

KOKI COMPANY LIMITED

MATERIAL SAFETY DATA SHEET

1. Chemical Product and Company Identification

Product Name: JS-E-09
General Use: Flux for wave soldering
Product Description: Mixture of halide of small amount, rosin, and isopropyl alcohol
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>
2-Propanol	83~87	67-63-0	200-661-7	603-003-00-0
Disproportionation Rosin	5~8	8050-09-7		
Hydrogenation Rosin	1~3	65997-06-0		
Terpene Rosin	1~3	25359-84-6		
Denatured Acid Hydrogenation Rosin	1~3	144413-22-9		

3. Hazards identification

Hazard description:

Specific hazards: Irritant effect on eyes. Prolonged skin contact may defat the skin and produce dermatitis. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

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:

Immediately drink a plenty of water. Call a physician immediately. Do not induce vomiting.

MATERIAL SAFETY DATA SHEET

5. Fire fighting measures

Extinguishing media: Carbon dioxide, extinguishing powder or water spray. Fight larger fires with spray or alcohol resistant foam.

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: Carbon monoxide (CO)

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.

Keep away from ignition sources.

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.

Keep away from ignition sources.

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. When using, do not eat, drink or smoke.

Open and handle container with care.

Information about protection against explosions and fires:

Keep ignition sources away. Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Storage

Requirements to be met by storerooms and receptacles:

Store in a cool location.

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.

MATERIAL SAFETY DATA SHEET

8. Exposure controls and personal protection

Components with limit values that require monitoring at the workplace:

Isopropyl alcohol (2-Propanol)

	ppm
ACGIH TLV	400; 500-STEL
Belgium TWA	400; 500-STEL
Denmark TWA	200 (skin)
France TWA	400
Germany TWA	200
Ireland TWA	400; 500-STEL (skin)
Netherlands TWA	250
Russia TWA	400-STEL
Sweden TWA	150; 250-STEL
Switzerland TWA	400; 800-STEL
United Kingdom TWA	400; 500-STEL
USA PEL	400

Disproportionation Rosin
Not required.

Hydrogenation Rosin
Not required.

Terpene Rosin
Not required.

Denatured Acid Hydrogenation Rosin
Not required.

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.

Breathing equipment:

Use suitable respirator when high concentrations are present.

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

Protective gloves: Impervious gloves.

Eye protection: Safety glasses. Full face protection.

Body protection: Protective work clothing.

MATERIAL SAFETY DATA SHEET

9. Physical and chemical properties

Form: Liquid

Color: Amber - clear

Odor: Organic acid like and alcohol

	<u>Value/Range</u>	<u>Unit</u>	<u>Method</u>
Melting point/Melting range:	< -89.5	°C	
Boiling point/Boiling range:	> 82.4	°C	
Sublimation temperature / start:	Not determined		
Flash point:	12	°C	
Flammability (solids, gaseous)	Highly flammable		
Ignition temperature:	750	°C	
Decomposition temperature:	Not determined		
Danger of explosion:	Product does not present an explosion hazard. However, formations of explosive air/vapor mixtures are possible		
Explosion limits:			
Lower:	2.5	Vol %	
Upper:	12	Vol %	
Vapor pressure:	43.9	hPa	at 20°C
Specific gravity:	0.823	g/cm ³	at 20°C
Solubility in / Miscibility with water:	partial		
% Volatile by volume:	83~87		

10. Stability and reactivity

Stability: Stable

Conditions to be avoided: Stable under recommended storage conditions. Vapors may form explosive mixture with air.

Materials to be avoided: Oxidizing agents

Dangerous reactions: Reaction with strong oxidizing agents. Forms peroxide.

Dangerous products of decomposition: Carbon monoxide and carbon dioxide.

MATERIAL SAFETY DATA SHEET

11. Toxicological information

Acute toxicity:

LD50-LC50 values that are relevant for classification:

2-Propanol (CAS#67-63-0), 100%

Oral: LD50: 4797 mg/kg (dog)

LD50: 3600 mg/kg (mouse)

LD50: 5045 mg/kg (rat)

LD50: 6410 mg/kg (rabbit)

LDLo: 3570 mg/kg (human)

Dermal : LD50: 12800 mg/kg (rabbit)

Inhalative: LC50/8H: 16000 ppm/8H (rat)

Primary irritant effect:

On the skin : Irritant to skin and mouse membranes.

On the eye : Irritant effect

Sensitization: No sensitization

Sub acute to chronic toxicity:

2-Propanol may act as a local irritant and in high concentrations as a narcotic with symptoms such as headache, dizziness, vomiting metal depression, anesthesia, and coma.

Similar symptoms may be caused by ingestion. It can cause corneal burns on contact with eyes.

Additional toxicological information:

In addition to local irritant manifestations, there is a narcotic effect when inhaling high concentrations, with the danger of central respiratory arrest.

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

IARC-3: Not classifiable as to carcinogen city to humans.

12. Ecological information

Mobility: Partly soluble in water.

Persistence and degradability: Readily biodegradable, according to appropriate OECD test.

Bioaccumulation: None

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:

Disposal must be made according to official regulations.

Recommendation: Solvent (alcohol), if necessary with cleaning agents

MATERIAL SAFETY DATA SHEET

14. Transport information

DOT regulations:	3
Hazard class:	UN1866
Identification number:	II
Packing group:	Flammable Liquid
Proper shipping name (technical name):	
Land transport ADR/RID (cross-border)	
ADR/RID class:	3 Flammable Liquid
Item:	3b
Danger code (Kemler):	33
UN-Number:	1866
Description of goods:	II
Maritime transport IMDG:	
IMDG Class:	3
UN number:	1866
Packaging group:	II
Proper shipping name:	Flammable Liquid
Air transport ICAO-TI and IATA-DGR:	
ICAO-TI-II class:	3
UN/ID Number:	1866
Packaging group:	II
Proper shipping name:	Flammable Liquid

15. Regulations

Product related hazard information:

Hazard symbols: F Highly flammable

Risk phrases:

11 Highly flammable.

Safety phrases:

7 Keep container tightly closed.

16 Keep away from sources of ignition – No smoking.

24/25 Avoid contact with skin and eyes.

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

28 After contact with skin, wash with a plenty of water and soap.

37/39 Wear suitable gloves and eye/face protection

National regulations

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

Information about limitation of use

For use only by technically qualified individuals.

MATERIAL SAFETY DATA SHEET

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 Materials Technology Div.

Contact: Koichi Sekiguchi