# SAFETY DATA SHEET (SDS)

*According to 1907/2006/EC, Article 31*

Printing Date 10/01/2012 Version number 8 Reviewed on 10/01/2012

* 

## 1 PRODUCT AND COMPANY IDENTIFICATION

***Trade name:* 182 Soldering 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 Throndale 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*

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## 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.*

*GHS08 Health hazard*

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

*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 GHS08

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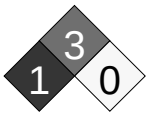
*Signal word Danger*

*Hazard-determining components of labelling:*
*isopropanol*
*Rosin*
*Hazard statements*
*H225 Highly flammable liquid and vapour.*
*H319 Causes serious eye irritation.*
*H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.*
*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.*
*P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
*P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*
*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:**

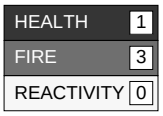
***WHMIS Hazard Symbols***
*B2 - Flammable liquid*
*D2B - Toxic material causing other toxic effects*

**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.*

* 
## 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<br>EINECS: 200-661-7 | isopropanol | Flam. Liq. 2, H225<br>Eye Irrit. 2A, H319; STOT SE 3, H336 | 50-100% |
| CAS: 8050-09-7<br>EINECS: 232-475-7 | Rosin | Acute Tox. 1, H300<br>Skin Sens. 1, H317 | 10-25% |

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***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:*** *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.*
***For safety reasons unsuitable extinguishing agents:*** *Water with full jet*
**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.*
*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.*

* 

## 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.*

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**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.*

* 

## 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:*
*Safety Glasses with Sideshields at all times.*

*Face Shield when refilling chemical liquid flux.*



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## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**
***General Information***
*Appearance:*
*Form:* *Liquid*
*Color:* *Amber colored*
*Odor:* *Mild*

***pH-value:*** *Not determined.*

***Change in condition***
*Melting point/Melting range:* *Undetermined.*
*Boiling point/Boiling range:* *82℃ (180 ℉)*

***Flash point:*** *≤21℃ (≤70 ℉)*

***Ignition temperature:*** *425℃ (797 ℉)*

***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℃ (68 ℉):*** *43 hPa (32 mm Hg)*

***Density at 20℃ (68 ℉):*** *0.85 g/cm³ (7.093 lbs/gal)*

***Solubility in / Miscibility with***
*Water at 20℃ (68 ℉):* *75 %*

***Solvent content:***
*Organic solvents:* *74.9 %*

*Solids content:* *25.1 %*

## 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)* |

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| | | |
|---|---|---|
| *Dermal* | *LD50* | *12800 mg/kg (rabbit)* |
| *Inhalative* | *LC50/4 h* | *30 mg/l (rat)* |
| ***8050-09-7 Rosin*** | | |
| *Oral* | *LD50* | *2.2 mg/kg (mouse)*<br>*3.0 mg/kg (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, narcosis, and nausea.*
*Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.*
*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.*

* 

## 14 TRANSPORT INFORMATION

**UN-Number**
***DOT, ADR, IMDG, IATA*** *UN1219*

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**UN proper shipping name**
***DOT, ADR, IMDG, IATA*** *UN1219, ISOPROPANOL (ISOPROPYL ALCOHOL), mixture*
**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:*** *No*
**Special precautions for user** *Not applicable.*
*Danger code (Kemler):* *33*
*EMS Number:* *F-E,S-D*
**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** *Not applicable.*
**UN "Model Regulation":** *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.* |

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

*None of the ingredients is listed.*

*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 GHS08

*Signal word Danger*

*Hazard-determining components of labelling:*
*isopropanol*
*Rosin*
*Hazard statements*
*H225 Highly flammable liquid and vapour.*
*H319 Causes serious eye irritation.*
*H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.*
*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.*
*P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
*P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*
*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.*

## 16 OTHER INFORMATION

*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 responsibilty 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:***
*RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*
*ICAO: International Civil Aviation Organization*
*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*

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*LD50: Lethal dose, 50 percent*

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