



1. Identification of the preparation and of the company

1.1 Identification of the preparation

Solders for stainless steel.

1.2 Use of the preparation

Material for soldering of orthodontic devices at usage temperature 680-705°C.

1.3 Company identification

Leone s.p.a.

I – 50019 Sesto Fiorentino – Firenze - Via P. a Quaracchi, 50

e-mail: research@leone.it – <http://www.leone.it>

Tel. ++39 (0)55.30.44.1 – Fax ++39 (0)55 374808.

1.4 Emergency telephone

++39 (0)55.30.44.1. An answering machine is on during closing time.

2. Hazards identification

Hazards related to the brazing alloys depend on the way of use. Little quantities of metal fumes and metal oxides may be generated during heating, but within the limits allowed. Nevertheless, given the risk of oxidation of the metal fumes, with forming of nickel oxide and/or manganese dioxide, according to the composition, it is recommended to provide suitable protective clothing and a good local exhaust during working process.

Overheating of the alloy may liberate dangerous concentrations of fumes.

3. Composition/information on ingredients

Silver based brazing alloy.

Information on ingredients and composition %

Chemical name	EC ¹ Number	%	CAS ² Number	Hazard symbols ³	R ³ Phrases
Silver	231-131-3	49	7440-22-4	-	-
Copper	231-159-6	16	7440-50-8	-	-
Zinc	231-175-3	23	7440-66-6	F	R15-17
Manganese	231-105-1	7.5	7439-96-5	-	-
Nickel	231-111-4	4.5	7440-02-0	Xn	R40-43

4. First aid measures

- Inhalation: inhalation of large quantities of zinc oxide fumes and/or copper and zinc oxide fumes may cause metal fume fever.

Symptoms are similar to the flue ones and appear after a latency period up to 10 hours. Usually symptoms disappear within the following 24 hours.

Should large quantities of fumes be inhaled, move to fresh air. If necessary seek for medical advice.

- Ingestion: not applicable.

- Eye contact: not applicable.

- Skin contact: a prolonged skin contact with metal alloys and in particular with alloys containing nickel may cause sensitization.

5. Fire-fighting measures

Non-flammable.

Protect breathing organs from fumes generated by alloys in melted state by using suitable equipment.

Explosion hazards are not known.

6. Accidental release measures

Not applicable.

7. Handling and storage

No special precautions are required. A proper storage is recommended in order to avoid contamination.

¹ Number of European Catalogue. The EC number is made of a sequence of 7 figures, whose first group of 3 figures begins with 2 or 4 depending on which substance is included in the EINECS (European Inventory of Existing Commercial Chemical Substances) or in the ELINCS (European List of Notified Chemical Substances), or it begins with 5 if the substance is included in the list of "ex-polymers."

² CAS Number (Chemical abstract service).

³ Hazards related to the ingredients of the product are indicated in section 2, information to be shown on the label, if applicable, are indicated in section 15. Explanation of hazardous symbols and Risk phrases is indicated in section 15 and/or 16.



8. Exposure controls/personal protection

8.1. Exposition limit values⁴

European Union. Silver, professional exposure limits (TWA): 0.1 mg/m³ (ACGIH⁵: 0.01 mg/m³).

European Union. Copper fumes (as Cu), professional exposure limits (TWA): 0.2 mg/m³.

European Union. Zinc oxide fumes (as Zn), professional exposure limits (TWA): 5.0 mg/m³; short-term exposure limits (STEL⁶): 10.0 mg/m³.

European Union. Nickel fumes, professional exposure limits (TWA): 0.1 mg/m³.

European Union. Manganese fumes (as Mn), professional exposure limits (TWA): 0.2 mg/m³.

8.2. Exposure control

Periodical controls of the work place are recommended in order not to exceed maximum levels of exposition to polluting substances.

Controls must be effected by using personal samplers to be worn by the workers or portable samplers positioned in the working area of the brazing staff.

9. Physical and chemical properties

9.1. General information

Appearance: solid
Odour: not applicable.

9.2. Health, safety and environmental information

pH: not applicable
Flash point: not applicable
Explosion hazards: not applicable
Comburent properties: not applicable
Melting range: 680-705°C.

10. Stability and reactivity

Stable at normal conditions of temperature and pressure.

Incompatibility: not determined.

Conditions to avoid: uncontrolled exposure at high temperatures.

Hazardous decomposition products: heavy metal oxides.

Polymerization hazards: not determined.

