



Printing Date 09/15/2012

# SAFETY DATA SHEET (SDS)

According to 1907/2006/EC, Article 31

Version number 9

Reviewed on 09/15/2012

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Trade name: 44 Flux Core Solder**

**Relevant identified uses of the substance or mixture and uses advised against Solder**

Application of the substance / the preparation: Flux cored solder

**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

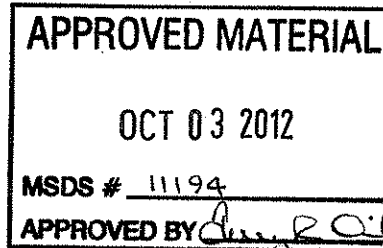
**Information department:**

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**



GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

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

**Label elements**

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

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

Hazard pictograms



GHS07 GHS08

Signal word Warning

Hazard-determining components of labelling:

lead

Rosin

Hazard statements

H332 Harmful if inhaled.

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H317 May cause an allergic skin reaction.

H361 Suspected of damaging fertility or the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**

P285 In case of inadequate ventilation wear respiratory protection.

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

P362 Take off contaminated clothing and wash before reuse.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P405 Store locked up.

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

**Classification system:****NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 1

Reactivity = 0

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

HEALTH	2
FIRE	1
REACTIVITY	0

Health = \*2

Fire = 1

Reactivity = 0

**Other hazards****Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

## 3 COMPOSITION OF MIXTURE

**Chemical characterization: Mixtures -****Description:** This product contains the substance(s) listed below:

CAS No.	Description	% Range
CAS: 7440-31-5 EINECS: 231-141-8	tin	50-100%
CAS: 7439-92-1 EINECS: 231-100-4	lead	◆ Acute Tox. 3, H301 ◆ Repr. 2, H361; STOT RE 2, H373 ◆ Acute Tox. 4, H332 25-50%
CAS: 8050-09-7 EINECS: 232-475-7	Rosin	◆ Acute Tox. 1, H300 ◆ Skin Sens. 1, H317 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.

Composition and weight percent of solder alloys varies widely and can be determined by product label.

Flux in core is typically 1-3% by weight.

## 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.**After swallowing:** Seek immediate medical advice.**Information for doctor:**

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

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

**5 FIREFIGHTING MEASURES****Extinguishing media****Suitable extinguishing agents:**CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**Special hazards arising from the substance or mixture**

Melted solder above 1000°F will liberate toxic lead fumes.

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbon dioxide (CO<sub>2</sub>)

Aliphatic aldehydes

**Advice for firefighters****Protective equipment:** Wear self-contained respiratory protective device.**6 ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation**Environmental precautions:** Do not allow to enter sewers/ surface or ground water.**Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Melted solder will solidify on cooling and can be scraped up. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces.

**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** Thorough dusting.**Information about protection against explosions and fires:** No special measures required.**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: Not required.

Further information about storage conditions:

Keep receptacle tightly sealed.

Store in dry conditions.

Exposure to sulfur or to high humidity will tarnish solder surface.

**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:**

7440-31-5 tin

PEL 2 mg/m<sup>3</sup>  
metal

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REL 2 mg/m<sup>3</sup>TLV 2 mg/m<sup>3</sup>  
metal**7439-92-1 lead**PEL 0.05\* mg/m<sup>3</sup>  
\*see 29 CFR 1910.1025REL 0.05 mg/m<sup>3</sup>  
excluding lead arsenate; See Pocket Guide App. CTLV 0.05\* mg/m<sup>3</sup>  
\*and inorganic compounds, as Pb; BEI**8050-09-7 Rosin**

TLV SEN; L

**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.

**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:**

Cloth 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**9 PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties****General Information****Appearance:**

Form:

Solid

Color:

Silver grey

Odor:

Mild

**pH-value:**

Not determined.

**Change in condition**

Melting point/Melting range: &gt; 100°C (&gt; 212 °F)

Undetermined.

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**Boiling point/Boiling range:** 1740°C (3164 °F)

**Flash point:** Undetermined.

**Auto igniting:** Product is not selfigniting.

**Danger of explosion:** Product does not present an explosion hazard.

**Density at 20°C (68 °F):** 7 g/cm<sup>3</sup> (58.415 lbs/gal)

**Solubility in / Miscibility with Water:** Not miscible or difficult to mix.

**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:**

**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:

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

through ingestion: May be harmful if swallowed.

**Additional toxicological information:**

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

Harmful

Irritant

**Carcinogenic categories**

IARC (International Agency for Research on Cancer)

7439-92-1 | lead

2B

NTP (National Toxicology Program)

7439-92-1 | lead

R

**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.

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*Danger to drinking water if even small quantities leak into the ground.***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, ADN, IMDG, IATA****ADR**

Not regulated

Not applicable

Not applicable

Not regulated

**UN proper shipping name****DOT, ADR, ADN****IMDG, IATA****Transport hazard class(es)**

Not regulated

Not applicable

Not regulated

**DOT, IMDG****Class**

Not applicable

Not regulated.

**ADR, ADN, IATA****Class**

Not applicable

**Packing group****DOT, ADR, IMDG, IATA****Environmental hazards:****Marine pollutant:****Special precautions for user****Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable

No

Not applicable.

Not applicable.

**Transport/Additional information:****UN "Model Regulation":**

Not dangerous according to the above specifications.

-

**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):**7439-92-1 | lead*

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**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:

**WARNING:** This product contains a chemical(s) known to the State of California to cause cancer.

lead

Chemicals known to cause reproductive toxicity:

**WARNING:** This product contains a chemical(s) known to the State of California to cause birth defects and/or other reproductive harm.

lead

### Carcinogenic categories

EPA (Environmental Protection Agency)

7439-92-1 | lead

B2

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: Not classified.

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

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

Hazard pictograms



GHS07 GHS08

Signal word Warning

Hazard-determining components of labelling:

lead

Rosin

Hazard statements

H332 Harmful if inhaled.

H317 May cause an allergic skin reaction.

H361 Suspected of damaging fertility or the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P285 In case of inadequate ventilation wear respiratory protection.

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

P362 Take off contaminated clothing and wash before reuse.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P405 Store locked up.

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

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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)

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

USA