

Material & Safety Data Sheet

According to 1907/2006/EC

Document : MBO Lead Alloys

Created date: 03/12/09 - Updated: 11/03/11 - Update Nr : 01

RS REACH revision date 01/08/12

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**1- IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY:****- Trade name:****MBO Lead Alloys****- Available alloys:****- Tin/Lead:**

Pb99.5Sb0.5 – Pb97.5Ag2.5- Sn5Pb95 - Sn8Pb92 - Sn10Pb90
 - Sn15Pb85 - Sn20Pb80 – Sn28Pb72 -Sn30Pb70 - Sn33Pb67 -
 Sn40Pb60 - Sn50Pb50 – Sn60Pb40 - Sn60 HT -60HTF -
 Sn63Pb37 - (Sn63Pb37 Nitralloy -Cleanalloy -Extralloy - G2
 - G3)

- Trimetals:

Sn5Pb93.5Ag1.5 (300Ag) – Sn5Pb92.5Ag2.5 - Sn20Pb79Sb1 –
 Sn27PbAg3 –Sn 43Pb43Bi14 - Sn50Pb49.5Sb0.5 -
 Sn50Pb47Bi3 – Sn50PbCu - Sn60PbCu2 - Sn60PbBi2.4 –
 Sn62Pb36Ag2 – Sn60PbAg3

- Application of the substance/preparation:

Soft soldering

- Manufacturer:

M.B.O.
 Rue de la Fonderie
 21806 CHEVIGNY-SAINT-SAUVEUR CEDEX
 FRANCE

Tel. 00.33.(0)3.80.46.12.58

Fax. 00.33.(0)3.80.46.66.59

admin@mbosolder.com**- Contact:****MBO Technical Management**

Supplied by:
RS Components Ltd.
 Birchington Road, Corby, Northants, NN17 9RS.
 Tel: +44 (0) 1536 402888 (8am to 8pm)
 Email: technical.help@rs-components.com

2- HAZARDS IDENTIFICATION:**- Hazard description:**

The product is not classified as dangerous.

- Information concerning particular hazards for human and environment:

The product could cause burns during soldering.

Its use during soldering may produce or release fumes (no trace of lead in fumes at temperatures below 500°C).

- Prevention:

It is recommended to wear safety glasses, protective gloves, to wash hands after use and to work with a good ventilation of area, and suitable fumes extraction system locally installed.

- GHS label elements:

None

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**3- COMPOSITION/INFORMATION ON INGREDIENTS:**

Product (metal)	Symbol	CAS n°	EC n°	R Phrases	S Phrases	%
Tin	Sn	7440-31-5	231-141-8	-	-	See table below
Copper	Cu	7440-50-8	231-159-6	-	-	
Silver	Ag	7440-22-4	231-131-3	-	-	
Bismuth	Bi	7440-69-9	231-177-4	-	-	
Antimony	Sb	7440-36-0	231-146-5	-	-	
Lead	Pb	7439-92-1	231-100-4	-	-	

Alloys composition	Tin %	Lead %	Copper %	Silver %	Bismuth %	Antimony %
Pb99.5Sb0.5	-	99.5	-	-	-	0.5
Pb97.5Ag2.5	-	97.5	-	2.5	-	-
Sn5Pb95	5	95	-	-	-	-
Sn8Pb92	8	92	-	-	-	-
Sn10Pb90	10	90	-	-	-	-
Sn15Pb85	15	85	-	-	-	-
Sn20Pb80	20	80	-	-	-	-
Sn28Pb72	28	72	-	-	-	-
Sn30Pb70	30	70	-	-	-	-
Sn33Pb67	33	67	-	-	-	-
Sn40Pb60	40	60	-	-	-	-
Sn50Pb50	50	50	-	-	-	-
Sn60Pb40	60	40	-	-	-	-
Sn60 HT -60HTF	60	39.9	0.1	-	-	-
Sn63Pb37	63	37	-	-	-	-
Sn5Pb93.5Ag1.5 (300Ag)	5	93.5	-	1.5	-	-
Sn5Pb92.5Ag2.5	5	92.5	-	2.5	-	-
Sn20Pb79Sb1	20	79	-	-	-	1
Sn27PbAg3	27	70	-	3	-	-
S43Pb43Bi14	43	43	-	-	14	-
Sn50Pb49.5Sb0.5	50	49.5	-	-	-	0.5
Sn50Pb47Bi3	50	47	-	-	3	-
Sn50PbCu	50	39	1	-	-	-
Sn60PbCu2	60	38	2	-	-	-
Sn60PbBi2.4	60	37.6	-	-	2.4	-
Sn62Pb36Ag2	62	36	-	2	-	-
Sn60PbAg3	60	37	-	3	-	-

4- FIRST AID MEASURES:**- General information:**

Take affected persons out into the fresh air.

Take affected persons out of danger area and lay down.

- After inhalation:

Take affected persons into fresh air.

If irritation persists, get medical attention.

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**- After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation persists, get medical attention.

If burns should occur from molten metal, treat for burn and get medical assistance if necessary.

- After eye contact:

Rinse opened eye for several minutes under running water.

Get medical attention if irritation occurs.

- After swallowing:

Call for a doctor immediately.

Do not induce vomiting unless directed to do so by medical personnel.

5- FIRE-FIGHTING MEASURES:**Non-flammable product****- Suitable extinguishing agents:**

Dry chemical powder, water spray or foam.

- Extinguishing agents to avoid:

Do not use water jet on fire where molten metal is present.

- Special hazards caused by the substance, its products of combustion or resulting gases:

Molten metal produces fumes or vapours (no trace of lead in fumes at temperatures below 500°C).

