Chemical Name: Rosin Flux Pen #186

Manufacturer: Kester

Container Size: NA

Location: VLA

Disposal: Place empty container in trash. Give partial or full container to safety officer.

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 04/11/2006 Reviewed on 04/11/2006

1 Identification of substance

Product details

***Trade name:* 186**
Application of the substance / the preparation: Soldering flux

Manufacturer/Supplier:
Kester *Tel.(847) 297-1600*
515 E. Touhy Ave. *Fax.(847) 390-9338*
Des Plaines, IL 60018

Information department:
MSDS Coordinator *Tel. (847) 699-5755*
Emergency information:
CHEMTREC 24-Hour Emergency Telephone Number: *(800)424-9300*
CHEMTREC 24-Hour Emergency Telephone Number (Outside of the U.S. and Canada): *(703)527-3887*

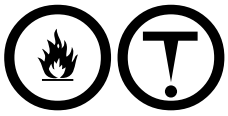
2 Composition/Data on components

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

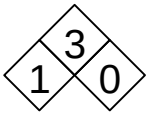
Dangerous components:		
67-63-0	*propan-2-ol*	*50-100%*
65997-06-0	*Modified Rosin*	*25-50%*
100-51-6	*benzyl alcohol*	*2.5-10%*

3 Hazards identification

WHMIS Hazard Symbols



Information pertaining to particular dangers for man and environment:
The product has to be labelled due to the calculation procedure of international guidelines.
Has a narcotizing effect.
Highly flammable.
Irritating to eyes.
May cause sensitisation by inhalation and skin contact.
Vapours may cause drowsiness and dizziness.
NFPA ratings (scale 0 - 4)



Health = 1
Fire = 3
Reactivity = 0

(Contd. on page 2)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 04/11/2006 Reviewed on 04/11/2006

Trade name: 186

(Contd. of page 1)

HMIS-ratings (scale 0 - 4)

HEALTH	*1
FIRE	3
REACTIVITY	0

*Health = *1*
Fire = 3
Reactivity = 0

4 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.*

5 Fire fighting measures

Suitable extinguishing agents: *CO2, sand, extinguishing powder. Do not use water.*
For safety reasons unsuitable extinguishing agents: *Water with full jet*
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)
Carbon dioxide (CO2)
Aliphatic aldehydes
Protective equipment: *Wear self-contained respiratory protective device.*

6 Accidental release measures

Person-related safety precautions: *Ensure adequate ventilation*
Measures for environmental protection: *Do not allow product to reach sewage system or any water course.*
Measures for cleaning/collecting:
Absorb with clay, dry sand, or other inert material. Do not use combustible materials such as sawdust. Place in a chemical waste container.

7 Handling and storage

Handling:
***Information for safe handling:** Store in cool, dry place in tightly closed receptacles.*
Information about protection against explosions and fires:
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

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.*

(Contd. on page 3)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 04/11/2006 Reviewed on 04/11/2006

Trade name: 186

(Contd. of page 2)

Further information about storage conditions: *Keep receptacle tightly sealed.*

8 Exposure controls and personal protection

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

Components with limit values that require monitoring at the workplace:	
67-63-0 propan-2-ol	
PEL	*980 mg/m³, 400 ppm*
REL	*Short-term value: 1225 mg/m³, 500 ppm*
	Long-term value: 980 mg/m³, 400 ppm
TLV	*Short-term value: (1230) mg/m³, (500) ppm*
	Long-term value: (983) mg/m³, (400) ppm
	NIC-200; 491; 400; 984; A 4

Personal protective equipment:
General protective and hygienic measures:
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:
When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.
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

Tightly sealed goggles

9 Physical and chemical properties

General Information

Form:	*Liquid*
Color:	*Amber colored*

(Contd. on page 4)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 04/11/2006 Reviewed on 04/11/2006

Trade name: 186

(Contd. of page 3)

Odor: *Alcohol-like*

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)*

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): *33 hPa (25 mm Hg)*

Density at 20°C (68°F): *0.879 g/cm³*

Solubility in / Miscibility with
Water: *Partly soluble.*

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: *No decomposition if used according to specifications.*
Materials to be avoided: *Strong acids, strong oxidizers.*
Dangerous reactions *No dangerous reactions known.*
Dangerous products of decomposition:
When heated to soldering temperatures, the solvents are evaporated and rosin may be thermally degraded to liberate aliphatic aldehydes and acids.

