Preparation Date 2007/02/22
Revision Date 2025/05/20

Safety Data Sheet (SDS)

Section 1 – CHEMICALS AND COMPANY IDENTIFICATION

Chemical Identifier	Copper Anode Ball (DD)
Company Name	Mitsubishi Materials Corporation
Address	Marunouchi Nijubashi Building 3-2-3, Marunouchi, Chiyoda-ku, Tokyo 100-8117, Japan
Company Contact	Advanced Products Company Copper & Copper Alloy Business Unit
Phone Number	+(81)-3-5252-5334 (Sales department)
Emergency Phone Number	+(81)-72-241-4111 (Mitsubishi Materials Corporation Sakai Plant / business hours 8: 30-17: 00 (JST) / language of the telephone service：Japanese)
Recommended Use	Use as an anode material for copper plating.
Restriction on Use	Use other than recommended use. Especially, it is not assumed to be used after melting state at high temperature.

Section 2 – HAZARDS IDENTIFICATION

GHS Classification of the Chemical	Health Hazards	Skin sensitization Category 1A
		Specific target organ toxicity (single exposure) Category 1（digestive organs）
		Specific target organ toxicity (single exposure) Category 3（respiratory tract irritation）
		Other hazards than mentioned above are Not classified or Classification not possible.
GHS Label Elements	Pictograms	
	Signal Word	Danger
	Hazard Statements	H317 May cause an allergic skin reaction
		H335 May cause respiratory irritation
		H370 Causes damage to digestive organs
	Precautionary Statements	
	Prevention	Avoid breathing dust/fume/gas/mist/vapours/spray.(P261)
		Wash hand thoroughly after handling.(P264)
		Do not eat, drink or smoke when using this product.(P270)
		Use only outdoors or in a well-ventilated area.(P271)
		Contaminated work clothing should not be allowed out of the workplace.(P272)
		Wear protective gloves/protective clothing/eye protection/face protection.(P280)
	Response	If on skin: Wash with plenty of soap and water.(P302+P352)
		If inhaled: Remove person to fresh air and keep comfortable for breathing.(P304+P340)
		If exposed or concerned: Call a doctor.(P308+P311)
		Call a doctor if you feel unwell.(P312)

	Specific treatment.(P321)
	If skin irritation or rash occurs: Get medical advice/attention.(P333+P313)
	Take off contaminated clothing and wash it before reuse.(P362+P364)
Storage	Store in a well-ventilated place. Keep container tightly closed.(P403+P233)
	Store locked up.(P405)
Disposal	Dispose of contents and container in accordance with local, regional and national regulations (to be specified).(P501)

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Distinction of Substance or Mixture: Mixture

Chemical Name or Generic Name	Concentration or Its Ranges	Formula	ENCS No./ISHL No.		CAS RN
			ENCS No.	ISHL No.	
Copper	99.9% or more	Cu	Not applicable	Not applicable	7440-50-8
Phosphorus	0.045～0.060%	P	Not applicable	Not applicable	7723-14-0

Section 4 - FIRST AID MEASURES

Inhalation	If inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing.
	If exposed or concerned: Call a doctor.
Skin Contact	If on skin: Wash with plenty of soap and water.
	Take of contaminated clothing and wash before re-use.
	If skin irritation or rash occurs, get medical advice and attention.
	Specific treatment.
	If exposed or concerned: Call a doctor.
Eye Contact	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	If exposed or concerned: Call a doctor.
Ingestion	Rinse mouth.
	If swallowed: Call a doctor if you feel unwell.
	If exposed or concerned: Call a doctor.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media	If the product are not melted, it is cooled with a common fire extinguishing agent, such as water. If it is already melted, there is a risk of steam explosion. So do not use a fire extinguishing agent such as water that generate water vapor.
Specific Hazards	Fire may generate irritating, corrosive and / or toxic gases.
	May ignite due to friction, heat, sparks and flames.
	Some burn when heated vigorously.
	Dust or fumes can form explosive mixtures with air.
	If the product is melted, harmful fumes may occur. In addition, depending on the extinguishant , it may cause a steam explosion.
	There is a risk of burning, but it does not ignite easily.

