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

Printing Date 06/19/2017 Version number 2 Reviewed on 06/19/2017

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1 Identification

Trade name: EP256HA Solder Paste
Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

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-H362	May damage fertility or the unborn child. May cause harm to breast-fed children.
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure.


Corrosion

Eye Dam. 1	H318	Causes serious eye damage.

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

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

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Hazard pictograms

GHS05 GHS07 GHS08

Signal word Danger

Hazard-determining components of labeling:
LEAD (Pb)
Hexyl diglycol
1,2,5,6,9,10- hexabromocyclododecane

Hazard statements
H302+H332 Harmful if swallowed or if inhaled.
H318 Causes serious eye damage.
H351 Suspected of causing cancer.
H360-H362 May damage fertility or the unborn child. May cause harm to breast-fed children.
H373 May cause damage to organs through prolonged or repeated exposure.

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.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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:	
CAS: 3194-55-6	1,2,5,6,9,10- hexabromocyclododecane

vPvB: Not applicable.

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3 Composition/information on ingredients

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

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CAS No.	Description	% Range
CAS: 7440-31-5	TIN (Sn)	55-70%
CAS: 7439-92-1	LEAD (Pb) Carc. 2, H351; Repr. 1B, H360; STOT RE 2, H373 Acute Tox. 4, H302; Acute Tox. 4, H332	25-40%
CAS: 112-59-4	Hexyl diglycol Eye Dam. 1, H318 Acute Tox. 4, H302; Acute Tox. 4, H312	3.0-5.0%
CAS: 7440-22-4	SILVER (Ag)	0-3.0%
Trade Secret	Aromatic monocarboxylic acid Acute Tox. 4, H302; Eye Irrit. 2A, H319; Skin Sens. 1B, H317	0.1-<1%
CAS: 3194-55-6	1,2,5,6,9,10- hexabromocyclododecane PBT Repr. 2, H361-H362	0.1-≤1%

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.

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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:
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.
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.

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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: 112-59-4	Hexyl diglycol	3.7 mg/m3
CAS: 7440-22-4	SILVER (Ag)	0.3 mg/m3
PAC-2:		
CAS: 7440-31-5	TIN (Sn)	67 mg/m3
CAS: 7439-92-1	LEAD (Pb)	120 mg/m3
CAS: 112-59-4	Hexyl diglycol	41 mg/m3
CAS: 7440-22-4	SILVER (Ag)	170 mg/m3
PAC-3:		
CAS: 7440-31-5	TIN (Sn)	400 mg/m3
CAS: 7439-92-1	LEAD (Pb)	700 mg/m3
CAS: 112-59-4	Hexyl diglycol	480 mg/m3
CAS: 7440-22-4	SILVER (Ag)	990 mg/m3

7 Handling and storage

Handling:
Precautions for safe handling Thorough dedusting.
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.
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 other constituents have 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

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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)
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:
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

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.

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Change in condition
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 260 °C (500 °F)

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.

Density: Not determined.
Vapor density Not applicable.

Solubility in / Miscibility with
Water: Insoluble.

Solvent content:
Organic solvents: 0.0 %

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: No further relevant information available.
Hazardous decomposition products: No dangerous decomposition products known.

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: No irritant effect.
on the eye: Irritating effect.
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

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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

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.
Results of PBT and vPvB assessment

PBT:	
CAS: 3194-55-6	1,2,5,6,9,10- hexabromocyclododecane

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
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)
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

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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: 112-59-4	Hexyl diglycol
CAS: 7440-22-4	SILVER (Ag)

California Proposition 65

Chemicals known to cause cancer:
LEAD (Pb)

Chemicals known to cause reproductive toxicity:
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

GHS05 GHS07 GHS08

Signal word Danger

Hazard-determining components of labeling:
LEAD (Pb)
Hexyl diglycol
1,2,5,6,9,10- hexabromocyclododecane

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Hazard statements
H302+H332 Harmful if swallowed or if inhaled.
H318 Causes serious eye damage.
H351 Suspected of causing cancer.
H360-H362 May damage fertility or the unborn child. May cause harm to breast-fed children.
H373 May cause damage to organs through prolonged or repeated exposure.
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.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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 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:
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
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1B: Skin sensitisation – Category 1B
Carc. 2: Carcinogenicity – Category 2
Carc. 2: Carcinogenicity – Category 2
Repr. 1: Reproductive toxicity – Category 1
Repr. 1B: Reproductive toxicity – Category 1B
Repr. 2: Reproductive toxicity – Category 2
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
*** Data compared to the previous version altered.**