11. Toxicological information

Some toxicological information on ingredients are available at section 3.

Italy. Nickel, manganese, zinc and copper are part of the substances listed by D.P.R. no. 482 dated June 9 1975 for the acknowledgement of occupational diseases caused by metals and metal alloys .

Italy. Nickel, manganese and zinc are part of the substances listed by DM dated April 18 1973 as modified with DM April 27 2004, concerning the obligation to notify any occupational disease.

During working process, a breathing apparatus suited to protect from welding fumes (activated carbons) should be worn by workers at risk of inhalation. The type of breathing apparatus to be used has to be decided on the basis of the surveys made in the workplace. In case of alloys containing manganese, workers should also wear a suitable eye protection to avoid any contact with fumes.

A good local exhaust must be provided during welding procedures.

Nickel oxide or manganese dioxide may form during welding procedures owing to metal fumes oxidization.

Italy. Herewith reported the classification by DM April 28 1997 and subsequent modifications:

Nickel oxide

NiO

Carc. Cat. 1

R Phrases : R49 May cause cancer by inhalation

R43 May cause sensitisation by skin contact

S Phrases: S53 Avoid exposure - obtain special instructions before use

S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)

Labelling: T Toxic.

Manganese dioxide

MnO₂

⁴ The "occupational exposure limit", if not otherwise specified, is the average limit or serious concentration in the time of a chemical agent in the air inside the breathing area of a worker related to a specific period of time (Directive 98/24/EC on health and safety protection of the workers against the consequential risks from chemical agents during the job); the TWA (time weighted average) indicator is the serious average concentration in the time for a working day of 8 hours.

⁵ ACGIH: American Conference of Governmental Industrial Hygienists, USA.

⁶ STEL, Short Term Exposure Limit, generally calculated at 15 minutes.



R Phrases: R20/22 Harmful by inhalation and in contact with skin
S Phrases: S25 Avoid contact with eyes
Labelling: Xn Harmful.

12. Ecological information

In case the local aspiration is canalized to outdoor, exhaust is subject to national and local regulations. In Italy operate in accordance with the D.P.R. no. 203 dated May 24 1988.
Verify the application of possible simplified procedures.

13. Disposal consideration

Dispose of in accordance with local and national regulations. In Italy dispose of according to Legislative Decree of April 3 2006 no. 152 "Regulations on environmental subject", application of European Directives on environmental protection, and subsequent modifications and integrations.
It is a special, non-hazardous waste.

14. Transport information

The product is not classified as dangerous to transport.

15. Regulatory information

- Health, safety and environmental information shown on the label according to European Directives on hazardous materials and substances

None.

- Information related to further dispositions

This product is CE marked in accordance with the essential requirements of Directive 93/42/EC , Annex I, on medical devices.

16. Other information

The safety data sheet has been written according to relevant European provisions, on the basis of information received by the supplier of preparation

Hazard symbols, risk phrases and safety phrases shown on section 3, related to *zinc*:

Hazards symbols:	F	light flammable
Risk phrases:	R15	Contact with water liberates extremely flammable gases
	R17	Spontaneously flammable in air
Safety phrases:	S8	Keep container dry
	S30	Never add water to this product

hazard symbols, risk phrases and safety phrases shown on section 3, related to *nickel*:

Hazards symbols:	Xn	Harmful
Risk phrases:	R 40	Limited evidence of a carcinogenic effect
	R 43	May cause sensitisation by skin contact
Safety phrases:	S 22	Do not breathe dust
	S 36/37	Wear suitable protective clothing and gloves

refer to fumes originated by some ingredients of the preparation and are not shown on the label.

The product is intended for orthodontic and odontological use only. The use of the product has to be restricted to skilled and licensed professionals.

The information drawn herein is based on our knowledge at the date of the issue.

The information is exclusively provided related to the product herewith specified and is not intended as a warranty of quality.

Leone disclaims any responsibility arising out of the use of the information here furnished, or of the handling, the application or the manufacture of the product here described. The final user is called to verify the application and completeness of the information herein in relationship to the specific use and reliability of the rules and local applicable dispositions. The present information doesn't imply any liberty to break patent rights

Previous safety data sheet n. R10/6E dated 13/12/2001 is to be considered cancelled. In comparison to the preceding revision, meaningful changes have not been effected but only adjustments to the European provisions which regulate the compilation of safety data sheet.

This safety data sheet is subject to revision.

Visit our web site www.leone.it for an updated version of the present sheet.