

Safety Data Sheet (SDS)

1. Identification of the substance/preparation and of the company/undertaking

Product name: Sodium disulfitoaurate (I) solution
Product code: --
Manufacturer/Supplier: Kojima Chemicals Co., Ltd
Address: 337-26 Kashiwabara Sayama-city, Saitama, 350-1335 Japan
Department: --
Tel: +81-4-2953-9231
Emergency telephone: +81-4-2953-9231
Fax.: +81-4-2953-9237
Email: --
Recommended use of the chemical and restrictions on use: Plating materials. Restrictions on use: Do NOT use it in an application which may contaminate food or do harm to human health.

2. Hazard Identification

GHS classification

Physical hazards	Explosives	Classification not possible
	Flammable gases	Not applicable
	Flammable aerosols	Not classified
	Flammable, oxidizing gases	Not applicable
	Gases under pressure	Not applicable
	Liquefied gases	Not applicable
	Flammable liquids	Not classified
	Flammable solids	Not applicable
	Pyrophoric liquids	Not classified
	Pyrophoric solids	Not applicable
	Substances and mixtures, which in contact with water, emit flammable gases	Not classified
	Oxidizing liquids	Not classified
	Oxidizing solids	Not applicable
	Organic peroxides	Not classified
	Self-heating substances and mixtures	Not classified
	Corrosive to metals	Classification not possible
Health hazards	Acute toxicity (oral)	Not classified
	Acute toxicity (dermal)	Not classified
	Acute toxicity (inhalation: gases)	Not classified
	Acute toxicity (inhalation: vapour)	Not classified
	Acute toxicity (inhalation: dust and mist)	Not classified
	Skin corrosion/irritation	Not classified
	Serious eye damage/eye irritation	Not classified
	Respiratory sensitizer	Not classified
	Skin sensitizer	Not classified
	Germ cell mutagenicity	Not classified
	Carcinogenicity	Not classified
	Reproductive toxicity	Not classified

	Specific target organ toxicity following single exposure	Not classified
	Specific target organ toxicity following repeated exposure	Not classified
	Aspiration hazard	Not classified
Environmental hazards	Acute hazards to the aquatic environment	Not classified
	Chronic hazards to the aquatic environment	Not classified
	Hazard to the ozone layer	Not classified

GHS Label elements:	
Symbol	Not applicable
Signal word	Not applicable
Hazard statement	No classification for this product.
Precautionary Statements	No classification for this product.
Response Precautionary Statements	No classification for this product.
Storage precautionary statements	No classification for this product.
Disposal precautionary statements	No classification for this product.

3. Composition/information on ingredients

Product description:	substance (); preparation/mixture (√)
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Ingredient (s)	By weight (%)	Chemical formula	MITI No.	CAS No.	PRTR Government ordinance No.	Notified information of hazardous and dangerous substances under Industry Safety and Health Law (Government ordinance No.)
Water	70.3	H ₂ O	Not applicable	7735-18-5	Not applicable	Not applicable
Sodium disulfiteaurate (I)	16.6	AuNa ₃ O ₆ S ₂	1-1206	19153-98-1	Not applicable	Not applicable
Sodium sulfate	4.50	Na ₂ O ₄ S	1-501	7757-82-6	Not applicable	Not applicable
Boron trioxide	4.30	B ₂ O ₃	1-71	1303-86-2	Category 1 (1-304)	Article 18-2, Attached Table 9-196 of Cabinet order
Sodium sulfite	4.20	Na ₂ O ₃ S	1-502	7757-83-7	Not applicable	Not applicable

Sodium hydroxide	0.10	HNaO	1-410	1310-73-2	Not applicable	Article 18-2, Attached Table 9-319 of Cabinet order
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4. First-aid measures

Adverse effects are not expected from this product. The following measures are for precautionary purpose.

After inhalation	Remove to fresh air. Call a doctor/physician if you feel unwell.
After skin contact	No special measures as there is no hazard for normal contact. Wash with water when necessary.
After eyes contact	Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do, continue rinsing. If irritation persists, seek medical care.
After ingestion	Rinse mouth. Do not induce vomiting without doctor's instruction. Get medical advice/attention if you feel unwell.
Acute effect and delayed effect	Acute effect: not found. Delayed effect: not found.
Personal protective equipment	Wear protective gloves/clothing/safety glasses/respirators when necessary.
Indication of immediate medical attention and treatment needed, if necessary	Treat according to symptoms.

