

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 07/19/2017

Version number 5

Reviewed on 07/19/2017

1 Identification

Trade name: 245 Lead (Pb) Alloy Solder Wire
Relevant identified uses of the substance or mixture and uses advised against

No further relevant information available.

Application of the substance / the preparation: Flux cored solder

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

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 Hazard(s) identification

Classification of the substance or mixture


Health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 1 H360 May damage fertility or the unborn child.

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



Acute Tox. 4 H302 Harmful if swallowed.

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

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

Hazard pictograms


GHS07 GHS08

(Contd. on page 2)

US

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 07/19/2017

Version number 5

Reviewed on 07/19/2017

Trade name: 245 Lead (Pb) Alloy Solder Wire

(Contd. of page 1)

Signal word Danger

Hazard-determining components of labeling:

LEAD (Pb)

Modified Rosin

Hazard statements

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H360 May damage fertility or the unborn child.

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

Precautionary statements

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

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P302+P352 IF ON SKIN: Wash with plenty of water.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P405 Store locked up.

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

Classification system:
NFPA ratings (scale 0 - 4)

HMIS-ratings (scale 0 - 4)

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

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

CAS No.	Description	% Range
CAS: 7440-31-5	TIN (Sn)	55-70%
CAS: 7439-92-1	LEAD (Pb)	25-60%
Trade Secret	Modified Rosin	1.0-3.0%
CAS: 7440-22-4	SILVER (Ag)	0-3.0%

Additional information:

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

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 07/19/2017

Version number 5

Reviewed on 07/19/2017

Trade name: 245 Lead (Pb) Alloy Solder Wire

(Contd. of page 2)

4 First-aid measures

Description of first aid measures

General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

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.

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 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

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

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: No special measures required.

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.

Protective Action Criteria for Chemicals

PAC-1:

CAS: 7440-31-5	TIN (Sn)	6 mg/m ³
CAS: 7439-92-1	LEAD (Pb)	0.15 mg/m ³
CAS: 7440-22-4	SILVER (Ag)	0.3 mg/m ³

PAC-2:

CAS: 7440-31-5	TIN (Sn)	67 mg/m ³
CAS: 7439-92-1	LEAD (Pb)	120 mg/m ³
CAS: 7440-22-4	SILVER (Ag)	170 mg/m ³

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 07/19/2017

Version number 5

Reviewed on 07/19/2017

Trade name: 245 Lead (Pb) Alloy Solder Wire

(Contd. of page 3)

PAC-3:

CAS: 7440-31-5	TIN (Sn)	400 mg/m3
CAS: 7439-92-1	LEAD (Pb)	700 mg/m3
CAS: 7440-22-4	SILVER (Ag)	990 mg/m3

7 Handling and storage

Handling:
Precautions for safe handling Prevent formation of aerosols.

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:

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

CAS: 7440-31-5 TIN (Sn)

PEL Long-term value: 2 mg/m³
metal

REL Long-term value: 2 mg/m³

TLV Long-term value: 2 mg/m³
metal

CAS: 7439-92-1 LEAD (Pb)

PEL Long-term value: 0.05* mg/m³
*see 29 CFR 1910.1025

REL Long-term value: 0.05* mg/m³
*8-hr TWA ;See PocketGuide App.C

TLV Long-term value: 0.05* mg/m³
*and inorganic compounds, as Pb; BEI

CAS: 7440-22-4 SILVER (Ag)

PEL Long-term value: 0.01 mg/m³

REL Long-term value: 0.01 mg/m³

TLV Long-term value: 0.1 mg/m³
metal: dust and fume

Additional information:

PEL = Permissible Exposure Limit (OSHA)

TLV = Threshold Limit Value (ACGIH)

(Contd. on page 5)

US

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 07/19/2017

Version number 5

Reviewed on 07/19/2017

Trade name: 245 Lead (Pb) Alloy Solder Wire

(Contd. of page 4)

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:

When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.

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:

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

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: > 100 °C (> 212 °F)
Undetermined.

Boiling point/Boiling range: 1,740 °C (34,1364 °F)

Flash point: > 60 °C (> 140 °F)

Auto igniting: Product is not selfigniting.

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

Density at 20 °C (68 °F): 7 g/cm³ (58.415 lbs/gal)

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 07/19/2017

Version number 5

Reviewed on 07/19/2017

Trade name: 245 Lead (Pb) Alloy Solder Wire

(Contd. of page 5)

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

Solvent content:
Organic solvents: 0.2 %

Solids content: 99.9 %

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.

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

CAS: 7439-92-1 LEAD (Pb)

Oral	LD50	500 mg/kg (ATE)
Inhalative	LC50/4 h	11 mg/l (ATE)

Modified Rosin

Oral	LD50	>4,000 mg/kg (Rat)
Dermal	LD50	>2,500 mg/kg (rabbit)

Primary irritant effect:

on the skin: 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.

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

Carcinogenic categories

IARC (International Agency for Research on Cancer)

CAS: 7439-92-1	LEAD (Pb)	2B
----------------	-----------	----

(Contd. on page 7)

US

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 07/19/2017

Version number 5

Reviewed on 07/19/2017

Trade name: 245 Lead (Pb) Alloy Solder Wire

(Contd. of page 6)

NTP (National Toxicology Program)

CAS: 7439-92-1 | LEAD (Pb)

R

OSHA-Ca (Occupational Safety & Health Administration)

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.

Danger to drinking water if even small quantities leak into the ground.

The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary

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.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number

DOT, ADR, ADN, IMDG, IATA

Not applicable

UN proper shipping name

DOT, ADR, ADN, IMDG, IATA

Not applicable

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class

Not applicable

Packing group

DOT, IMDG, IATA

Not applicable

Marine pollutant:

No

Special precautions for user

Not applicable.

Transport in bulk according to Annex II of MARPOL73/78
and the IBC Code

Not applicable.

UN "Model Regulation":

Not applicable

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)

(Contd. on page 8)

US

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 07/19/2017

Version number 5

Reviewed on 07/19/2017

Trade name: 245 Lead (Pb) Alloy Solder Wire

(Contd. of page 7)

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: 7439-92-1 LEAD (Pb)

CAS: 7440-22-4 SILVER (Ag)

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 (Pb)

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 (Pb)

Carcinogenic categories

EPA (Environmental Protection Agency)

CAS: 7439-92-1 LEAD (Pb)

B2

CAS: 7440-22-4 SILVER (Ag)

D

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.

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

Hazard pictograms



GHS07 GHS08

Signal word Danger

Hazard-determining components of labeling:

LEAD (Pb)

Modified Rosin

Hazard statements

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H360 May damage fertility or the unborn child.

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

(Contd. on page 9)

US

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 07/19/2017

Version number 5

Reviewed on 07/19/2017

Trade name: 245 Lead (Pb) Alloy Solder Wire

(Contd. of page 8)

Precautionary statements

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- 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

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.

Department issuing Safety Data Sheet (SDS): Product Compliance / EHS Department

Contact: EHS_Kester@kester.com

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 Organisation
- ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (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
- 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
- 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
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Sens. 1: Skin sensitisation – Category 1
- Carc. 2: Carcinogenicity – Category 2
- Carc. 2: Carcinogenicity – Category 2
- Repr. 1: Reproductive toxicity – Category 1
- Repr. 1B: Reproductive toxicity – Category 1B
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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