SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Leadfree Solder Wire Tin-Copper Alloy with Resin based Flux

Further trade names

possible alloys: SN100C - SnCu0,7Ni; SN100C3 - SnCu3,0Ni; SN100CS - SnCu0,7NiGe Sn97Cu3; Sn99Cu1; Sn99,3Cu0,7

2220; 3135; B2012; 26Q; 32Q; B211; Cobar 393

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Solder wire

Uses advised against

any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name: Balver Zinn Josef Jost GmbH & Co. KG
Street: Blintroper Weg 11
Place: D-58802 Balve
Telephone: +49 2375 915-0 Telefax: +49 2375 915-1700
Responsible Department: sds@balverzinn.com

1.4. Emergency telephone number:

Chemtrec: +44(0) 870-8200418

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

This mixture is not classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

2.2. Label elements

Additional advice on labelling

Labelling according to Regulation (EC) No. 1272/2008 [CLP]: none

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
No risks worthy of mention. Please observe the information on the safety data sheet at all times.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Solder wire

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
7440-31-5	tin			>90 %
	231-141-8		01-2119486474-28	
7440-50-8	copper			0,5 - 3 %
	231-159-6			

65997-06-0	Rosin, hydrogenated			1 - < 5 %
	266-041-3			
7440-02-0	nickel			0 - 0,05 %
	231-111-4	028-002-00-7	01-2119438727-29	
	Carc. 2, Skin Sens. 1, STOT RE 1; H351 H317 H372			

Full text of H and EUH statements: see section 16.

Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. When in doubt or if symptoms are observed, get medical advice.

After contact with skin

No special measures are necessary.
The melted product can cause severe burns. After contact with molten product, cool skin area rapidly with cold water. Burns caused by molten material must be treated clinically.

After contact with eyes

No special measures are necessary.

After ingestion

No special measures are necessary.

4.2. Most important symptoms and effects, both acute and delayed

No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Sand
Extinguishing powder
D -powder

Unsuitable extinguishing media

Extinguishing media which must not be used for safety reasons:
Water
High power water jet
Water spray jet

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: Gas/vapours, irritant. Carbon monoxide Carbon dioxide (CO2). Nitrogen oxides (NOx). Metal oxide smoke, toxic

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See protective measures under point 7 and 8.

6.2. Environmental precautions

No special measures are necessary.

6.3. Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal.
Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Provide adequate ventilation as well as local exhaustion at critical locations.
Do not breathe smoke. Do not breathe dust.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Further information on handling

General protection and hygiene measures: See section 8.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

No special measures are necessary.

Advice on storage compatibility

Do not store together with: Explosives. Oxidizing solids. Oxidizing liquids. Radioactive substances. Infectious substances.

7.3. Specific end use(s)

refer to chapter 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
7440-50-8	Copper, dusts and mists (as Cu)	-	1		TWA (8 h)	WEL
		-	2		STEL (15 min)	WEL
7440-50-8	Copper, fume	-	0.2		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
-	Nickel and its inorganic compounds (except nickel tetracarbonyl): nickel and water-insoluble nickel compounds (as Ni)	-	0.5		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
-	Tin compounds, inorganic, except SnH4, (as Sn)	-	2		TWA (8 h)	WEL
		-	4		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
7440-31-5	tin		
Consumer DNEL, long-term	inhalation	systemic	3,476 mg/m³
Consumer DNEL, acute	inhalation	systemic	3,476 mg/m³
Worker DNEL, long-term	inhalation	systemic	11,75 mg/m³
Worker DNEL, acute	inhalation	systemic	11,75 mg/m³
Consumer DNEL, long-term	dermal	systemic	80 mg/kg bw/day
Worker DNEL, acute	dermal	systemic	133,3 mg/kg bw/day
Consumer DNEL, acute	dermal	systemic	80 mg/kg bw/day
Worker DNEL, long-term	dermal	systemic	133,3 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	80 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	80 mg/kg bw/day
7440-50-8	copper		
Worker DNEL, acute	dermal	systemic	273 mg/kg bw/day
Consumer DNEL, acute	dermal	systemic	273 mg/kg bw/day
Consumer DNEL, acute	inhalation	systemic	20 mg/m³
Worker DNEL, long-term	inhalation	local	1 mg/m³
Consumer DNEL, long-term	dermal	systemic	137 mg/kg bw/day
Worker DNEL, long-term	dermal	systemic	137 mg/kg bw/day
Worker DNEL, acute	inhalation	systemic	20 mg/m³
Consumer DNEL, long-term	inhalation	local	1 mg/m³
7440-02-0	nickel		
Worker DNEL, acute	inhalation	systemic	680 mg/m³
Worker DNEL, long-term	inhalation	local	0,05 mg/m³
Worker DNEL, long-term	inhalation	systemic	0,05 mg/m³
Worker DNEL, acute	inhalation	local	4 mg/m³
Worker DNEL, long-term	dermal	local	0,035 mg/cm²

Consumer DNEL, long-term	inhalation	systemic	0,02 mg/m³
Consumer DNEL, acute	inhalation	systemic	408 mg/m³
Consumer DNEL, long-term	inhalation	local	0,02 mg/m³
Consumer DNEL, acute	inhalation	local	2,4 mg/m³
Consumer DNEL, long-term	dermal	local	0,035 mg/cm²
Consumer DNEL, long-term	oral	systemic	0,02 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	0,012 mg/kg bw/day

PNEC values

CAS No	Substance
Environmental compartment	Value
7440-50-8	copper
Freshwater	0,0078 mg/l
Marine water	0,0052 mg/l
Freshwater sediment	87 mg/kg
Marine sediment	678 mg/kg
Micro-organisms in sewage treatment plants (STP)	0,23 mg/l
Soil	65 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

Protective and hygiene measures

Keep away from food, drink and animal feedingstuffs. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff. Use protective skin cream before handling the product.

