

MATERIAL SAFETY DATA SHEET ACCORDING TO (EC) NO. 1907/2006

Tradename: VD90.5101 / VD90.5104 / VD90.5105 / VD90.5106 / VD90.5108 / VD90.5109 /
VD90.5110 / VD90.5111 / VD90.5115 MARTIN Solder Balls (LF)

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1. Identification of the substance/preparation and of the company

1.1 Identification of the substance/preparation

MARTIN Solder Balls lead free
Alloy: SnAgCu

1.2 Company/undertaking identification

MARTIN GmbH
Argelsrieder Feld 1b
D-82234 Wessling
Phone: +49-8153-932 93-0
Fax: +49-8153-932 93-9
www.martin-smt.de

1.3 Emergency telephone

Please contact the nearest poison emergency center.

2. Hazards identification

2.1 Classification of the substance or mixture:

• Classification according to Regulation (EC) No. 1272/2008 (CLP- Regulation):

For products there is no obligation to classify acc. to CLP- Regulation.

• Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Not applicable

• Information concerning particular hazards for human and environment

Not applicable

2.2 Label elements

As supplied contact with the product in any danger and thus there is no labeling requirement.

2.3 other hazards

The product is not hazardous as shipped. The main health hazards associated with this product arising from any use as Lot. The information in this data sheet thus ensure the health dangers of using this product is a lot. When heated metal and Metalloxiddämpfe can escape, but hardly exceed the occupational exposure limit value under normal conditions. However, overheating can cause smoke emission in harmful concentrations.

Metal vapors may irritate the upper respiratory tract, nose and throat. Metal dust in powder form is irritating to the eyes and is harmful if its intake.

• Prävention:

Obtain special instructions before use.

Avoid release to the environment.

• Reaction:

Call a poison control center or doctor.

• Disposal:

Disposal in accordance with local / regional / national / international regulations.

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3. Composition/Information on ingredients

3.1 Material
Not applicable

3.2 Mixture
Description:
Metal alloy in compact form
The starting materials (pure substances) no longer act as a single component.

• Information:

The classifications mentioned below reflect the respective pure substance and are for information only. Tin alloys are special preparations according to Regulation (EC) 1907/2006 (REACH Regulation). The classification of a pure substance is not applicable to its use as element of a copper alloy.

Alloy components	
Tin (Sn) CAS Nr: 7440-31-5 EG Nr: 231-141-8	not classified
Silver (Ag) CAS Nr: 7440-22-4 EG Nr: 231-131-3	not classified
Copper (Cu) CAS Nr: 7440-50-8 EG Nr: 231-159-6	 

4. First aid measures

4.1 General information:
No special measures required.
The information on first aid related to any resulting dust and fumes.

4.2 After inhalation:
Injured person using self protection from the danger zone to fresh air. After inhalation of vapors / fumes or massive dust exposure:
As soon as possible glucocorticoid dose aerosol can breathe repeated deep inhalation. If breathing is difficult patient inhales oxygen. Provide medical treatment.
The Symptoms of poisoning may even occur later. Seek medical attention if problems persist.

4.3 After Skin Contact:
Remove contaminated clothing. Rough metal dust can be removed from the skin first carefully mechanically (eg with a soft brush). Then clean under running water with soap. Care should be taken to ensure that no particles are rubbed into the skin or minor skin wounds. The medical advice irritation occurs or other symptoms.

4.4 After eye contact:
Rinse eye under protection of uninjured eye for 10 minutes under running water with eyelids held open wide. Remove contact lenses, if possible. In case of troubles or persistent symptoms, went to a eye specialist

4.5 After swallowing:
Rinse the mouth and spit out. Provide medical treatment. Do not induce vomiting unless directed to do so by medical personnel.

5. Firefighting measures

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5.1 Suitable extinguishers

Metal fire extinguisher

5.2 Unsuitable extinguishers

Water

5.4 Special hazards arising from the substance or mixture

No further relevant information available.

5.5 Advice for firefighters

In case of fire: Use self-contained breathing apparatus.
Collect contaminated firefighting water separately.
Do not allow to enter the water in drains or watercourses.

6. Accidental release measures

6.1 Personal precautions

Use dust mask, Take up mechanically, avoid dust, then Ventilate area and wash contaminated objects and floors.

6.2 Environmental precautions

Do not discharge into drains, surface water, ground water.
Not in underground allow to enter soil.

6.3 Methods and material for containment and cleaning up

Take up mechanically and collect in suitable container for disposal. Avoid generation of dusts.

6.4 Additional Information

See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7. Handling and storage

7.1 Handling

• Precautions for safe handling:
Wear personal protective equipment.
Ensure good ventilation, if necessary suck at work.
Avoid dust formation and deposition of dust.

• Precautions against fire and explosion:
Avoid formation of dust

• Further information on handling:
Do not eat, drink, smoke or take drugs.

7.2 Storage

• Requirements for storage rooms and vessels:
Likelihood of confusion! Containers must be clearly and permanently labeled. Keep container tightly closed. Storage temperature: no restrictions. Store dry.

• Further information on storage conditions:
Store away from foodstuffs. store dry.

