

**SAFETY DATA SHEET (SDS)**  
According to 1907/2006/EC, Article 31

Printing Date 09/02/2016

Version number 14

Reviewed on 09/02/2016

**PRODUCT AND COMPANY IDENTIFICATION**

**Trade name:** 952-D6 Soldering Flux

**Article number:** C7-00-952D6

**Application of the substance / the preparation:** Soldering flux

**1.3 Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Kester Inc.  
800 West Thorndale Avenue  
Itasca, IL 60143 USA  
Tel (630) 616-4000  
Tel International 00 1 630 616-4000

ITW Specialty Materials (Suzhou) Co., Ltd.  
Heng Qiao Road  
Wujiang Economic Development Zone  
Suzhou, Jiangsu 215200 China  
Tel +86 512 82060808

Kester GmbH  
Ganghofer Strasse 45  
D-82216 Gernlinden Germany  
Tel +49 (0) 8142 4785 0

**Information department:** Product Compliance: EHS\_Kester@kester.com

**1.4 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

**HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**  
**Classification according to Regulation (EC) No 1272/2008**



GHS02 Flame

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



GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.  
Acute Tox. 4 H312 Harmful in contact with skin.  
Acute Tox. 4 H332 Harmful if inhaled.  
STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

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## 2.2 Label elements

### Labelling according to Regulation (EC) No 1272/2008

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

#### Hazard pictograms



GHS02 GHS07 GHS08

**Signal word** Danger

#### Hazard-determining components of labeling:

Isopropanol  
ethanol  
Aliphatic ketone  
methanol

#### Hazard statements

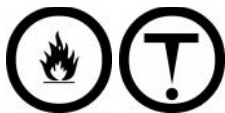
H225 Highly flammable liquid and vapor.  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

#### Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P280 Wear protective gloves / eye 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.

#### Hazard description:

#### WHMIS Symbols



#### Classification system:

#### NFPA ratings (scale 0 - 4)



#### HMIS-ratings (scale 0 - 4)

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

## 2.3 Other hazards

### Results of PBT and vPvB assessment

PBT: Not applicable.

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
Trade name: 952-D6 Soldering Flux

vPvB: Not applicable.

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## COMPOSITION OF MIXTURE

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	40-55%
CAS: 64-17-5 EINECS: 200-578-6	ethanol	 Flam. Liq. 2, H225	25-40%
	Aliphatic ketone	 Flam. Liq. 3, H226  STOT SE 3, H336	3.0-5.0%
CAS: 67-56-1 EINECS: 200-659-6	methanol	 Flam. Liq. 2, H225  Acute Tox. 2, H330  STOT SE 1, H370	1-<3%
	Proprietary organic acids	 Eye Irrit. 2A, H319	1.0-3.0%
CAS: 108-10-1 EINECS: 203-550-1	4-methylpentan-2-one	 Flam. Liq. 2, H225  Acute Tox. 3, H331  Carc. 2, H351  Eye Irrit. 2A, H319; STOT SE 3, H335	0.1-≤1%

## FIRST AID MEASURES

### 4.1 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.

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

**4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## FIREFIGHTING MEASURES

### 5.1 Extinguishing media

**Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**5.2 Special hazards arising from the substance or mixture** In case of fire, the following can be released:

### 5.3 Advice for firefighters

**Protective equipment:** No special measures required.

## ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

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

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**6.3 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.

**6.4 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.

**HANDLING AND STORAGE**

**7.1 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.

**7.2 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.

**7.3 Specific end use(s)** No further relevant information available.

**EXPOSURE CONTROLS / PERSONAL PROTECTION**

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

**8.1 Control parameters**

**Components with limit values that require monitoring at the workplace:**

**67-63-0 Isopropanol**

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

**64-17-5 ethanol**

PEL	Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm
REL	Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm
TLV	Short-term value: 1880 mg/m <sup>3</sup> , 1000 ppm

**Aliphatic ketone**

PEL	Long-term value: 710 mg/m <sup>3</sup> , 150 ppm
REL	Short-term value: 950 mg/m <sup>3</sup> , 200 ppm Long-term value: 710 mg/m <sup>3</sup> , 150 ppm
TLV	Short-term value: 712 mg/m <sup>3</sup> , 150 ppm Long-term value: 238 mg/m <sup>3</sup> , 50 ppm

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**67-56-1 methanol**

PEL	Long-term value: 260 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 325 mg/m <sup>3</sup> , 250 ppm Long-term value: 260 mg/m <sup>3</sup> , 200 ppm Skin
TLV	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm Long-term value: 262 mg/m <sup>3</sup> , 200 ppm Skin; BEI

**Proprietary organic acids**

TLV	Long-term value: 5 mg/m <sup>3</sup>
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**108-10-1 4-methylpentan-2-one**

PEL	Long-term value: 410 mg/m <sup>3</sup> , 100 ppm
REL	Short-term value: 300 mg/m <sup>3</sup> , 75 ppm Long-term value: 205 mg/m <sup>3</sup> , 50 ppm
TLV	Short-term value: 307 mg/m <sup>3</sup> , 75 ppm Long-term value: 82 mg/m <sup>3</sup> , 20 ppm BEI

**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

**8.2 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



Face Shield with Safety Glasses when refilling.

