SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2015/830)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : LEAD SOLDER ALLOYS : TIN - LEAD

Product code : ALLIAGES SN-PB.

Product type : Sn5Pb95 - Sn8Pb92 - Sn10Pb90 - Sn15Pb85 - Sn20Pb80 - Sn28Pb72 - Sn30Pb70 - Sn33Pb67 - Sn35Pb65 - Sn40Pb60 - Sn50Pb50 - Sn60Pb40 - Sn61.9Pb38.1 - Sn63Pb37 - Sn63Pb37 Cleanalloy - Sn63Pb37 Extralloy - Sn63Pb37 Extralloy G2 - Sn63Pb37 Nitralloy - Sn63Pb37 Nitralloy G2 - Sn63Pb37 Nitralloy G3 - Sn85Pb15 - Sn95Pb5

UFI : RAF0-U0C3-C002-MU6F

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

Soft soldering

Use descriptor system (REACH) :

SU 3 Industrial uses : uses of substances as such or in preparations at industrial sites

PC 38 Welding and soldering products (with flux coatings or flux cores), flux products

1.3. Details of the supplier of the safety data sheet

Registered company name : MBO.

Address : Rue de la Fonderie.21800.Chevigny-Saint-Sauveur.FRANCE.

Telephone : 00 33 3 80 46 12 58. Fax : 00 33 3 80 46 66 59.

admin@mbosolder.com

www.mbosolder.com

1.4. Emergency telephone number : +33 (0)1 45 42 59 59.

Association/Organisation : INRS / ORFILA http://www.centres-antipoison.net.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Reproductive toxicity, Category 1A (Repr. 1A, H360FD).

Reproductive toxicity, Effects on or via lactation (Lact., H362).

Specific target organ toxicity (repeated exposure), Category 1 (STOT RE 1, H372).

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :



GHS08

Signal Word :

DANGER

Product identifiers :

EC 231-100-4 LEAD

Additional labeling :

For professional use only.

Hazard statements :

H360FD May damage fertility. May damage the unborn child.

H362	May cause harm to breast-fed children.
H372	Causes damage to organs through prolonged or repeated exposure .

Precautionary statements - Prevention :

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/ ...

Other information :

2.3. Other hazards

The mixture contains substances classified as 'Substances of Very High Concern' (SVHC) >= 0.1% published by the European CHemicals Agency (ECHA) under article 57 of REACH: http://echa.europa.eu/fr/candidate-list-table

The mixture fulfils neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

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.

The product could cause burns during soldering.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

Identification	(EC) 1272/2008	Note	%
CAS: 7440-31-5 EC: 231-141-8 REACH: 01-2119486474-28-0033 TIN		[1]	5.00 - 95.00 %
CAS: 7439-92-1 EC: 231-100-4 REACH: 01-2119513221-59-XXXX LEAD	GHS08 Dgr Repr. 1A, H360FD Lact., H362 STOT RE 1, H372	[1] [2] [6]	5.00 - 95.00 %

(Full text of H-phrases: see section 16)

Information on ingredients :

[1] Substance for which maximum workplace exposure limits are available.

[2] Carcinogenic, mutagenic or reprotoxic (CMR) substance.

[6] Substances of very high concern (SVHC).

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :

Take affected persons into fresh air. If irritation persists, get medical attention.

In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.

If there is any redness, pain or visual impairment, consult an ophthalmologist.

In the event of splashes or contact with skin :

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

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.

In the event of swallowing :

Seek medical attention, showing the label.

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

No data available.

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

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Non-flammable.

5.1. Extinguishing media

Suitable methods of extinction

In the event of a fire, use :

- dry chemical agents
- sprayed water or water mist
- dry sand

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet
- Foam

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- metal oxides, metal dust

Molten metal reacts violently with oxidising agents.

5.3. Advice for firefighters

Wear full body protective clothing and appropriate self-contained breathing apparatus.

Cool adjacent containers with water spray.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Keep persons without protective equipment away from danger area.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Retrieve the product by mechanical means (sweeping/vacuuming).

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

Avoid exposure to pregnant women and warn women of child-bearing age of the possible risks

7.1. Precautions for safe handling

Always wash hands after handling.

The workplace must be ventilated and fumes must be captured at the emission source.

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

Wear protective shoes and gloves.