Eye/face protection

Wear eye/face protection.

Hand protection

Wear suitable gloves.
for coarse soldering works: heat insulating.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
In the case of wanting to use the gloves again, clean them before taking off and air them well. Before using check leak tightness / impermeability.
For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Protective clothing (heat-resistant)

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.
Respiratory protection necessary at:
Insufficient ventilation.
exceeding exposure limit values
Suitable respiratory protective equipment: Particle filter device (DIN EN 143) Type: P2/3

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.
Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

Environmental exposure controls

No special environmental measures are necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid
Colour:	metallic, silver
Odour:	odourless
pH-Value:	not applicable

Changes in the physical state

Melting point:	not determined
Initial boiling point and boiling range:	not determined
Sublimation point:	not determined
Softening point:	not determined
Flash point:	not determined

Flammability

Solid:	not determined

Explosive properties

none

Lower explosion limits:	not determined
Upper explosion limits:	not determined
Ignition temperature:	not determined

Auto-ignition temperature

Solid:	not determined
Decomposition temperature:	not determined

Oxidizing properties

none

Vapour pressure:	not determined
Density:	not determined
Bulk density:	not determined
Water solubility:	insoluble

Solubility in other solvents

insoluble

Viscosity / dynamic:	not determined
Viscosity / kinematic:	not determined

9.2. Other information

Solid content:	not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

No information available.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

Can be released in case of fire: Metal oxide smoke, toxic

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

No information available.

Acute toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7440-31-5	tin				
	oral	LD50 >2000 mg/kg	Rat	ECHA Dossier	
	dermal	LD50 >2000 mg/kg	Rat	ECHA Dossier	
	inhalation (4 h) aerosol	LC50 (>4,75) mg/l	Rat	ECHA Dossier	
7440-50-8	copper				
	inhalation (4 h) aerosol	LC50 >5,11 mg/l	Rat	ECHA Dossier	
7440-02-0	nickel				
	oral	LD50 > 5000 mg/kg	Rat	ECHA Dossier	
	inhalation aerosol	LC50 10,2 mg/l	Rat	ECHA Dossier	

Irritation and corrosivity

Based on available data, the classification criteria are not met.
Skin corrosion/irritation: Not an irritant.
Serious eye damage/eye irritation: Not an irritant.

Sensitising effects

Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation: not sensitising.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Specific effects in experiment on an animal

No data available

SECTION 12: Ecological information

12.1. Toxicity

No data available

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] | [d]	Species	Source	Method
7440-02-0	nickel					
	Acute fish toxicity	LC50 > 100 mg/l	96 h	Danio rerio	ECHA Dossier	
	Acute algae toxicity	ErC50 > 100 mg/l	72 h	Selenastrum capricornutum	ECHA Dossier	
	Acute crustacea toxicity	EC50 > 100 mg/l	48 h	Daphnia magna	ECHA Dossier	

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. According to EAKV, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.
Control report for waste code/ waste marking according to EAKV:

Waste disposal number of waste from residues/unused products

160304 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; inorganic wastes other than those mentioned in 16 03 03

Waste disposal number of used product

160304 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; inorganic wastes other than those mentioned in 16 03 03

Waste disposal number of contaminated packaging

150106 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); mixed packaging

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	Not restricted
14.2. UN proper shipping name:	Not restricted
14.3. Transport hazard class(es):	Not restricted
14.4. Packing group:	Not restricted

Inland waterways transport (ADN)

14.1. UN number:	Not restricted
14.2. UN proper shipping name:	Not restricted
14.3. Transport hazard class(es):	Not restricted
14.4. Packing group:	Not restricted

Marine transport (IMDG)

14.1. UN number:	Not restricted
14.2. UN proper shipping name:	Not restricted
14.3. Transport hazard class(es):	Not restricted
14.4. Packing group:	Not restricted

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	Not restricted
14.2. UN proper shipping name:	Not restricted
14.3. Transport hazard class(es):	Not restricted
14.4. Packing group:	Not restricted

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Not restricted

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not restricted

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 27: nickel

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

Additional information

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].
REACH 1907/2006 Appendix XVII, No: not relevant

National regulatory information

Water contaminating class (D): 1 - slightly water contaminating

Additional information

Observe technical data sheet.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Changes

Rev. 1.00; 22.05.2015, Initial release
Rev.1.1; 22.09.2016, Indication of changes - chapter: 1, 16.
Rev.2.0; 17.04.2018, Changes in chapter: 15

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
CAS Chemical Abstracts Service
DNEL: Derived No Effect Level
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
LOAEL: Lowest observed adverse effect level
LOAEC: Lowest observed adverse effect concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NOAEL: No observed adverse effect level
NOAEC: No observed adverse effect level
NTP: National Toxicology Program
N/A: not applicable
OSHA: Occupational Safety and Health Administration
PNEC: predicted no effect concentration
PBT: Persistent bioaccumulative toxic
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
SARA: Superfund Amendments and Reauthorization Act
SVHC: substance of very high concern
TRGS Technische Regeln fuerGefahrstoffe
TSCA: Toxic Substances Control Act
VOC: Volatile Organic Compounds
VwVwS: Verwaltungsvorschrift wassergefaehrdender Stoffe
WGK: Wassergefaehrdungsklasse

Relevant H and EUH statements (number and full text)

H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

Further Information

Classification according EC regulation 1272/2008 (CLP): - Classification procedure:
Health hazards: Calculation method.
Environmental hazards: Calculation method.
Physical hazards: On basis of test data. and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product

named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)