		Heating may cause to form an explosive mixture with air: indoors, outdoors or in sewers it has a risk of explosion.
		It is non-flammable and does not burn itself, but when heated it may generate corrosive and / or toxic fumes.
		Most foam fire extinguishers react with these substances to generate corrosive / toxic gases.
Specific Fire Fighting		Move product from fire area if it is not in danger.
		If it is melted, prevent diffusion with sand, etc., after solidifing it, cool it with water.
		For metal fires, it is desirable to use the Sealed Act and the Asphyxiation Act rather than water.
Protection of Fire Fighter		In fire fighting, wear respiratory protection and chemical protective clothing.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures		Use goggles in combination with dust mask, and another protections depending on the situation.
		Large spills :Evacuate area.
		Ensure adequate ventilation.
Environmental Precautions		Do not discharge into the drains, surface waters or ground water directly.
Methods and Equipment for Containment and Cleaning Up		Sweep or vacuum spills to drums or containers.
Prevention Measures for Secondary Accidents		Separate from incompatible materials as described in “Section 10- STABILITY AND REACTIVITY”.

Section 7 - HANDLING AND STORAGE

Handling	Technical Measures	Provide ventilation system and use the necessary personal protective equipment as described in ″Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION″.
		Use local exhaust ventilation in case of production of fume or mist.
		Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
	Precautions for Safe Handling	Do not eat, drink or smoke when using this product.
		Wash hands thoroughly after handling.
		Use only outdoors or in a well-ventilated area.
		Wear protective gloves.
		Contaminated work clothing should not be allowed out of the workplace.
		Do not inhale dust/fume/gas/mist/vapours/spray.
	Prevents Handling of Incompatible Substances or Mixtures	Refer to ″Section 10 - STABILITY AND REACTIVITY″.
Storage	Conditions for Safe Storage	Refer to ″Section 10 - STABILITY AND REACTIVITY″.
		Store locked up.
		Store container tightly closed in well-ventilated place.

Section 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

	Japan Administration Level	Exposure Limits (Japan Society for Occupational Health)	Exposure Limits (ACGIH)
Copper	–	–	TWA 0.2 mg/m^3, STEL – (Fume, as Cu);TWA 1 mg/m^3, STEL – (Dusts and mists, as Cu)
Phosphorus	–	0.1mg/m^3	–

Engineering Controls		Use local exhaust ventilation in case of production of fume or mist.
		Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Personal Protective Equipment	Respiratory Protection	If necessary, wear respiratory protection.
	Hand Protection	Wear protective gloves.
	Eye/Face Protection	If necessary,wear protective eye protection.
	Skin and Body Protection	If necessary,wear protective clothing.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State		Solid
Form		Spherical solid
Colour		Reddish brown
Odour		No data available
Melting Point/Freezing Point		1083℃(reference:Copper)
Boiling Point or Initial Boiling Point and Boiling Ranges		2582℃(reference:Copper)
Flammability		No data available
Lower and Upper Explosion Limit / Flammability Limit	Lower Limit	Not applicable because it is a solid
	Upper Limit	Not applicable because it is a solid
Flash Point		No data available
Auto-Ignition		No data available
Decomposition Temperature		No data available
pH		No data available
Kinematic Viscosity		No data available
Solubility		Insoluble in water, soluble in oxidizing liquids such as nitric acid.
Partition Coefficient : n-Octanol/Water		Not applicable because it is a mixture
Vapour Pressure		No data available
Density and/or Relative Density		8.92(20℃)(reference:Copper)
Relative Gas Density		Not applicable because it is a solid
Particle Characteristics		This product is a spherical solid

Section 10 - STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions (normal temperature, etc.).
Chemical Stability	No information.
Possibility of Hazardous Reaction	Impact-sensitive compounds are formed by acetylene compounds, ethylene oxides and azides. Reacts with strong oxides such as chlorates, bromates and iodates, causing explosion hazard.
Conditions to Avoid	A patina develops on the surface if left in damp air for a long time. It produces copper fumes when heated to high temperatures.
Incompatible Substances or Mixtures	Oxidizing liquids, acetylene compounds, ethylene oxides, azides, oxidizing agents (chlorates, bromates, iodates, etc.)
Hazardous Decomposition Products	No information.