Fire prevention :

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

On spool, in original cardboard, at room temperature, keep away from inclemency. During 24 months

Do not store with food products.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
7440-31-5	2 mg/m3				
7439-92-1	0.05 mg/m3	-	-	-	-

- France (INRS - ED984 / 2019-1487) :

CAS	VME-ppm :	VME-mg/m3 :	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :
7439-92-1	-	0.15	-	-	-	1

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

TIN (CAS: 7440-31-5)

Final use: **Workers.**

Exposure method: Dermal contact.
Potential health effects: Short term systemic effects.
DNEL : 133.3 mg/kg body weight/day

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 133.3 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Short term systemic effects.
DNEL : 11.75 mg of substance/m3

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 11.75 mg of substance/m3

Final use: **Consumers.**

Exposure method: Ingestion.
Potential health effects: Short term systemic effects.
DNEL : 80 mg/kg body weight/day

Exposure method:	Ingestion.
Potential health effects:	Long term systemic effects.
DNEL :	80 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Short term systemic effects.
DNEL :	80 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	80 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Short term systemic effects.
DNEL :	3.476 mg of substance/m3
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	3.476 mg of substance/m3

Predicted no effect concentration (PNEC):

LEAD (CAS: 7439-92-1)

Environmental compartment:	Soil.
PNEC :	212 mg/kg
Environmental compartment:	Fresh water.
PNEC :	3.1 µg/l
Environmental compartment:	Sea water.
PNEC :	3.5
Environmental compartment:	Fresh water sediment.
PNEC :	174 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	164.2 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	0.1 mg/l

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Before handling powders or dust emission, wear mask goggles in accordance with standard EN166.

- Hand protection

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Type of gloves recommended :

- cotton

- Body protection

Suitable type of protective clothing :

- protective work clothing
- protective shoes

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Avoid breathing dust.

Independent breathing apparatus for respiratory protection :

It is recommended to set up a fumes exhaust system closer to their emission. In case of insufficient ventilation, wear suitable respiratory equipment. In case of formation of vapors, wear suitable respiratory equipment with filter.

- Thermal risks

The product could cause burns during soldering.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :	Solid.

Important health, safety and environmental information

pH :	Not relevant.
Boiling point/boiling range :	Not specified.
Flash point interval :	Not relevant.
Vapour pressure (50°C) :	Not relevant.
Density :	> 1
Water solubility :	Insoluble.
Melting point/melting range :	Not specified.
Self-ignition temperature :	Not specified.
Decomposition point/decomposition range :	Not specified.

9.2. Other information

Density (Sn5Pb95) : 11.05 @ 20°C
Density (Sn8Pb92) : 10.8 @ 20°C
Density (Sn10Pb90) : 10.6 @ 20°C
Density (Sn15Pb85) : 10.5 @ 20°C
Density (Sn20Pb80) : 10.2 @ 20°C
Density (Sn28Pb72) : 9.83 @ 20°C
Density (Sn30Pb70) : 9.75 @ 20°C
Density (Sn33Pb67) : 9.6 @ 20°C
Density (Sn35Pb65) : 9.5 @ 20°C
Density (Sn40Pb60) : 9.3 @ 20°C
Density (Sn50Pb50) : 8.9 @ 20°C
Density (Sn60Pb40) : 8.5 @ 20°C
Density (Sn61.9Pb38.1) : 8.5 @ 20°C
Density (Sn63Pb37) : 8.4 @ 20°C
Density (Sn63Pb37 Cleanalloy) : 8.4 @ 20°C
Density (Sn63Pb37 Extralloy) : 8.4 @ 20°C
Density (Sn63Pb37 Extralloy G2) : 8.4 @ 20°C
Density (Sn63Pb37 Nitralloy) : 8.4 @ 20°C

