

KOKI COMPANY LIMITED

MATERIAL SAFETY DATA SHEET

1. Chemical Product and Company Identification

Product Name: S3X58-M406-3
General Use: Lead Free Solder Paste for Soldering
Product Description: Mixture of organic acid of a small amount, rosin, wax, denatured alcohol and solder powder.
Manufacturer: KOKI COMPANY LIMITED.
32-1, Senju Asahi-cho, Adachi-ku Tokyo 120-0026 Japan
Telephone No.+81-3-5244-1521
Emergency contact: KOKI COMPANY LIMITED. - Soldering Materials Technology Div.
Telephone No.+81-493-56-3495 (9:00am~5:30pm)

2. Composition/Data on components:

Chemical characterization:

<u>Chemical name</u>	<u>Wt%</u>	<u>CAS Registry No.</u>	<u>EINECS No.</u>	<u>EU No.</u>
Tin	80~90	7440-31-5	231-141-8	
Silver	1~ 5	7440-22-4	231-131-3	
Copper	0.1~1	7440-50-8	231-159-6	
Rosin Acid	3~6	8050-09-7	232-475-7	650-015-00-7
Denatured alcohol	2~5			

3. Hazards identification

Hazard description: Irritant

Specific hazards: May cause sensitization by skin contact. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Heating can release hazardous gases.

4. First aid measures

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Consult a physician after significant exposure.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.
Consult a physician after significant exposure.

After eye contact:

Flush opened eyes with plenty of water for at least 15min. Then consult a doctor.

Ingestion:

If conscious, drink plenty of water. Call a physician immediately. Do not induce vomiting.

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5. Fire fighting measures

Extinguishing Media: Dry Chemical, Form, CO₂

Special fire fighting procedure: Use NIOSH approved SCBA & Full protective equipment (FP N).

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Toxic metal oxide fume

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6. Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. Handling and storage

Handling

Information for safe handling:

Ensure good ventilation at the workplace.

Avoid contact with the skin and the eyes. Do not breathe vapors/dust. Wash hands before breaks and immediately after handling the product.

Open and handle container with care.

Information about protection against explosions and fires:

No special measures required.

Storage

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Do not store together with oxidizing and strong acids.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Store under lock and key and with access restricted to technical experts or their assistants only.

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8. Exposure controls and personal protection

Components with limit values that require monitoring at the workplace:

Tin metal, tin oxide and inorganic tin compounds, except tin hydride (as Sn)

	mg/m ³
ACGIH TLV	2.2
Belgium TWA	2
Denmark TWA	2
Finland TWA	2
Germany TWA	2-inhalable fraction of the aerosol
Hungary TWA	1; 2STEL
Ireland TWA	2; 4-STEL
Netherlands TWA	2
Switzerland TWA	2; 4-STEL
United Kingdom TWA	2; 4-STEL
USA PEL (respirable)	2-inorganic compounds except oxide; 2-metal

Silver, elemental, and inorganic compounds (as Ag)

	mg/m ³
ACGIH TLV	0.1
Belgium TWA	0.1
Denmark TWA	0.01
Finland TWA	0.1
France TWA	0.1
Germany TWA	0.01
Switzerland TWA	0.01
United Kingdom TWA	0.1
USA PEL	0.01

Copper, elemental, and inorganic compounds (as Cu)

	mg/m ³
ACGIH TWA	0.2 (fume)
Belgium TWA	0.1 (fume)
Denmark TWA	0.1 (fume)
Finland TWA	0.2 (fume)
France TWA	0.2 (fume)
Germany TWA	0.1 (fume)
Switzerland TWA	0.2 (fume)
United Kingdom TWA	0.2 (fume)
USA PEL	0.1 (fume)

Rosin Acid

Not required

Denatured alcohol

No data

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Exposure controls and personal protection

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Respiratory protection: Maintain adequate exhaust. NIOSH approved respirator appropriate for exposure of concern (FP N).

Ventilation: Local exhaust operator should be protected from soldering fumes.

Protective gloves: Impervious gloves.

Eye protection: ANSI approved CHEM WORKERS GOGGS (FP N).

Other protective equipment: EYE WASH FOUNTAIN & DELUGE SHOWER which meet ANSI DESIGN CRITERIA. (FP N).

Work hygienic practices: Wash hands thoroughly prior to eating, drinking or smoking. Do not smoke while soldering.

9. Physical and chemical properties

Form: Paste

Color: Grey

Odor: Mild Odor

	<u>Value/Range</u>	<u>Unit</u>	<u>Method</u>
Change in condition			
Melting point/Melting range:	217	°C	
Boiling point/Boiling range:	260	°C	
Sublimation temperature / start:	Not determined		
Flash point:	141	°C	
Ignition temperature:	Not determined		
Decomposition temperature:	Not determined		
Danger of explosion:	Product does not present an explosion hazard.		
Explosion limits:			
Lower:	Not determined		
Upper:	Not determined		
Vapor pressure:	Not determined		
Specific gravity:	4~5		
Solubility in / Miscibility with water:	Insoluble		
% Volatile by volume :	<5		

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10. Stability and reactivity

Stability: Stable

Conditions to be avoided: Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Strong acids, strong oxidizers

Dangerous products of decomposition: Irritating and toxic fumes and gases, tin/tin oxides , silver fumes and copper fumes.

Hazardous poly occurs: No

11. Toxicological information

Acute toxicity:

LD50-LC50 mixture: None specified by manufacturer.

Route of entry - Inhalation: Yes

Route of entry - Skin: No

Route of entry - Ingestion: Yes

Health hazardous acute and chronic: Ingestion: Metal Alloys are harmful.

Inhalation: Vapors may produce respiratory irritation.

Skin: May cause dermatitis.

Eyes : May irritate.

Carcinogenicity - NTP: No

Carcinogenicity - IARC: No

Carcinogenicity - OSHA: No

Explanation carcinogenicity : Not relevant.

Signs/Symptoms of overexposure: Irritation, nausea, vomiting, Headache, joint & muscle pain

Emergency/First aid procedure:

Eyes: Immediately flush w/plenty of water for 15 min.

Skin: Wash thoroughly w/soap & water. Inhalation: Remove to fresh Air. Obtain medical attention in all cases.

Sub acute to chronic toxicity:

Metallic tin and inorganic tin compounds may cause nausea, vomiting, diarrhea, irritation and pneumoconiosis.

12. Ecological information

General notes: Do not allow material to be released to the environment without proper governmental permits.

13. Disposal considerations

Waste from residues /Product:

Consult state, local or national regulations for proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

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14. Transport information

DOT PSN Code: ZZZ

DOT Proper Shipping Name: Not regulated by this mode of transportation

IMO PSN Code: ZZZ

IMO Proper Shipping Name: Not regulated by this mode of transportation

IATA PSN Code: ZZZ

IATA Proper Shipping Name: Not regulated by this mode of transportation

AFI PSN Code: ZZZ

AFI Prop. Shipping Name: Not regulated by this mode of transportation

Additional Trans Data: Not regulated for transportation

15. Regulations

Product related hazard information:

Hazard symbols: Irritant

Risk phrases:

33 Danger of cumulative effects.

36 Irritating to eyes

Safety phrases:

24 Avoid contact with skin.

26 In case of contact with eyes, rinse immediately with plenty of water and medical advice.

28A After contact with skin, wash immediately with plenty of water.

37 Wear suitable gloves.

45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.

16. Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Soldering Materials Technology Div.

Contact: Koichi Sekiguchi