Section 11 - TOXICOLOGICAL INFORMATION

Acute Toxicity	Oral	Classified as Not classified since ATE is over 5000mg/kg. Changed from Not Classified to Classification not possible since the sum of the concentrations of unknown ingredients is not less than 0.1%.
	Dermal	Unable to classify due to insufficient data.
	Inhalation	(gas) Does not fall under gas based on GHS definitions.
		(vapour) Unable to classify due to insufficient data.
		(dust and mist) Unable to classify due to insufficient data.
Skin Corrosion/Irritation		Unable to classify due to insufficient data.
Serious Eye Damage/Eye Irritation		Unable to classify due to insufficient data.
Respiratory Sensitization		Unable to classify due to insufficient data.
Skin Sensitization		Classified as Category 1A since one of the Category 1A ingredients is 99.9%.
Germ Cell Mutagenicity		Unable to classify due to insufficient data.
Carcinogenicity		Unable to classify due to insufficient data.
Reproductive Toxicity		(Reproductive toxicity) Unable to classify due to insufficient data.
		(Reproductive toxicity, effects on or via lactation) Unable to classify due to insufficient data.
Specific Target Organ Toxicity (Single Exposure)		Classified as Category 1(digestive organs) since one of the Category 1(digestive organs) ingredients is 99.9%.
		Classified as Category 3(respiratory tract irritation) since the sum of Category 3(respiratory tract irritation) ingredients is 99.9%.
Specific Target Organ Toxicity (Repeated Exposure)		Unable to classify due to insufficient data.
Aspiration Hazard		Classified as Classification not possible since the kinematic viscosity is unknown.

Section 12 – ECOLOGICAL INFORMATION

Hazardous to the Aquatic Environment, Short-Term (Acute)	Classified as Not classified since the sum of (M × 100 × Category 1) + (10 × Category 2) + Category 3 ingredients is 0%. Changed from Not classified to Classification not possible since the mixture contains unknown ingredients.
Hazardous to the Aquatic Environment, Long-Term (Chronic)	Classified as Not classified since the sum of (M × 100 × Category 1) + (10 × Category 2) + Category 3 ingredients is 0%. Changed from Not classified to Classification not possible since the mixture contains unknown ingredients.
Ecotoxicity	No data available
Persistence	No data available
Bioaccumulative Potential	No data available
Mobility in Soil	No data available
Hazardous to the Ozone Layer	Unable to classify due to insufficient data.

Section 13 – DISPOSAL CONSIDERATIONS

Residual Waste	Before disposal, make the wastes harmless, stabilized, and minimize danger and toxicity of the wastes.
	Dispose of waste in accordance with local,state and federal regulations.
Contaminated Container and Packaging	Passed to a licensed waste contractor.
	In case of disposal of empty containers, remove the content thoroughly.

Section 14 – TRANSPORT INFORMATION

International Regulations	Regulatory Information by Sea	Not regulated
	Marine Pollutant	Not applicable
	Liquid Substance Transported in Bulk According to MARPOL 73/78, Annex Ⅱ, the IBC Code	Not applicable
	Regulatory Information by Air	Not regulated
Regulations in Japan	Regulatory Information by Road	Not regulated
	Regulatory Information by Sea	Not regulated
	Marine Pollutant	Not applicable
	Liquid Substance Transported in Bulk According to MARPOL 73/78, Annex Ⅱ, the IBC Code	Not applicable
	Regulatory Information by Air	Not regulated
Emergency Response Guide Number		None

Section 15 – REGULATORY INFORMATION (Japanese law)

Industrial safety and health Act.	Dangerous substances and harmful substances that should be notified of names etc. (2 of the law Article 57, 2 first of the enforcement order Article 18 and 2 of the separate table No. 9) Copper and its compounds (decree number: 22) (90% or more)
Poisonous and Deleterious Substances Control Law	Not applicable
Chemical Substance Emission Control and Promotion Act (PRTR Law)	Not applicable
Water pollution control Act.	Designated substances (Law Article 2 Clause 4, Enforcement Ordinance Article 3-3) Living environment pollution items (Article 2 of the Law, Article 3 of the Enforcement Order, Ministry Ordinance 1 that sets the drainage standards, Appendix 2)
Air pollution control Act.	Substances that may correspond to harmful air pollutants (Central Environmental Council 9th report)
Water supply law	Hazardous substances (law Article 4 paragraph 2), water quality standard (Heisei 15 ministerial decree No. 101)
Sewerage law	Water quality reference substance (2 of Article 12 of the Act, 4 of the enforcement order Article 9)

Section 16 – OTHER INFORMATION

Literature References	National Institute of Technology and Evalution Website. https://www.nite.go.jp
Other Property	● Handling of the description contents This SDS is created based on JIS Z 7253: 2019. The contents of the description are created based on the materials, information, data, etc. that are basically available for general use in solids, and may be revised by new knowledge. Regarding the described data and evaluation, it is the provision of information and does not guarantee anything. Please note that the precautions are intended for normal handling, so please take appropriate safety measures before handling under conditions of use or special handling.