Density (Sn63Pb37 Nitralloy G2) : 8.4 @ 20°C
Density (Sn63Pb37 Nitralloy G3) : 8.4 @ 20°C
Density (Sn85Pb15) : 7.62 @ 20°C
Solidus / Liquidus temperature (Sn5Pb95) : 308°C / 312°C
Solidus / Liquidus temperature (Sn8Pb92) : 288°C / 307°C
Solidus / Liquidus temperature (Sn10Pb90) : 270°C / 303°C
Solidus / Liquidus temperature (Sn15Pb85) : 225°C / 288°C
Solidus / Liquidus temperature (Sn20Pb80) : 183°C / 275°C
Solidus / Liquidus temperature (Sn28Pb72) : 183°C / 265°C
Solidus / Liquidus temperature (Sn30Pb70) : 183°C / 260°C
Solidus / Liquidus temperature (Sn33Pb67) : 183°C / 257°C
Solidus / Liquidus temperature (Sn35Pb65) : 183°C / 247°C
Solidus / Liquidus temperature (Sn40Pb60) : 183°C / 238°C
Solidus / Liquidus temperature (Sn50Pb50) : 183°C / 216°C
Solidus / Liquidus temperature (Sn60Pb40) : 183°C / 190°C
Solidus / Liquidus temperature (Sn61.9Pb38.1) : 183°C / 187°C
Solidus / Liquidus temperature (Sn63Pb37) : E 183°C
Solidus / Liquidus temperature (Sn63Pb37 Cleanalloy) : E 183°C
Solidus / Liquidus temperature (Sn63Pb37 Extralloy) : E 183°C
Solidus / Liquidus temperature (Sn63Pb37 Extralloy G2) : E 183°C
Solidus / Liquidus temperature (Sn63Pb37 Nitralloy) : E 183°C
Solidus / Liquidus temperature (Sn63Pb37 Nitralloy G2) : E 183°C
Solidus / Liquidus temperature (Sn63Pb37 Nitralloy G3) : E 183°C
Solidus / Liquidus temperature (Sn85Pb15) : 183°C / 215°C
Density (Sn95Pb5) : 7.42 @ 20°C
Solidus / Liquidus temperature (Sn95Pb5) : 183°C / 222°C

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

The product is stable under normal conditions of use and storage, but reacts with strong oxidisers.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

Reaction with strong oxidizers.

10.4. Conditions to avoid

Avoid :

- formation of dusts

Dusts can form an explosive mixture with air.

10.5. Incompatible materials

The product reacts with strong acids, especially with oxidisers acids.

10.6. Hazardous decomposition products

No hazardous decomposition under normal conditions of use.

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Known human reproductive toxicant.

May damage fertility and the unborn child.

Presents a risk on or via lactation.

Causes severe damage to organs in the event of repeated or prolonged exposure.

11.1.1. Substances

Acute toxicity :

TIN (CAS: 7440-31-5)

Oral route :	2000 < LD50 <= 5000 mg/kg Species : Rat
Dermal route :	2,000 < LD50 <= 5000 mg/kg Species : Rat
Inhalation route (Dusts/mist) :	LC50 > 4.75 mg/l Species : Rat Duration of exposure : 4 h

11.1.2. Mixture

No toxicological data available for the mixture.

Monograph(s) from the IARC (International Agency for Research on Cancer) :

CAS 7439-92-1 : IARC Group 2B : The agent is possibly carcinogenic to humans.

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

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

12.1.1. Substances

TIN (CAS: 7440-31-5)

Crustacean toxicity :	EC50 = 1.303 mg/l Species : Ceriodaphnia dubia

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

SECTION 14 : TRANSPORT INFORMATION

Exempt from transport classification and labelling.

14.1. UN number

-

14.2. UN proper shipping name

-

14.3. Transport hazard class(es)

-

14.4. Packing group

-

14.5. Environmental hazards

-

14.6. Special precautions for user

-

SECTION 15 : REGULATORY INFORMATION

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

- Classification and labelling information included in section 2:

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2020/217 (ATP 14)

- Container information:

No data available.

Usage restrictions apply to the product : See annex XVII of EC regulation No. 1907/2006.

For professional users only.

- Particular provisions :

No data available.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

We cannot anticipate any and all conditions and situations under which the information and our products or the combination of both with others will be used. We do not assume any liability in the safety and suitability of our products alone or in combination with others. Users must make their own tests to determine the safety and suitability of each product used alone or with other products for their own use.

Except any previous written agreement, our products are sold without guarantee and customers must assume all liability for any loss or damage suffered by themselves or by third parties, either from handling or use of our products alone or with others. In case of any difference or variation seen during the use of the products we request that you contact our technical department.

Wording of the phrases mentioned in section 3 :

H360FD	May damage fertility. May damage the unborn child.
H362	May cause harm to breast-fed children.
H372	Causes damage to organs through prolonged or repeated exposure .

Abbreviations :

DNEL : Derived No-Effect Level

PNEC : Predicted No-Effect Concentration

CMR: Carcinogenic, mutagenic or reprotoxic.

UFI : Unique Formula Identifier

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.
GHS08 : Health hazard
PBT: Persistent, bioaccumulable and toxic.
vPvB : Very persistent, very bioaccumulable.
SVHC : Substances of very high concern.