

1 PRODUCT AND COMPANY IDENTIFICATION

Trade name: 959 Low-Solids No-Clean Liquid Flux

Relevant identified uses of the substance or mixture and uses advised against Soldering Flux

Application of the substance / the preparation: Soldering flux

Details of the supplier of the safety data sheet

This Safety Data Sheet has been updated in accordance with the Globally Harmonized System (GHS).

Manufacturer/Supplier:

Kester
800 West Throntdale Ave.
Itasca, IL 60143
Tel (630) 616-4000
Fax (630) 616-4044

Kester Components Pte Ltd
500 Chai Chee Lane
Singapore 469024
Tel: 65-64491133

Information department:

SDS Coordinator (630) 616-6844

Emergency telephone number:

CHEMTREC 24-Hour Emergency Response Telephone Number : (800) 424-9300

CHEMTREC 24-Hour Emergency Response (Outside US & Canada) Telephone Number : (703) 527-3887

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H336 May cause drowsiness or dizziness.

Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS02 GHS07

Signal word Danger

Hazard-determining components of labelling:

Rosin, polymerized

Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

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H317 May cause an allergic skin reaction.

H336 May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P285 In case of inadequate ventilation wear respiratory protection.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard description:
WHMIS Hazard Symbols

B2 - Flammable liquid

D2B - Toxic material causing other toxic effects


Classification system:

NFPA ratings (scale 0 - 4)



HMIS-ratings (scale 0 - 4)

HEALTH	1	Health = *1
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

Other hazards
Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 COMPOSITION OF MIXTURE

Chemical characterization: Mixtures

Description: Mixture of the substances listed below with nonhazardous additions.

CAS No.	Description		% Range
CAS: 67-63-0 EINECS: 200-661-7	isopropanol	⚠ Flam. Liq. 2, H225 ⚠ Eye Irrit. 2A, H319; STOT SE 3, H336	50-100%
CAS: 8000-41-7 EINECS: 232-268-1	Terpineol	⚠ Skin Irrit. 2, H315 H227	2.5-10%
CAS: 110-15-6 EINECS: 203-740-4	succinic acid	⚠ Eye Irrit. 2A, H319	≤ 2.5%
CAS: 65997-05-9	Rosin, polymerized	⚠ Skin Sens. 1, H317	≤ 2.5%
CAS: 7732-18-5 EINECS: 231-791-2	Water		2.5-10%

Additional information:

This solder product does not contain any Substance of Very High Concern (SVHC) on the European Chemicals Agency (ECHA) candidate list.

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4 FIRST AID MEASURES

Description of first aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Induce vomiting, if person is conscious. Seek medical help.

Seek immediate medical advice.

Information for doctor:

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents: CO₂, sand, extinguishing powder. Do not use water.

Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbon dioxide (CO₂)

Aliphatic aldehydes

Advice for firefighters

Protective equipment: Wear self-contained respiratory protective device.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Environmental precautions: Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up:

Ensure adequate ventilation.

Absorb with clay, dry sand, or other inert material. Do not use combustible materials such as sawdust. Place in a chemical waste container.

Reference to other sections

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:

Precautions for safe handling

Store in cool, dry place in tightly closed receptacles.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility: Store away from oxidizing agents.

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Further information about storage conditions:
 Keep receptacle tightly sealed.
 Store in cool, dry conditions in well sealed receptacles.
Specific end use(s) No further relevant information available.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Additional information about design of technical systems: No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace:

67-63-0 isopropanol

PEL 980 mg/m³, 400 ppm

Additional information:

PEL = Permissible Exposure Limit (OSHA)

TLV = Threshold Limit Value (ACGIH)

OSHA = Occupational Safety and Health Administration

ACGIH = American Conference of Governmental Industrial Hygienists

Exposure controls

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.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment:

Exposure Controls: Use appropriate engineering control such as process enclosures, local exhaust ventilation to control airborne levels below recommended exposure limits.

When ventilation is not sufficient to remove airborne levels from the breathing zone, a NIOSH safety approved respirator or self-contained breathing apparatus should be worn. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.

Protection of hands:



Protective gloves

Material of gloves:

Nitrile rubber, NBR

Natural rubber, NR

Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Goggles recommended during refilling.

