

# Material Safety Data Sheet

Reference number J-1034

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## 1. Product and Company Information

Product name: Toyo Clean Copper

Company name: Toyo Riken Co.

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Section in charge: Technical development department

Person in charge: Minetake Matuda

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Emergency contact: 0299-64-6011

Use recommended and restriction for the use: Oxidation-inhibitory reagent of copper tubes in the brazing work.

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## 2. Summary of toxicity and dangerousness.

GHS classification.

Chemical and physical dangerousness.

Combustible/inflammable aerosol: category 2.

Inflammable point: -28°C.

Harmful influence on health.

Acute toxicity (oral administration): out of category.

Acute toxicity (percutaneous): uncategorized.

Acute toxicity (inhalation/vapor): uncategorized.

Skin corrosiveness / irritancy: category 2.

Serious damages to eyes and eye-irritancy: category 2A.

Respiratory sensitization: uncategorized.

Skin sensitization: uncategorized.

Germ-cell mutagenicity: uncategorized.

Carcinogenicity: uncategorized.

Genotoxicity: category 2.

Specific target organ/systemic toxicity (single exposure): category 3.

Specific target organ/systemic toxicity (repeated exposure): category 2.



Aspiration respiratory hazard: category 1.

Environmental hazard.

Aquatic environmental hazards (acute): category 1.

Aquatic environmental hazards (chronic): uncategorized.

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GHS labels

Pictograms and symbols.



Warning statements.

Dangerousness.

Danger and hazard information.

Combustible/inflammable aerosol.

Skin irritancy.

Serious irritancy to eyes.

There is suspicion of a bad influence on reproductive potentials or a fetus.

There is suspicion of irritancy on respiratory organs, drowsiness, and dizziness.

Influence on nervous systems by long-term repeated exposure.

There is suspicion of danger of life in the case of getting into a respiratory tract by drinking.

Harm to aquatic lives.

Notes [Safety measures]

Pressurized vessel: don't put on fire or pierce after use.

Don't spray "Toyo Clean Copper" on high-temperature bodies.

Keep far from heat sources, sparks, naked flames, and high-temperature bodies.



Wear protective gloves.

Wash hands with plenty of water after use.

Obtain the handling instruction and read deeply before use.

Read and understand well the safety measures before use.

Use personal protective equipment if necessary.

Use in the open air or in the room equipped with a good ventilation system.

Avoid inhaling dusts, fumes, gasses, mists, vapor, and the spray gas.

#### Emergency measures

**Skin Contact:** Wash with soap and plenty of water in the case of skin-adhesion.

**Contamination:** Remove the contaminated clothes and wash them before reuse.

**Skin Irritation:** Receive medical examination and treatments when you feel skin-irritation.

**Contact with eyes:** Flush eyes carefully with plenty of streaming water for several minutes and then, remove the contact lens, if you wear, and wash again eye balls.

**Eye irritation:** Receive immediately medical examination at a clinic if irritation lasts for long time after washing eyes with plenty of water. Wash well your hands after handling.

**Exposure:** Get medical aid at a clinic, when exposed. Contact to a medical doctor if you feel sick.

**Inhalation:** Remove from exposure to fresh air immediately. Make rest in a comfortable position to breath.

**Ingestion:** Contact immediately to a medical doctor. Do not induce vomiting.

#### Storage

Store in a dark and cool place to avoid radiation of direct sun shine and to keep the temperature below 50°C. Keep containers tightly closed in a locked room with good ventilation.

#### Disposal

Contents and empty containers must be disposed by consulting and entrusting a waste disposer company authorized by the



country.

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### 3. Composition and Information of Gradients

Category of the product, a single component or mixture: Mixture and Aerosol.

Component	wt %	CAS. No	ERM	ISHA	PRTR	PDSCA
Diisopropylether	<40-50	108-203-3	2-362	47	N.A	N.A
Isohexane	<5	107-83-5	2-6	521	N.A	N.A
Petroleum hydrocarbon	<30-40	ND	ND	N.A	N.A	N.A
Propane	<15-20	ND	ND	N.A	N.A	N.A

ND: Nondisclosure.

N.A: Not applicable and not listed.

ERM: Reference number of notification of official gazette in “Law Concerning the Examination and Regulation of Manufacture”

ISHA: Number of specified chemical substance designated by cabinet order in “Industrial Safety and Health Act”.

PRTR: “Pollutant Release and Transfer Register”.

PDSCA: “Poisonous and Deleterious Substances Control Act”.

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### 4. First Aid

Contact with Eyes: Wash immediately eyes with clean water for at least 15 minutes. Remove contact lens, if wear, and open the eyelid with fingers in order to wash eye-ball and every corner of eyelid with water. When you still feel irritation of your eyes, receive immediately the examination of an ophthalmologist at a clinic. Get medical aid if exposed to eyes.

Adhesion to skin: Remove the contaminated clothes and shoes immediately, after then, wash the contaminated skin with soap and plenty of water. Get medical aid immediately if skin irritation, hand chapping, a rash, and blisters occur.



