

SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200. This Safety Data Sheet has been updated in accordance with the Globally Harmonized System (GHS).

Product Name: LIQUID SOLDER FLUX

SECTION 1- PRODUCT AND COMPANY IDENTIFICATION

Product Type: Solder Flux
Product Name: **LIQUID SOLDER FLUX**
Part Number(s): **10-4202**

Emergency Contact: **Chemtrec**
Phone: **(800) 424-9300**

Trade Name: 135
Common Name: Liquid Solder Flux
Chemical Name: Rosin Solder Flux
Family Usage: Soldering Flux for Electrical or Electronic Applications
Description: Mixture of the substances listed below with non-hazardous additions.

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:

No further relevant information available.

Application of the Substance / The Preparation:
Soldering Flux

SECTION 2- HAZARDS IDENTIFICATION

Classification of the substance or mixture



Flame

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



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.

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SECTION 2- HAZARDS IDENTIFICATION (CONTINUED)

Label elements

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms



GHS02 GHS07

Signal word Danger

Hazard-determining components of labeling:

Isopropyl Alcohol

Rosin

Hazard statements

H225 Highly flammable liquid and vapor.

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.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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

Classification system:

NFPA ratings (scale 0 - 4)



Health = 1

Fire = 3

Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 1

Fire = 3

Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.



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SECTION 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	Isopropyl Alcohol	⚠ Flam. Liq. 2, H225 ⚠ Eye Irrit. 2A, H319; STOT SE 3, H336	55-70%
CAS: 8050-09-7	Rosin	⚠ Skin Sens. 1B, H317	40-55%

SECTION 4- FIRST AID MEASURES

Description of first aid measures

General information: Follow general first aid procedures.

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: 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.

SECTION 5- FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: Water with full jet

Special hazards arising from the substance or mixture

Nitrogen oxides (NO_x)

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbon dioxide (CO₂)

Aliphatic aldehydes

Advice for firefighters

Protective equipment: No special measures required.



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SECTION 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.
 Do not flush with water or aqueous cleansing agents
 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.*

Protective Action Criteria for Chemicals

PAC-1:		
CAS: 67-63-0	Isopropyl Alcohol	400 ppm
CAS: 8050-09-7	Rosin	72 mg/m ³
PAC-2:		
CAS: 67-63-0	Isopropyl Alcohol	2000* ppm
CAS: 8050-09-7	Rosin	790 mg/m ³
PAC-3:		
CAS: 67-63-0	Isopropyl Alcohol	12000** ppm
CAS: 8050-09-7	Rosin	1,500 mg/m ³

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.*
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.*

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SECTION 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 Isopropyl Alcohol

PEL	Long-term value: 980 mg/m ³ , 400 ppm
REL	Short-term value: 1225 mg/m ³ , 500 ppm
	Long-term value: 980 mg/m ³ , 400 ppm
TLV	Short-term value: 984 mg/m ³ , 400 ppm
	Long-term value: 492 mg/m ³ , 200 ppm
	BEI

8050-09-7 Rosin

TLV	DSEN, RSEN, L
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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:

Not necessary if room is well-ventilated.

Use suitable respiratory protective device in case of insufficient ventilation.

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:



Safety glasses

SAFETY DATA SHEET**Product Name: LIQUID SOLDER FLUX****SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties****General Information****Appearance:**

Form: Liquid
Color: Amber colored
Odor: Alcohol-like

pH-value: Not determined.

Change in condition

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

Flash point: 18 °C (64 °F)

Ignition temperature: 399 °C (750 °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): 0.88 g/cm³ (7.344 lbs/gal)

Solubility in / Miscibility with

Water: Partly miscible.

Solvent content:

Organic solvents: 59.3 %

Solids content:

40.7 %

SECTION 10- STABILITY AND REACTIVITY

Reactivity No further relevant information available.

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.



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SECTION 11- TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

67-63-0 Isopropyl Alcohol

Oral	LD50	5045 mg/kg (rat)
Dermal	LD50	12800 mg/kg (rabbit)

Inhalative | LC50/4 h | 30 mg/l (rat)

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, and nausea.

through ingestion: May cause gastrointestinal irritation.

Sensitization:

Sensitization possible through inhalation.

Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.

Additional toxicological information:

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

Irritant

Carcinogenic categories

<i>IARC (International Agency for Research on Cancer)</i>		
67-63-0	Isopropyl Alcohol	3
<i>NTP (National Toxicology Program)</i>		
<i>None of the ingredients is listed.</i>		
<i>OSHA-Ca (Occupational Safety & Health Administration)</i>		
<i>None of the ingredients is listed.</i>		

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SECTION 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.

SECTION 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.

SECTION 14- TRANSPORT INFORMATION

UN-Number

DOT, ADR, IMDG, IATA

UN1219

UN proper shipping name

DOT
 ADR
 IMDG, IATA

Isopropanol mixture
 1219 Isopropanol mixture
 Not regulated
 ISOPROPANOL (ISOPROPYL ALCOHOL) mixture

Transport hazard class(es)

DOT



Class
 Label

3 Flammable liquids.
 3

ADR, IMDG, IATA



Class
 Label

3 Flammable liquids
 3

Packing group
DOT, IMDG, IATA

II

Marine pollutant:

No

Special precautions for user

Not applicable.

Danger code (Kemler): 33

EMS Number: F-E,S-D

Stowage Category B



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SECTION 14- TRANSPORT INFORMATION (CONTINUED)

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:

DOT	
Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L

ADR	
Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

IMDG	
Limited quantities (LQ)	1L
Excepted quantities (EQ)	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
UN "Model Regulation":	UN 1219 ISOPROPANOL MIXTURE, 3, II

SECTION 15- REGULATORY INFORMATION

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

All ingredients are listed on the following Government Inventories:

- China: Inventory of Existing Chemical Substances in China (IECSC)
- Korea: Korea Existing Chemicals List (ECL)
- Europe: European Inventory of Existing Commercial Chemical Substances (EINECS)
- Japan: Inventory of Existing and New Chemical Substances (ENCS)
- Philippines: Philippine Inventory of Chemicals and Chemical Substances (PICCS)
- USA: TSCA (Toxic Substances Control Act) TSCA Inventory of Chemical Substances

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):

CAS: 67-63-0 | Isopropyl Alcohol

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.

SAFETY DATA SHEET**Product Name: LIQUID SOLDER FLUX****SECTION 15- REGULATORY INFORMATION (CONTINUED)****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.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).**Hazard pictograms**

GHS02 GHS07

Signal word **Danger****Hazard-determining components of labeling:**

Isopropyl Alcohol

Rosin

Hazard statements*H225 Highly flammable liquid and vapor.**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.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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.



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SECTION 16- DISCLAIMER

GC Electronics believes that the information contained herein is accurate and reliable as of the date of this material safety data sheet, but no representation guarantee or warranty, express or implied, is made as to the accuracy, reliability or completeness of the information. Persons receiving information are encouraged to make their own determination as to the information's suitability and completeness for their particular application. NO INFORMATION CONTAINED HEREIN CONSTITUTES A PRODUCT WARRANTY OF ANY KIND, WHETHER EXPRESS OR IMPLIED; AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY GC ELECTRONICS.

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
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
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

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