

# KOKI COMPANY LIMITED

## MATERIAL SAFETY DATA SHEET

### 1. Chemical Product and Company Identification

**Product Name:** S3X58-M405  
**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	2311418	
Silver	1~ 5	7440-22-4	2311313	
Copper	0.1~1	7440-50-8	2311596	
Rosin Acid	3~6	8050-09-7	2324757	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, CO<sub>2</sub>

**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 <sup>3</sup>
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 <sup>3</sup>
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 <sup>3</sup>
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 GOGGGS (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>
<b>Change in condition</b>			
<b>Melting point/Melting range:</b>	217	°C	
<b>Boiling point/Boiling range:</b>	260	°C	
<b>Sublimation temperature / start:</b>	Not determined		
<b>Flash point:</b>	141	°C	
<b>Ignition temperature:</b>	Not determined		
<b>Decomposition temperature:</b>	Not determined		
<b>Danger of explosion:</b>	Product does not present an explosion hazard.		
<b>Explosion limits:</b>			
<b>Lower:</b>	Not determined		
<b>Upper:</b>	Not determined		
<b>Vapor pressure:</b>	Not determined		
<b>Specific gravity:</b>	4~5		
<b>Solubility in / Miscibility with water:</b>	Insoluble		
<b>% Volatile by volume :</b>	<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