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8. Exposure controls/personal protection

8.1 Control parameters

7440-31-5 Zinn	
MAK	2 E mg/m ³ Deutschland
7440-22-4 Silver	
MAK	0,1 mg/m ³ inhalable aerosol fraction

8.2 Limitation and monitoring of exposure

• General protective and hygienic measures:

Do not eat, drink, smoke or take drugs.

Keep away from food

Wash hands before breaks and at the end of work. Do not inhale dust / smoke / mist.

• Respiratory protection:

Use a suitable industrial gas mask when work-place-limits are exceeded.

• Protection of hands:

Protective gloves are recommended, depending upon how the semis are further processed

• Eye Protection:

Protective goggles are recommended, depending upon how the semis are further processed

• Body protection:

Wear suitable protective clothing, depending upon how the semis are further processed



9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

aggregate state:	Solid
Colour:	silver- grey
Odour:	Odourless
pH- value:	No data available
<u>Change of state:</u>	
Melting temperature:	see material data sheet
Boiling point:	No data available
Flash point:	No data available
<u>Flammability:</u>	
Solid:	No data available
<u>Explosion hazard:</u>	
Lower explosion limit:	No data available
Under explosion limit:	No data available
Ignition temperature:	No data available
<u>Auto- ignition temperature:</u>	
Solid:	No data available
<u>Oxidising properties:</u>	
Vapor pressure:	No data available
Density:	see material data sheet
Bulk density:	No data available
Water solubility:	insoluble
Partition coefficient:	No data available
Evaporation rate:	No data available

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9.2 other information

No data available

10. Stability and reactivity

10.1 Reactivity

When used according to specifications Dangerous reactions aren't to be expected. For silver see point 10.3

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of hazardous reactions

Silver: Risk of explosion by exothermic reaction with:

acetylidene
ammonia
ammonium compounds
azides
ethylene oxide
fluorine
oxalic acid
Performic acid
peroxi
hydrogen peroxide
Reactions with organic substances.
zinc

10.4 Conditions to avoid

No further relevant information available.

10.5 Incompatible materials

Strong oxidant

10.6 Hazardous decomposition products:

No dangerous decomposition products known.

11. Toxicological information

11.1 Acute toxicity:

Sn: No data available

Cu: No data available

Ag: oral LD₅₀ >2000 mg/kg (Ratte)
dermal LD₅₀ >2000 mg/kg (Ratte)
inhalativ LC₅₀/4h *(s. Abschnitt 12) >5,16 mg/l (Ratte)

11.2 Irritation effects in animal experiments

No data available

11.3 Irritation and corrosivity

No irritant effect

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11.4 Additional toxicological information:

When used and handled according to specifications, the article does not have any harmful effects to our experience and the information provided to us.

11.5 Sensitization

No sensitizing effects known.

12. Ecological information

12.1 Toxicity

WGK (water hazard class):

tin (WGK 1), silver (WGK 3), copper (WGK 3)
Prevent spread into groundwater or drains.

12.2 Persistence and degradability

Tin, silver alloys are not biodegradable and can't therefore enter the environment.

12.3 Bioaccumulative potential

No further relevant information available

12.4 Mobility in soil

No further relevant information available

12.5 Results of PBT and vPvB assessment

PBT: Not applicable to metals
vPvB: Not applicable to metals

12.6 Other adverse effects

No further relevant information available

13. Disposal considerations

13.1 Recommendation:

Must not be disposed together with household garbage. Do not empty into drains. If recycling is not possible, waste must be disposed of in accordance with local authority requirements.

13.2 Contaminated packaging:

Disposal according to official regulations.

14. Transport information

14.1 Transport

- **Transport by car ADR/RID and GGVSE (cross-boarder / inland):**
- **ADR/RID- GGVSE class: -**
- **Transport by ship IMDG/GGV See:**
- **IMDG/GGVSee- class: -**
- **Transport by plane ICAO-TI and IATA-DGR:**
- **ICAO/IATA- class: -**

14.5 Additional information

Not dangerous according to the above

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15. Regulatory information

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

• Labelling according to EU guidelines:

Handle in accordance with good industrial hygiene and safety practice.

The product is presented as supplied neither to human health by inhalation or skin contact or dangerous waters there

No label required under Directive 67/548 / EEC Annex VI no. 9.3.

Although this product is not subject to identification regulations, we recommend that you perform resulting from the classification markings in the information sheet

• Code letter and hazard designation:

No labeling

•Hazard statements

H228	Flammable solid.
H410	Very toxic to aquatic life with long lasting effects.

•Precautionary statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P501	Dispose of contents/container to appropriate disposal site

15.2 National regulations:

• Information about limitation:

No data available

•statutory order on hazardous incidents:

statutory order on hazardous incidents, appendix 1, not mentioned

• Waterhazard class:

WGK (water hazard class):

Zinn (WGK 1), silver (WGK 3), copper (WGK 3)

16. Other information

The statements made here should describe the product with regards to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge. No responsibility.

16.1 Abbreviations and Acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulation by the "International air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

IACO-TI: Technical Instructions by the "Civil Aviation Organization" (ICAO)

CAS: Chemicals Abstracts service

GefStoffV: Gefahrstoffverordnung

PBT: persistent, bioakkumulierend, toxisch

vPvB: sehr persistent, sehr bioakkumulierend

VwVwS: Verwaltungsvorschrift wassergefährdender Stoffe