Lead vapors may be given off above 500°C if the product is in a nearby fire.

Molten metal reacts violently with oxidising agents.

- Protective equipment:

Wear appropriate self-contained breathing apparatus.

Do not inhale combustion gases.

Wear full body protective clothing

6- ACCIDENTAL RELEASE MEASURES:**- Person-related safety precautions:**

Remove persons from danger area.

Wear protective equipment. Keep unprotected persons away.

Use respiratory protective device against the effects of fumes/dust.

Ensure adequate ventilation.

- Measures for environmental protection:

Do not allow to enter sewers/ surface or ground water.

- Measures for cleaning/collecting:

After cooling, collect the released product and store it in sealed containers.

- Additional information:

Exposure levels indicated in section 8 are relevant to these and other operations.

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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**7- HANDLING AND STORAGE :****- Handling:**

Due to its high density, the product is heavy. Avoid the fall of the product. Wear protective shoes.

S37 = Wear suitable gloves.

Wash hands after handling.

- Storage:

On spool, in original cardboard, at room temperature, keep away from inclemency.

S2 = Keep out of the reach of children.

S13 = Keep away from food, drink and animal feedings stuffs.

8- EXPOSURE CONTROLS/PERSONAL PROTECTION:**- Exposure control:**

Permissible air concentration (mg/m³)

Product	PEL	REL	TLV
Tin	2.0	2.0	2.0
Copper	1 0.1 (fume)	1 0.1 (fume)	1 0.2 (fume)
Silver	0.01	0.01	0.1
Bismuth	No limits set by OSHA	No limits set by OSHA	No limits
Antimony	0.5	0.5	/
Lead	0.05	<0.1	0.05

Additional information:

PEL = Permissible exposure limit (OSHA)

REL = Recommended exposure limit (NIOSH)

TLV = threshold Limit value (ACGIH)

OSHA= Occupational Safety and Health Administration

ACGIH= American Conference of Governmental Industrial Hygienists

NIOSH= National Institute for Occupational Safety and Health

This information is based on the regulatory in force at the time of its elaboration.

- Personal protective equipment:**- General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals: do not smoke and eat at work place.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes.

Avoid contact with the eyes and skin.

- Respiratory protection:

Suitable fumes extraction system must be locally installed.

- Protection of hands:

Cotton gloves.

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**- Eye protection:**

Safety glasses.

- Body protection:

Protective work clothing.

9- PHYSICAL AND CHEMICAL PROPERTIES:

- Form: Bar - Stick - Wire
- State: Solid
- Colour: Silver
- Application: For soft soldering

Alloys	T° solidus (°C)	T° Liquidus (°C)	Densité (g/cm ³)
Pb99.5Sb0.5	E 320°C		11.3
Pb97.5Ag2.5	E 303°C		11.3
Sn5Pb95	308 °C	312 °C	11.05
Sn8Pb92	288 °C	307 °C	10.8
Sn10Pb90	270 °C	303 °C	10.6
Sn15Pb85	225 °C	288 °C	10.5
Sn20Pb80	183 °C	275 °C	10.2
Sn28Pb72	183 °C	265 °C	9.83
Sn30Pb70	183 °C	260 °C	9.75
Sn33Pb67	183 °C	257 °C	9.6
Sn40Pb60	183 °C	238 °C	9.3
Sn50Pb50	183 °C	216 °C	8.9
Sn60Pb40	183 °C	190 °C	8.5
Sn60 HT -60HTF	183 °C	189 °C	8.5
Sn63Pb37	E : 183 °C		8.4
Sn5Pb93.5Ag1.5 (300Ag)	296 °C	301 °C	10.9
Sn5Pb92.5Ag2.5	288°C	296°C	10.9
Sn20Pb79Sb1	183	280	10
Sn27PbAg3	179	253	9.85
S43Pb43Bi14	144	163	9.2
Sn50Pb49.5Sb0.5	183	190	8.5
Sn50Pb47Bi3	183	212	8.8
Sn50PbCu	183	215	8.9
Sn60PbCu2	183	190	8.65
Sn60PbBi2.4	183	185	8.5
Sn62Pb36Ag2	178	180	8.5
Sn60PbAg3	178	232	8.5

10- STABILITY AND REACTIVITY:**- Stability:**

Stable under normal conditions of use and storage.

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**- Conditions to avoid:**

Strong oxidisers may cause violent reaction.

- Hazardous decomposition products:

No hazardous decomposition under normal conditions of use and storage.

11- TOXICOLOGICAL INFORMATION:**- Eye contact :**

May cause eye irritation due to the fumes during soldering.

- Skin contact :

May cause burns during soldering . It is recommended to wear cotton gloves.

- Inhalation:

Use of product during soldering may produce or release fumes (no trace of lead in fumes at temperatures below 500°C).

- Acute toxicity:

No adverse health effect is expected under normal conditions of use.

12- ECOLOGICAL INFORMATION:**- General notes:**

Do not allow product to reach ground water, water course or sewage system.

13- DISPOSAL CONSIDERATIONS:

Disposal must be made according to official regulations.

14- TRANSPORT INFORMATION:**- DOT regulations:**

Hazard class: -Not regulated.

- Land transport ADR/RID (cross-border):

ADR/RID class: -Not regulated.

- Maritime transport IMDG:

IMDG Class: -Not regulated.

Marine pollutant: No

- Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: -Not regulated.

15- REGULATORY INFORMATION:

The product does not require a hazard warning label in accordance with EC directives/French regulations on dangerous substances.

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16- OTHER INFORMATION:

This material safety data sheet is entirely written in accordance with regulations in force.

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)

RID: Reglement internationale concernent le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

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

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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