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:		
67-63-0 propan-2-ol		
Oral	*LD50*	*5045 mg/kg (rat)*
Dermal	*LD50*	*12800 mg/kg (rabbit)*
Inhalative	*LC50/4 h*	*30 mg/l (rat)*
65997-06-0 Modified Rosin		
Oral	*LD50*	*> 4.000 mg/kg (Rat)*
100-51-6 benzyl alcohol		
Oral	*LD50*	*1230 mg/kg (rat)*
Dermal	*LD50*	*2000 mg/kg (rabbit)*

(Contd. on page 5)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 04/11/2006 Reviewed on 04/11/2006

Trade name: 186

(Contd. of page 4)

Primary irritant effect:
on the skin: Possible local irritation by contact with flux or fumes.
on the eye: Smoke during soldering can cause eye irritation.
through inhalation:
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:
Harmful
Irritant

12 Ecological information

General notes: *Do not allow product to reach ground water, water course or sewage system.*

13 Disposal considerations

Product:
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

DOT regulations:

Hazard class:	*3*
Identification number:	*UN1219*
Packing group:	*II*
Proper shipping name (technical name):	*ISOPROPANOL, mixture*
Label	*3*

Land transport ADR/RID (cross-border):

ADR/RID class:	*3 Flammable liquids*
Danger code (Kemler):	*33*
UN-Number:	*1219*
Packaging group:	*II*
Description of goods:	*1219 ISOPROPANOL, mixture*

Maritime transport IMDG:

IMDG Class:	*3*
UN Number:	*1219*
Label	*3*

(Contd. on page 6)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 04/11/2006 Reviewed on 04/11/2006

Trade name: 186

(Contd. of page 5)

Packaging group: *II*
EMS Number: *F-E,S-D*
Marine pollutant: *No*
Propper shipping name: *ISOPROPANOL, mixture*

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: *3*
UN/ID Number: *1219*
Label *3*
Packaging group: *II*
Propper shipping name: *ISOPROPANOL, mixture*

15 Regulations

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	*propan-2-ol*

TSCA (Toxic Substances Control Act):
All ingredients are listed.

California Proposition 65

Chemicals known to cause cancer:
None of the ingredients is listed.

Chemicals known to cause reproductive toxicity:
WARNING: This product contains a chemical known to the State of California to cause birth defects and/or other reproductive harm.

Carcinogenicity categories

EPA (Environmental Protection Agency)
None of the ingredients is listed.

IARC (International Agency for Research on Cancer)

67-63-0	*propan-2-ol*	*3*

NTP (National Toxicology Program)
None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)
None of the ingredients is listed.

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.

(Contd. on page 7)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 04/11/2006 Reviewed on 04/11/2006

Trade name: 186

(Contd. of page 6)

CANADA: The following information relates to product regulation specific to 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 MSDS contains all of the information required by the CPR.
WHMIS Classification:
B2
D2B

EUROPEAN UNION
The following information relates to product regulation specific to the directives of the European Union.

Risk phrases:
Highly flammable.
Irritating to eyes.
May cause sensitisation by inhalation and skin contact.
Vapours may cause drowsiness and dizziness.

Safety phrases:
Keep out of the reach of children.
Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
Avoid contact with skin and eyes.
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
Wear suitable gloves.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
In case of accident by inhalation: remove casualty to fresh air and keep at rest.

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.

Department issuing MSDS: *Product Safety*