Inhalation: Remove from exposure to fresh air immediately, and make rest in a comfortable position to breathe. Nevertheless, if feel sick by inhalation, get medical aid. If symptoms like drowsiness, and dizziness appear, remove from exposure to fresh air immediately and make an comfortable posture for easy breathing.

Ingestion: Wash in the mouth with water immediately. Do not induce vomiting and receive medical aid. Do not give anything to drink if the person injured is unconscious. When there is a doubt that a children ingests, take the children immediately to a clinic to get medical aid.

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## 5. Fire Fighting Measures.

Extinguishing Media: Water [ ], Carbon dioxide [○], Fire Foams [○], Dry Chemicals [○], Dry Sands [○], and others [ ].

Unusable Extinguishing Media: Nothing in particular.

Specific Danger and Harmfulness in Fire Emergency: Aerosol containers located near the fire site may cause explosion.

Special Extinguishing Methods: ① Fire Fighting must be carried out with holding sufficient distance from the fire site, ② dry chemicals, CO<sub>2</sub>, fire foams and dry sands are used as extinguishing media at an initial stage of fire, ③ a bar-like fountain by pump pressure sometimes causes the dangerous expansion of fire, ④ in a large-scale fire, form fire extinguishers are used to cut off air supply, and ⑤ the containers exposed to high temperature should be cooled by pouring water on them.

Protection of Fire-Extinguishing Persons: Wear proper protectors (protective gloves, breathing mask on his own, and protective glasses).

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## 6. Accidental Release Measures.

Personal Protection, Protectors, and Emergency Measures.

Ventilate well till the indoor-work is finished.

Protectors (protective gloves, masks, and glasses) should be used to deal with a leak and spill.

Prohibit entry of the persons concerned to the place around the leak point by enclosing the area with a rope.

Avoid adhering to skin and inhaling dusts and gasses in the work by wearing proper protectors.

Start the work from the windward to the leeward and guide the



persons in the leeward to the safety place.

Prepare the fire extinguishing equipment and materials for the fire.

#### Notification of Environmental Effects.

Avoid runoff into sewers and ditches.

Dispose the waste properly according to the laws and regulations.

Take care meticulously not to flow out the contaminated liquid into the environment without proper treatment of the wasted liquid diluted by plenty of water.

#### Containment and Cleaning Methods and Equipment for Leaked Material.

Absorb the residuals, which are left after recovery, with sands and sawdust. Treat properly the accretion wastes according to the relevant laws and regulations.

#### Small Amount of Material.

Absorb a small amount of leaked material with sands, sawdust, and rags. Wipe off the residuals with rags, then, place into a suitable closed container for recovery.

#### Large Amount of Material.

Keep the material with soil fences to prevent flow-out. Treat properly the material after conduction of the material from the fence to a safety place.

#### Measures to Prevent Secondary Accident.

Report immediately to the relevant organizations with an aim to prevent the accident and the growing accident, when leakage of materials takes place

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### 7. Handling and Storage.

Handling: The product is made of high pressure flammable gasses. Keep the following notes in mind for safety.

Be cautious with high-temperature, and keep away from fire.

Use far from the fires or flames. Do not put into the fire.

Do not use a large amount of material in the room, where the fire is used.

Ventilate well not to accumulate the vapors.

Use only in the open air or well-ventilated place.

Set up good ventilation equipment in the closed working-place, and work after wearing appropriate protectors.



Storage:

Proper Storage Conditions.

Avoid storing material in the places where the temperature becomes high above 40°C by direct sunshine or near the fire sources because of the possible rupture of containers. It is preferable that the place is unable for the children to access.

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## 8. Measures of Protection and Exposure-Prevention.

Counter Measures of Equipment.

Seal the emission source and provide the local ventilation facilities in the case that the working place is in door. Provide facilities for shower and hand- and eye-washing near the handling place. The place of each facility must be clearly displayed.

Permissive and Controlling Concentrations.

① Diisopropylether.

Controlling concentration: not regulated

Permissive concentration: not regulated by Japan

Society for Occupational Health. ACGIH: 250 ppm (1050 mg/m<sup>3</sup>).

② Petroleum hydrocarbon

Controlling concentration: not regulated.

Permissive concentration: not regulated.

③ Propane

Controlling concentration: not regulated.

Permissive concentration: 1000 ppm (1800

mg/m<sup>3</sup>) by "Japan Society for Occupational Health".

④ Isohexane

Controlling concentration: not regulated

Permissive concentration: not regulated

Protective equipment.

Protective tool for breathing: Wear a gas mask to avoid breathing of organic gasses.

Tool for protection of hands: Wear non-permeable gloves like vinyl gloves.

Tool for protection of eyes: Wear goggles and a preventing disaster.

Tool for protection of skin and body: Wear, if necessary, a protective apron and boots.



Sanitation measures: Use in a place of good ventilation.

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## 9. Physical and Chemical Properties.

Liquid in the container

Appearances (physical appearances, figures, color, etc.): Colorless liquid.

Smell: Ether-like smell.

pH: No data available.

Melting point/Freezing point:  $-85.5^{\circ}\text{C}/-$ .

