Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 09/28/2018 Version number 4 Reviewed on 09/28/2018

*
1 Identification

Trade name: 282 Lead (Pb) Alloy Solder Wire
Relevant identified uses of the substance or mixture and uses advised against Professional use of lead solder

Application of the substance / the preparation:
Solder paste
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

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2 Hazard(s) identification

Classification of the substance or mixture


Health hazard

Carc. 2 H351 Suspected of causing cancer.
Repr. 1A H360 May damage fertility or the unborn child.

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled.
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).

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 09/28/2018 Version number 4 Reviewed on 09/28/2018

Trade name: 282 Lead (Pb) Alloy Solder Wire

(Contd. of page 1)

Hazard pictograms

GHS07 GHS08

Signal word Danger

Hazard-determining components of labeling:
LEAD (Pb)
Rosin
Hazard statements
H302+H332 Harmful if swallowed or if inhaled.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H360 May damage fertility or the unborn child.
Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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)

Health = 2
Fire = 0
Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = *1
Fire = 0
Reactivity = 0

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

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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)	Carc. 2, H351; Repr. 1B, H360 Acute Tox. 4, H302; Acute Tox. 4, H332	25-40%
CAS: 8050-09-7	Rosin	Skin Sens. 1, H317	0-5%

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 09/28/2018 Version number 4 Reviewed on 09/28/2018

Trade name: 282 Lead (Pb) Alloy Solder Wire

(Contd. of page 2)

SVHC 7439-92-1 LEAD (Pb)

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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:
In case of unconsciousness place patient stably in side position for transportation.
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
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.

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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.

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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.
Scoop up paste and deposit in appropriate containers.
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/m³
CAS: 7439-92-1	LEAD (Pb)	0.15 mg/m³
CAS: 8050-09-7	Rosin	72 mg/m³

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 09/28/2018 Version number 4 Reviewed on 09/28/2018

Trade name: 282 Lead (Pb) Alloy Solder Wire

(Contd. of page 3)

PAC-2:		
CAS: 7440-31-5	TIN (Sn)	67 mg/m³
CAS: 7439-92-1	LEAD (Pb)	120 mg/m³
CAS: 8050-09-7	Rosin	790 mg/m³

PAC-3:		
CAS: 7440-31-5	TIN (Sn)	400 mg/m³
CAS: 7439-92-1	LEAD (Pb)	700 mg/m³
CAS: 8050-09-7	Rosin	1,500 mg/m³

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7 Handling and storage

Handling:
Precautions for safe handling
Thorough dedusting.
Open and handle receptacle with care.
Information about protection against explosions and fires: Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles:
Store in a cool location.
Store at or near 5°C in a dry location.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep receptacle tightly sealed.
Specific end use(s) No further relevant information available.

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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:	
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: 8050-09-7 Rosin	
TLV	DSEN, RSEN, L

Additional information:
PEL = Permissible Exposure Limit (OSHA)
TLV= Threshold Limit Value (ACGIH)
OSHA= Occupational Safety and Health Administration

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 09/28/2018 Version number 4 Reviewed on 09/28/2018

Trade name: 282 Lead (Pb) Alloy Solder Wire

(Contd. of page 4)

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.
Store protective clothing separately.
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:
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

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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 applicable.

Change in condition
Melting point/Melting range: 183 °C (361.4 °F)
Undetermined.

Flash point: Not applicable.

Flammability (solid, gaseous): Not determined.

Auto igniting: Product is not selfigniting.

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

Vapor pressure: Not applicable.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 09/28/2018 Version number 4 Reviewed on 09/28/2018

Trade name: 282 Lead (Pb) Alloy Solder Wire

(Contd. of page 5)

Density: Not determined.
Vapor density Not applicable.

Solubility in / Miscibility with Water: Insoluble.

Solvent content:

Solids content: 99.8 %

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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.

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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	1.5 mg/l (ATE)

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.
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

Carcinogenic categories

IARC (International Agency for Research on Cancer)		
CAS: 7439-92-1	LEAD (Pb)	2B

NTP (National Toxicology Program)		
CAS: 7439-92-1	LEAD (Pb)	R

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 09/28/2018 Version number 4 Reviewed on 09/28/2018

Trade name: 282 Lead (Pb) Alloy Solder Wire

(Contd. of page 6)

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

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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.

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13 Disposal considerations

Waste treatment methods
Recommendation:
Disposal must be made according to official regulations.
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.

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14 Transport information

UN-Number	
DOT, ADR, ADN, IMDG, IATA	Not applicable
UN proper shipping name	
DOT, ADR, ADN	Not applicable
IMDG, IATA	Not applicable
	Not regulated
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

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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)

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 09/28/2018 Version number 4 Reviewed on 09/28/2018

Trade name: 282 Lead (Pb) Alloy Solder Wire

(Contd. of page 7)

Europe: European Inventory of Existing Commercial Chemical Substances (EINECS)
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)

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

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)
Rosin
Hazard statements
H302+H332 Harmful if swallowed or if inhaled.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H360 May damage fertility or the unborn child.
Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 09/28/2018 Version number 4 Reviewed on 09/28/2018

Trade name: 282 Lead (Pb) Alloy Solder Wire

(Contd. of page 8)

P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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.

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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 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
SVHC: Substances of Very High Concern
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
Repr. 1A: Reproductive toxicity – Category 1A
Repr. 1B: Reproductive toxicity – Category 1B
*** Data compared to the previous version altered.**