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**PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

**Form:** Liquid  
**Color:** Colorless  
**Odor:** Alcohol-like

**pH-value at 20 °C (68 °F):** 3.3

**Change in condition**

**Melting point/Melting range:** Undetermined.  
**Boiling point/Boiling range:** 78 °C (172 °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:** 15.0 Vol %

**Vapor pressure at 20 °C (68 °F):** 59 hPa (44 mm Hg)

**Density at 20 °C (68 °F):** 0.81 g/cm<sup>3</sup> (6.759 lbs/gal)

**Solubility in / Miscibility with**

**Water:** Fully miscible.

**Solvent content:**

**Organic solvents:** 94.6 %  
**Water:** 1.9 %

**Solids content:** 3.6 %

**STABILITY AND REACTIVITY**

**10.1 Reactivity** No further relevant information available.

**10.2 Chemical stability**

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

**10.3 Possibility of hazardous reactions** No dangerous reactions known.

**10.4 Conditions to avoid** No further relevant information available.

**10.5 Incompatible materials:** No further relevant information available.

**10.6 Hazardous decomposition products:**

When heated to soldering temperatures, solvents will be evaporated and organic material may release aliphatic aldehydes and acids.

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**TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

**Acute toxicity:**

Harmful if swallowed, in contact with skin or if inhaled.

**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)

**64-17-5 ethanol**

Oral	LD50	7060 mg/kg (rat)
Inhalative	LC50/4 h	20000 mg/l (rat)

**67-56-1 methanol**

Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	15800 mg/kg (rabbit)

**Primary irritant effect:**

**on the skin:** Based on available data, the classification criteria are not met.

**on the eye:** Based on available data, the classification criteria are not met.

**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:**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Additional toxicological information:**

**Carcinogenic categories**

**IARC (International Agency for Research on Cancer)**

67-63-0	Isopropanol	3
64-17-5	ethanol	1
108-10-1	4-methylpentan-2-one	2B

**NTP (National Toxicology Program)**

None of the ingredients is listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**ECOLOGICAL INFORMATION**

**12.1 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.

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.



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**DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

**Recommendation:**

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

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agent:** Water, if necessary with cleansing agents.

**TRANSPORT INFORMATION**

**14.1 UN-Number**

DOT, ADR, IMDG, IATA

UN1993

**14.2 UN proper shipping name**

DOT

Flammable liquids, n.o.s. (Isopropanol, Ethanol)

ADR

1993 Flammable liquids, n.o.s. (Isopropanol, Ethanol)

IMDG

FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL), ETHANOL (ETHYL ALCOHOL))

IATA

FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL), ETHANOL)

**14.3 Transport hazard class(es)**

DOT



Class

3 Flammable liquids

Label

3

**ADR, IMDG, IATA**



Class

3 Flammable liquids

Label

3

**14.4 Packing group**

DOT, IMDG, IATA

II

**14.6 Special precautions for user**

Not applicable.

**Danger code (Kemler):**

33

**EMS Number:**

F-E,S-E

**Stowage Category**

B

**14.7 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

**Remarks:**

Not Regulated per Small Quantity Exemption (49 CFR 173.4)

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**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)  
Excepted quantities (EQ)

1L

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation":

UN 1993 FLAMMABLE LIQUIDS, N.O.S. (ISOPROPANOL, ETHANOL),  
3, II

## REGULATORY INFORMATION

### 15.1 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):**

67-63-0	Isopropanol
67-56-1	methanol
108-10-1	4-methylpentan-2-one

**Chemicals known to cause cancer:**

4-methylpentan-2-one

**Chemicals known to cause reproductive toxicity:**

N-methyl-2-pyrrolidone

**Carcinogenic categories**

**EPA (Environmental Protection Agency)**

108-10-1 | 4-methylpentan-2-one | I

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

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 labeled according to the CLP regulation.

**Hazard pictograms**



GHS02 GHS07 GHS08

**Signal word** Danger

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**Hazard-determining components of labeling:**

Isopropanol  
ethanol  
Aliphatic ketone  
methanol

**Hazard statements**

H225 Highly flammable liquid and vapor.  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.  
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H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P280 Wear protective gloves / eye 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.

**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**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.

**Department issuing Safety Data Sheet (SDS):** Product Compliance / EHS Department**Contact:** EHS\_Kester@kester.com**Date of preparation / last revision** 09/02/2016 / 13**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 Harmonised 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)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
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  
Flam. Liq. 2: Flammable liquids – Category 2  
Flam. Liq. 3: Flammable liquids – Category 3  
Acute Tox. 4: Acute toxicity – Category 4  
Acute Tox. 2: Acute toxicity – Category 2  
Acute Tox. 3: Acute toxicity – Category 3  
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A  
Resp. Sens. 1: Respiratory sensitisation – Category 1  
Carc. 2: Carcinogenicity – Category 2  
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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