5. Fire-fighting measures

Extinguishing Media	Use CO ₂ , chemical powder and foam for extinction. Do not use water jet.
Specific Hazards Arising from the Chemical	It is not combustible, but it is a kind of oxidizer which may intensify fire.
Fire Fighting Method (General method)	Shut off air supply. Extinguish fire from upwind and cool down containers by water spray. Remove containers from fire area if it can be done without risk. Deny unnecessary entry to the place around the fire.
Fire Fighting Equipment	Firefighters must extinguish fire from upwind and wear full protective equipment. Wear impermeable gloves when skin protection. Wear respiratory protection as it may lack of oxygen or hazardous gas may be inhaled.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Deny unnecessary entry to the place around the release place. Use proper personal protective equipment as indicated in Section 8. Stop the leakage if it can be done without risk. Do not contact spills.
Environmental precautions	Keep cleaning run-offs out of municipal sewers and open bodies of water. Comply with local and national laws and regulations.
Methods and material for containment and cleaning up	Small Spill: Mop up or absorb with an inert dry material (e.g. sand, dry lime) and place in an appropriately labeled waste disposal container. Large Spill: Build up dike or dig pit for collection. Collect the spilled material with pump into an appropriate container and transport

	the waste to the disposal place.
Precautionary measures for secondary hazard	Prevent leakage from flowing into enclosed space (e.g. drain, sewer, basement, etc.).

7. Handling and storage

Handling	
Technical measures	Use proper personal protective equipment as indicated in Section 8.
Precautions for safe handling	Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe vapour/mist. Handle with care to avoid damage of packaging.
Storage	
Conditions for safe storage	Store in a cool, well-ventilated and dry place. Avoid long-time exposure to direct sunlight. Keep out the reach of children.
Incompatible substances or mixtures	Organics, reducing agents, metals, etc.
Appropriate technical measures	Paste a label on each container indicating possible hazards and precautions. Do not stack too high to avoid falling down.
Packing materials	Recommend using sealed plastic containers.

8. Exposure controls/personal protection

Control parameters:

Ingredients	OSHA PEL-TWA	ACGIH TLV-TWA	Japan Industry & Health Association-PELs
Sodium disulfitoaurate (I) (CAS: 19153-98-1)	No data available	No data available	No data available
Sodium sulfate (CAS: 7757-86-2)	No data available	No data available	No data available
Boron trioxide (CAS: 1303-86-2)	No data available	10mg/m ³	No data available
Sodium sulfite (CAS: 7757-83-7)	No data available	No data available	No data available
Sodium hydroxide (CAS: 1310-73-2)	2mg/m ³	No data available	No data available

Engineering Controls	Install eye washer and safety shower near handling and storage area. Provide local exhaust system or explosion-proof devices.
Personal Protective Equipment	
Respiratory Protection	When high concentration of vapour occurs, wear respiratory protective equipment (e.g. supplied-air respirator, breathing apparatus, etc.) and eye protective equipment (e.g. goggles).
Protection of hands	Wear impermeable rubber gloves
Protection of eyes	Wear safety glasses when working in a dusty environment or exposure limit is exceeded.
Protection of body	Wear appropriate protective equipment (e.g. impermeable gloves, protective boots, etc.)
General protective and hygienic measures	Wash hands before breaks and at the end of work. Do not inhale vapour generated from processing.

9. Physical and chemical properties

General Information	
Form	Liquid
Colour	Colourless
Odour	Odour of Sulfurous acid
pH	10-11.5
Melting point/Melting range	Approximately 205°C
Boiling point/Boiling range	Not applicable
Flash point	Not applicable
Self-igniting Temperature	No data available
Flammability (solid, gas, etc.)	Not applicable
Flammable/Explosive Limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Evaporation Rate (Butyl acetate=1)	No data available
Specific gravity	Approximately 1.27-1.35
Solubility	Soluble in water
n-octanol/Water Partition Coefficient	No data available
Volatile organic compound (VOC)	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Stability	Stable under normal temperatures and pressures.
Possibility of hazardous Reactions	It may release sulphurous acid by heating or exposure to long-time direct sunlight.
Conditions to avoid	Avoid high temperatures, long-time exposure to direct sunlight, moisture and incompatible materials. Keep out the reach of children.
Materials to avoid	Acids
Hazardous Decomposition Products	It can release hazardous products (such as sulphurous acid) during heating.

