403 + P235 Store in a well-ventilated place. Keep cool.<br>P405 Store locked up. |
| Disposal | P501 Dispose of contents/ container to an approved waste disposal plant. |
| Other hazards which do not result in classification | None known. |

## 3. Composition/Information on ingredients

substance / mixture substance

Components

| No. | Chemical name | CAS No. | Concentration (% w/w) | ENCS / ISHL number |
|---|---|---|---|---|
| 1 | 2,2,4-Trimethylpentane | 540-84-1 | >=99 | 2-8 |

## 4. First-aid measures

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|---|---|
| General advice | Move out of dangerous area.<br>Show this material safety data sheet to the doctor in attendance.<br>Do not leave the victim unattended. |
| If inhaled | Remove person to fresh air and keep at rest in a position comfortable for breathing.<br>If breathing is weak or has stopped, loosen clothing, keep airway open and administer |

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| | artificial respiration. |
| | Call a POISON CENTER or doctor/physician if necessary. |
| In case of skin contact | Wash with soap and plenty of water. |
| | Wash contaminated clothing before reuse. |
| | Remove contaminated clothing and shoes. |
| | Call a physician if necessary. |
| In case of eye contact | If in eyes, immediately flush with plenty of water for at least 15 minutes and seek medical attention. |
| | Protect uninjured eyes. |
| | Keep eyes wide open while rinsing. |
| | If eye irritation persists, consult a medical specialist. |
| | Remove contact lenses, if present and easy to do. Continue rinsing. |
| If swallowed | Rinse mouth. |
| | If swallowed, DO NOT induce vomiting. |
| | Take victim immediately to hospital. |
| Most important symptoms and effects, both acute and delayed | No data available |
| Notes to physician | The effects of exposure to a substance may be delayed. |
| | Treat symptomatically. |

## 5. Fire-fighting measures

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|---|---|
| Suitable extinguishing media | Water |
| | Carbon dioxide ($CO_2$) |
| | Dry sand |
| | Regular foam |
| Unsuitable extinguishing media | High volume water jet |
| Specific hazards during fire fighting | Thermal decomposition can release irritating and toxic gases and vapors. |
| | Do not allow run-off from fire fighting to enter drains or water courses. |
| Specific extinguishing methods | Move the container to a safe place immediately. If it cannot be moved, spray water on the container and surrounding area to cool it down. Extinguishing work should be done from the upwind/windward position (stand in a place opposite to the direction of toxic fumes and smoke) while wearing PPE. |
| | For early-stage fires, use powder, carbon dioxide, dry sand, etc. |
| | For large-scale fires, use extinguishing agents such as foam that are effective at cutting off the oxygen/air supply to the fire. |
| Special protective equipment for | Use personal protective equipment. |

fire-fighters

## 6. Accidental release measures

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|---|---|
| Personal precautions, protective equipment and emergency procedures | Use personal protective equipment.<br>Remove all sources of ignition. |
| Environmental precautions | Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

Handling

| | |
|---|---|
| Advice on protection against fire and explosion | Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).<br>Keep away from open flames, hot surfaces and sources of ignition. |
| Advice on safe handling | Take precautions against static discharges.<br>Keep away from fire, sparks and hot surfaces.<br>Wash skin thoroughly after handling.<br>Do not eat, drink or smoke when using this product.<br>Use only in an area provided with suitable exhaust ventilation. |
| Avoidance of contact | Strong oxidizing agents |
| Hygiene measures | When using do not eat or drink.<br>When using do not smoke.<br>Wash hands before breaks and at the end of workday. |

Storage

| | |
|---|---|
| Conditions for safe storage | Store in a well-ventilated place.<br>Store at room temperature.<br>To maintain product quality, store away from heat and direct sunlight.<br>Keep container tightly closed. |
| Further information on storage stability | No decomposition if stored and applied as directed. |

## 8. Exposure controls/Personal protection

Threshold limit value and permissible exposure limits for each component in the work environment

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Reference concentration / Permissible concentration | Basis |
|---|---|---|---|---|
| 2,2,4-Trimethylpentane | 540-84-1 | TWA | 300 ppm | ACGIH |

Personal protective equipment

| | |
|---|---|
| Respiratory protection | Suitable respiratory equipment |
| Hand protection material | Protective gloves |
| Eye protection | Safety glasses |
| Skin and body protection | Protective suit |