Boiling point:  $68.4^{\circ}\text{C}$ .

Flash point:  $-28^{\circ}\text{C}$ .

Ignition point:  $443^{\circ}\text{C}$ .

Combustibility (solid or gas): No data available.

Combustible range or explosion limits, an upper limits/ a lower limits:  
 $1.4\text{-}21.0$  wt. %.

Vapor pressure: No data available.

Specific gravity of vapor (relative density): 2.9 (air = 1.0).

Solubility in water: Insoluble (Note: isopropyl ether is known to dissolves  
 $1.0$  % water).

## Propellant.

Appearance: colorless gas.

Density:  $0.502\text{ g/m}^3$ .

Specific gravity of vapor ( relative density): 1.55 (air = 1.0).

Vapor pressure:  $0.75\text{ MPa}$  at  $20^{\circ}\text{C}$ .

Boiling point:  $-42.04^{\circ}\text{C}$

Melting point:  $-187.69^{\circ}\text{C}$ .

Flash point:  $-90^{\circ}\text{C}$

Ignition point:  $493^{\circ}\text{C}$ .

Explosion limits:  $2.2 - 9.5$  vol. %

Solubility: Insoluble in water.

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## 10. Stability and Reactivity.

Stability: Stable within usual handling.

Dangerous materials by melting and kneading: Avoid contact with



strong oxidizing reagents.

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#### 11. Toxicological Information.

Acute toxicity (oral): Not classified.  $ATE_{mix} \approx 7498 \text{ mg/kg}$ .

Acute toxicity (percutaneous): Not classified. No data available.

Acute toxicity (inhalation): Not classified. No data available.

Skin corrosivity/irritancy: Category 2, Skin irritancy substance  $\Sigma$  class 2 (80% content).

Serious damages to eyes/irritancy: Category 2, Skin irritancy substance  $\Sigma$  class 2 (50 % content).

Respiratory sensitization: Not classified. No data available.

Skin sensitization: Not classified. No data available.

Mutagenicity (germ - cell mutagenicity): Not classified. No data available.

Carcinogenicity: Not classified. No data available.

Reproduction toxicity: Category 1, Reproduction-toxic substance  $\Sigma$  class 2 (50% content).

Specific target organ/systemic toxicity (single exposure): Category 3, Toxic substance  $\Sigma$  class 2 (50 % content).

Specific target organ/systemic toxicity (repeated exposure): Category 2, Toxic substance  $\Sigma$  class 2 (3.0 % content).

Aspiration respiratory hazards: Category 1, Toxic substance S class 2 (3.0 % content).

Others: Slightly narcotic.

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#### 12. Information of Environmental Effects.

Biological toxicity: 1000 mg/L as LC 50. Toxic to aquatic lives.

Residual effects/degradability: No data available.

Bioaccumulation: No data available.

Mobility in soil: No data available.

Other toxic effects: No data available.

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#### 13. Disposal Considerations.

① Disposal of liquid waste, empty containers, and other related waste should be carried out under contraction with industrial waste disposers or waste collection/transporting companies, which received permission from the prefectural governor.



② Dispose containers and vessels after confirming that these are empty inside.

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#### Transport Information.

Domestic regulation.

Special safety measures.

Specified safety measures and conditions for transport.

Land transportation: Transport according to the notices described “Handling and Storage” and the transport methods decided by “Industrial Safety and Health Act” and other laws.

Marine transport: Follow the marine transport methods decided by “Ship Safety Act”.

Aerial transport: Follow the transport methods decided by “Aviation Law”.

Notes: Confirm no breakage of container and no leaks. Load the containers without falling, dropping, and damaging. Execute properly prevention of load collapse. Transport, pack, and fix the label according to the relevant laws.

International regulation.

United nations classification: class 2, High-pressure gas.

United nations number: 1950.

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#### 15. Applicable Laws.

“Fire Defense Law”: Class 4 of hazardous materials, class 1 petroleum (non-aqueous liquid).

“Industrial Safety and Health Act”: Substances to be notified, diisopropyl ether and isohexane.

“Poisonous and Deleterious Substances Control Act”: Not applicable.

“PRTR” Not applicable.

“High Pressure Gas Safety Act”: Exclusion from application (liquid gas, inflammable gas).

“Ship Safety Act”: Hazardous material (high pressure gas).

“Aviation Law”; High pressure gas.

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#### 16. Additional Information.

References:

1) “Revised version of Preparation guidelines of MSDS”: Japan



Auto-chemical Industrial Association.

- 2) "Chemical Substance Database" edited by Japan Auto-chemical Industrial Association.
- 3) "15107 Chemical Goods": Kagakukougyou Nippousha.
- 4) "Hand Book of Solvents" published by Kohdannsha.

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**\*NOTES**

MSDS is provided as reference information for users to handle the poisonous and hazardous chemicals with safety. Users should utilize this MSDS after understanding that it is necessary for them to take proper measures, on their own responsibility, in the actual handling according to each circumstance. MSDS is not a warranty, and information and the data described above do not ensure safety. Please handle with sufficient care.