11. Toxicological information

Acute toxicity: The toxicity data of this product has not been determined by testing or research, the toxicity data shown below is for reference only.	
LD 50/LC50 (Median lethal dose)	
Acute toxicity (Oral)	Sodium sulfite (CAS: 7757-83-7): 820mg/kg (rat) Data source: LUCLID Boron trioxide (CAS: 1303-86-2): 3,150mg/kg (rat) No relevant classification for the whole product.
Acute toxicity (Dermal)	No relevant classification for this product.
Acute toxicity (Inhalation)	Sodium sulfite (CAS: 7757-83-7) > 5.5mg/l/4hours Data source: LUCLID No relevant classification for the whole product.
Skin corrosion/irritation	No relevant classification for this product.
Serious eye damage/eye irritation	No relevant classification for this product.
Respiratory sensitizer	No relevant classification for this product.
Skin sensitizer	No relevant classification for this product.
Germ cell mutagenicity	No relevant classification for this product.
Carcinogenicity	No relevant classification for this product.
Reproductive Toxicity	No relevant classification for this product.
Specific target organ toxicity following single exposure	No relevant classification for this product.
Specific target organ toxicity following repeated exposure	No relevant classification for this product.
Aspiration hazard	No relevant classification for this product.

12. Ecological information

Mobility in Soil	No data available.
Persistence and Degradability	No data available.
Bioaccumulative Potential:	No data available.
Ecotoxicity	No data available.

13. Disposal considerations

Disposal of waste	Minimize the hazard of waste by the methods of neutralization and stabilization. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations. After contents are completely removed, dispose of its container at hazardous or special waste collection point. Paste a label on the container indicating the possible hazards of the waste.
Disposal of contaminated containers and packaging	Cleaning containers according to relevant criteria and regulations. Remove contents thoroughly before disposal. Contaminated packaging should be disposed of as hazardous waste.

14. Transport Information

International laws and regulations	
DOT/Air-Transportation-IATA/ICAO/Sea-Transportation-IMO/IMDG	
UN No.	Not applicable
Proper Shipping Name	Not regulated

Hazard Class	Not applicable
Packing Group	Not applicable
Marine Pollutant	Not applicable
Pictogram	Not applicable
Domestic laws and regulations	
Hazard class	Not applicable
UN No.	Not applicable
Proper Shipping Name	Not regulated
Packing Group	Not applicable
Land transportation (Fire-Fighting Law)	Not applicable
Sea transportation (Safety of Ships Law)	Not applicable
Air transportation (Aviation Law)	Not applicable
Emergency response guideline No.	Not applicable
Special precautions for user	Check whether the package is completed or sealed before transporting; make sure no damage of packages and prevent goods from falling down during transporting; the transport vehicle should be equipped with facilities for fire-fighting and accidental release handling; do NOT transport this product together with incompatible substances; stay away from fire and areas of high temperature during stopovers.

15. Regulatory information

Fire-Fighting Law	Not applicable
Industry Safety and Health Law	
Notified information of hazardous and dangerous substances under this law	Boron trioxide (CAS: 1303-86-2): Article 18-2, Attached Table 9-196 of Cabinet order Sodium hydroxide (CAS: 1310-73-2): Article 18-2, Attached Table 9-319 of Cabinet order
Poisonous and Deleterious Substances Control Law	Sodium hydroxide (CAS: 1310-73-2): Deleterious Substances, Article 18-2, Attached Table 9-319 of Cabinet order As for the whole product, no relevant classification according to this Law.
PRTR	Specified Class 1-chemicals under this law: not listed. Class 1-chemicals under this law: Boron trioxide: Category 1 (1-304) Class 2-chemicals under this law: not listed.
Law of Water Pollution Prevention	Boron trioxide: Cabinet Order No. : Article 2-24 of Cabinet order
Sewer Law	No relevant information.
Law of Air Pollution Prevention	Boron trioxide is classified as Hazardous Air Pollutants. Cabinet Order No. : Article 1-23 of Cabinet order
Law of Ocean Pollution Prevention	Avoid release to environment.
Laws of Waste Disposal and Cleaning	Dispose it according to laws of industrial waste disposal (Avoid spreading and leaking).
International Laws and Regulations	
67/548/EEC Annex I	Sodium hydroxide (CAS: 1310-73-2): R: 35, S: (1/2-)26-37/39-45
TSCA (Toxic Substance	All ingredients with specific CAS numbers are listed in the U.S. Toxic Substances

Control Act)	Control Act Chemical Substance Inventory List.
Air Purification Law	This product does not contain any ozone-depleting substances of class I . This product does not contain any ozone-depleting substances of Class II .
Clean Water Act	None of the ingredients of this product are listed as Hazardous Substances under the CWA. None of the ingredients of this product are listed as Priority Pollutants under the CWA. None of the ingredients of this product are listed as Toxic Substances under the CWA.
Carcinogenicity categories	Not listed by ACGIH, IARC and NTP.

16. Other information

References:	1. GHS Technical Documents (Version 4 th and Version 5 th) 2. JIS Z 7253-2014 3. JIS Z 7250-2010 4. Industry Safety and Health Law 5. Poisonous and Deleterious Substances Control Law 6. Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances 7. Fire-Fighting Law 8. PRTR
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