## 9. Physical and chemical properties

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|---|---|
| Physical state | Liquid. |
| Color | Colorless, transparent |
| Odor | Peculiar odor |
| Melting point / Freezing point | -107 ℃ |
| Initial boiling point and boiling range | 99 ℃ |
| Flammability (liquids) | No data available |
| Lower explosion limit and upper explosion limit / flammability limit | |
| Upper explosion limit / Upper flammability limit | 1.1 vol% |
| Lower explosion limit / Lower flammability limit | 6.0 vol% |
| Flash point | -12 ℃ (c.c.) |
| Decomposition temperature | No data available |
| pH | No data available |
| Autoignition temperature | 530℃ |
| Self-Accelerating decomposition temperature (SADT) | No data available |
| Viscosity | |
| Viscosity, kinematic | 0.503 mPa·s (20 ℃) |
| Solubility(ies) | |
| Water solubility | Hardly soluble |
| Solubility in other solvents | Easily soluble in ethanol and diethyl ether |
| Partition coefficient: n-octanol/water | No data available |
| Vapor pressure | 5.1 kPa (20 ℃) |
| Density and / or relative density Relative density | 0.691 g/cm$^3$ (20℃) |
| Relative vapor density | 3.9 |
| Particle characteristics Particle size | No data available |

## 10. Stability and reactivity

| | |
|---|---|
| Reactivity | No data available |
| Chemical stability | Stable under normal conditions. |
| Possibility of hazardous reactions | May react on contact with oxidizing agents. |
| Conditions to avoid | Sunlight, heat, contact with incompatible materials |
| Incompatible materials | Strong oxidizing agents |
| Hazardous decomposition products | No data available |

## 11. Toxicological information

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|---|---|
| Acute toxicity | |
| Acute oral toxicity | LD50(Rat) >5,000 mg/kg |
| Acute dermal toxicity | LD50(Rabbit) >2,000 mg/kg |
| Acute inhalation toxicity | LC50(Rat) 33.52 mg/L, Exposure time 4 h |
| Skin corrosion/irritation | Causes skin irritation. |
| Serious eye damage/eye irritation | Causes serious eye irritation. |
| Respiratory or skin sensitization | |
| Skin sensitization | Not classified based on available information. |
| Respiratory sensitization | Not classified based on available information. |
| Germ cell mutagenicity | Not classified based on available information. |
| Carcinogenicity | Not classified based on available information. |
| Reproductive toxicity | May damage fertility or the unborn child. |
| STOT-single exposure | May cause drowsiness or dizziness.<br>Causes damage to organs (central nervous system).<br>May cause respiratory irritation. |
| STOT-repeated exposure | Not classified based on available information. |
| Aspiration toxicity | May be fatal if swallowed and enters airways |
| Remarks | No data available |

## 12. Ecological information

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|---|---|
| Ecotoxicity | LC50 (Oryzias latipes) 0.561 mg/L, Exposure time 96 h |
| Persistence and degradability | Not degradable, 0% by BOD |
| Bioaccumulation | Not highly bioaccumulative |
| Mobility in soil | No data available |

| | |
|---|---|
| Hazardous to the ozone layer | No data available |
| Other adverse effects | No data available |

## 13. Disposal considerations

| | |
|---|---|
| Waste from residues | Can be incinerated, when in compliance with local regulations.<br>Send to a licensed waste management company. |
| Contaminated packaging | Empty remaining contents.<br>Empty containers should be taken to an approved waste handling site for recycling or disposal.<br>Dispose of contents/ container to an approved waste disposal plant. |

## 14. Transport information

International Regulations

IATA-DGR

| | |
|---|---|
| UN / ID No. | UN1262 |
| Proper shipping name | Octanes |
| Class | 3 |
| Packing group | Ⅱ |

IMDG-Code

| | |
|---|---|
| UN No. | UN1262 |
| Proper shipping name | Octanes |
| Class | 3 |
| Packing group | Ⅱ |
| Marine pollutant | Applicable |

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

| | |
|---|---|
| Domestic regulation | Please refer to the law and local regulations, etc. in each country |
| Special precautions for user | The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations. |

## 15. Regulatory information

## 16. Other information

Citations/References

NITE-Gmiccs (National Institute of Technology and Evaluation)

NITE-CHRIP (National Institute of Technology and Evaluation)

Workplace Safety Site (Ministry of Health, Labor and Welfare)

SDS from various upstream manufacturers

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