

KOKI COMPANY LIMITED

MATERIAL SAFETY DATA SHEET

1. Chemical Product and Company Identification

Product Name: SS4-M951DK
General Use: 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 Material Technology Div.
Telephone No.+81-3-3927-3311(Electronic Materials Div)
(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>
Lead	33~37	7439-92-1	231-100-4	
Tin	54~58	7440-31-5	231-141-8	
Silver	1~3	7440-22-4	231-131-3	
Rosin Acid	3~10	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. Avoid exposure to women during early pregnancy-May cause harm to unborn child.

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:

Lead, elemental, and inorganic compounds (as Pb)

	Mg (Pb) /m ³
ACGIH TLV	0.05
Belgium TWA	0.15
Germany TWA	0.1
Netherlands TWA	0.15
Switzerland TWA	0.1
United Kingdom TWA	0.1
Denmark TWA	0.1
Finland TWA	0.1
France TWA	0.15
Hungary STEL	0.04
Poland TWA	0.05
Sweden TWA	0.1
USA PEL	0.05

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

	mg/m ³
ACGIH TLV	2; 2-metal
Belgium TWA	2
Denmark TWA	2
Finland TWA	2
Germany	2-inhalable fraction of the aerosol
Hungary TWA	1; 2-STEL
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 TWA	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

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Rosin acid
Not required

Denatured alcohol
No data

9. 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.

10. 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:	179	°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:	5		
Solubility in / Miscibility with water:	Insoluble		
%Volatile by volume :	<5		

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11. 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: Lead oxide fume

Hazardous poly occurs: No

12. 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: Yes

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.

Other information (about experimental toxicology) :

Mutagenic effects have been observed on tests with laboratory animals.

Reproductive effects have been observed on tests with laboratory animals.

Carcinogenic effects have been observed on tests with laboratory animals.

Sub acute to chronic toxicity:

Lead and lead compounds may cause abdominal pain, diarrhea, loss of appetite, metallic taste, nausea, vomiting, lassitude, insomnia, muscle weakness, joint and muscle pain, irritability, headache and dizziness. Red blood cells may be damaged resulting in anemia. Gastritis and injury to the kidneys, liver, male gonads, and central nervous system may also occur.

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

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Additional toxicological information:

May cause harm to the unborn child.

Possible risk of impaired fertility.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s) of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

13. Ecological information

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

14. 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.

15. 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

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16. Regulations

Product related hazard information:

Hazard symbols: Irritant

Risk phrases:

- 61 May cause harm to the unborn child
- 62 Possible risk of impaired fertility 20/22 Harmful by inhalation and if swallowed.
- 33 Danger of cumulative effects.

Safety phrases:

- 53 Avoid exposure - obtain special instructions before use.
- 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.

This product contains lead and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Refer to 29CFR1910.1025 for regulations concerning lead and lead compounds.

17. 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 Material Technology Div.

Contact: Koichi Sekiguchi