Safety Glasses with Sideshields

9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

General Information

Appearance:

Form:

Liquid

Color:

Light yellow

Odor:

Alcohol-like

pH-value at 20°C (68 °F):

3.1

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Change in condition

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 82°C (180 °F)

Flash point: ≤ 21°C (≤ 70 °F)

Ignition temperature: 425°C (797 °F)

Auto igniting: Product is not selfigniting.

Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

Explosion limits:

Lower: 2.0 Vol %
Upper: 12.0 Vol %

Vapor pressure at 20°C (68 °F): 43 hPa (32 mm Hg)

Density at 20°C (68 °F): 0.8 g/cm³ (6.676 lbs/gal)

Solubility in / Miscibility with

Water: Partly soluble.

Solvent content:

Organic solvents: 89.0 %
Water: 4.0 %

Solids content: 3.7 %

10 STABILITY AND REACTIVITY

Reactivity**Chemical stability**

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: Strong acids, strong oxidizers.

Hazardous decomposition products:

Carbon monoxide and carbon dioxide

When heated to soldering temperatures, the solvents are evaporated and rosin may be thermally degraded to liberate aliphatic aldehydes and acids.

11 TOXICOLOGICAL INFORMATION

Information on toxicological effects**Acute toxicity:**

LD/LC50 values that are relevant for classification:

67-63-0 isopropanol

Oral	LD50	5045 mg/kg (rat)
Dermal	LD50	12800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)

8000-41-7 Terpeneol

Oral	LD50	4300 mg/kg (rat)
Dermal	LD50	>3000 mg/kg (rabbit)

110-15-6 succinic acid

Oral	LD50	2260 mg/kg (rat)
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Primary irritant effect:

on the skin:

Irritant to skin and mucous membranes.

Possible local irritation by contact with flux or fumes.

on the eye:

Irritating effect.

Smoke during soldering can cause eye irritation.

through inhalation:

Vapors during use may irritate mucous membranes and respiratory system. High concentrations can cause headache, dizziness, narcosis, and nausea.

through ingestion: May cause gastrointestinal irritation.

Sensitization:

Sensitization possible through inhalation.

Sensitization possible through skin contact.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

Carcinogenic categories

IARC (International Agency for Research on Cancer)

67-63-0 isopropanol

3

NTP (National Toxicology Program)

None of the ingredients is listed.

12 ECOLOGICAL INFORMATION

Toxicity**Aquatic toxicity:** No further relevant information available.**Additional ecological information:****General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.

13 DISPOSAL CONSIDERATIONS

Waste treatment methods**Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 TRANSPORT INFORMATION

UN-Number**DOT, ADR, IMDG, IATA**

UN1219

UN proper shipping name**DOT, ADR, IMDG, IATA**

UN1219, ISOPROPANOL (ISOPROPYL ALCOHOL), mixture

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Transport hazard class(es)**DOT**

Class 3 Flammable liquids.
Label 3

ADR, IMDG, IATA

Class 3 Flammable liquids
Label 3

Packing group

DOT, ADR, IMDG, IATA II

Environmental hazards:**Marine pollutant:**

Special precautions for user No

Danger code (Kemler): 33 Not applicable.

EMS Number: F-E, S-E

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

UN "Model Regulation": Not applicable.
UN1219, ISOPROPANOL (ISOPROPYL ALCOHOL), mixture, 3, II

15 REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

USA The following information relates to product regulation specific to the USA.

SARA (Superfund Amendments and Reauthorization Act)

Section 355 (extremely hazardous substances):

None of the ingredient is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act): Kester certifies that all components listed below for the subject finished product are on the TSCA Inventory of Chemical Substances and are not subject to any chemical specific regulation under TSCA Section 12(b) export notification requirements delineated at 40 CFR part 707, subpart D.

All ingredients are listed or exempt from listing.

California Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity:

None of the ingredients is listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

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OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

CANADA:

Workplace Hazardous Materials Identification (WHMIS):

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR) and the Safety Data Sheet (SDS) contains all of the information required by the CPR.

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS02 GHS07

Signal word Danger

Hazard-determining components of labelling:

Rosin, polymerized

Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H336 May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P285 In case of inadequate ventilation wear respiratory protection.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**16 OTHER INFORMATION**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Material Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

*** Data compared to the previous version altered.**