Via Galvani, 14 - 20094 Corsico (MI) - Italy
Tel. (+39) 02 45864035 - Fax (+39) 02 45869840
e-mail: info@pandoralloys.com
Internet: www.pandoralloys.com

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 PRODUCT IDENTIFIER	A/O – Copper alloy in drops
1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST	Alloy for goldsmith
1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET	Pandora Alloys srl Via Galvani, 14 20094 Corsico (MI) Italia ☎ +39 02 45 86 40 35 🖷 +39 02 45 86 98 40 ✉ info@pandoralloys.com 💻 www.pandoralloys.com
1.4 EMERGENCY TELEPHONE NUMBER	Centro antiveleni c/o Niguarda Hospital P.za Ospedale Maggiore, 3 Milano – Italy ☎ +39 02 66 10 10 29 (24h)

2. HAZARDS IDENTIFICATION

2.1 SUBSTANCE CLASSIFICATION CLASSIFICATION ACCORDING TO REGULATION 1272/2008/EC	The product contains nickel > 1% The product is classified as Carcinogen Category 1 B (probable human carcinogen mainly based on animal studies), Mutagenic Cat 2 (suspected of causing genetic defects), Toxic for reproduction Cat 2 (suspected of damaging fertility or the unborn child). Causes damage to target organs (lungs, liver, kidneys, blood) repeated exposure STOT RE-1. Very toxic to aquatic life with long lasting effects - Cat.1.
CLASSIFICATION ACCORDING TO DIRECTIVE 1999/45/EC	This product is classified as a carcinogen Cat 2 (probable human carcinogen), Mutagenic Cat 3 (possible risk of impaired fertility and harm to the unborn child), Harmful by ingestion and inhalation of smoke and dust, and highly toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
2.2 LABEL ELEMENTS	The product should NOT be labeled in accordance with paragraph 1.3.4 all.I EC Regulation N.1272/2008. Nevertheless, we suggest to refer to the legislation EC 94/27 and subsequent modifications for effects on skin.
2.3 FURTHER HAZARDS PBT OR VPVB PROPERTIES	An evaluation of PBT and vPvB properties as per Attachment XIII has not been done.
FURTHER HAZARDS	None to report.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Cu, Zn - NOT DANGEROUS

Substance	No CAS	No CE	No Index	Classification	Conc.	TLV-TWA (mg/m^3)	REACH symbol(s)
NICKEL	7440-02-0	231-111-4	028-002-00-7	Skin sensitization, cat. 1 Carcinogenicity, cat. 2 H317, H351 P280 P301+P330 P305+P351+P338 P302+P360	16,0%	1.5 (metal) (ACGIH)	

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

AFTER SMOKE INHALATION	It's good practice melting under extraction hoods or in closed casting machines, in case of fumes inhalation ventilate the room. In case of illness seek medical advice.
AFTER CONTACT WITH SKIN	No danger reported from normal use. Seek medical advice in presence of known sensitivity. In case of contact with molten metal, evaluate the extent of the burn and seek medical attention.
AFTER CONTACT WITH EYES	In event of irritation from fumes oxide, rinse with water. Consult your doctor if you develop conjunctivitis.
AFTER INGESTION	No risks reported.
4.2 MAIN SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED	Vapor / fumes / dust: coughing, sneezing or lacrimation. In case of repeated or prolonged exposure, possible gastrointestinal disturbances, breathing difficulty, hypotension, cramps, and fever. Symptoms can occur with a certain delay.
4.3 INDICATION OF THE POSSIBLE NEED OF IMMEDIATE MEDICAL ADVICE OR SPECIAL TREATMENTS	Follow the procedures of safety agreed in your company

5. EXTINGUISHING METHODS

5.1 Extinguishing media
Recommended extinguisher — None in particular
Forbidden extinguisher — Do not use water on molten metals

5.2 Special dangers due to the substance or to the mix
None in particular. Molten alloy might release smokes and vapor made up of oxides.

5.3 Recommendations to the employees in charge of fire extinction
Use adequate protections in case of smokes.
Follow the procedures of extinguishing agreed in your company.

6. MEASURES IN CASE OF ACCIDENTAL RELEASE

6.1 Personal precautions, protection devices and procedures in case of emergency
Inert material. Use individual protection devices in case of certain sensibility to the mix. Use protection devices in case of exposition to vapors and smokes.
During working time, follow the safety procedures agreed in your company.

6.2 Environmental precautions
Avoid release in the environment

6.3 Methods and materials for containment and collection
Collect material using devices suitable to re-use the material itself and/or its recovery by the producer.

6.4 reference to other sections
See sections 8 e 13

7. HANDLING AND STORAGE

7.1 Precautions for a safe handling
Alloys can be handled without any particular precaution. During casting, melting, mechanical works, annealing and welding, provide for ventilation. Do not breathe dust, vapors and smokes.

7.2 Conditions for a safe storage, including possible incompatibilities.
Alloys can be stored without any particular precaution. For a better use, it is suitable a covered and dry place for storage.

7.3 Final specific uses
Copper alloy in drops to be molten with pure gold.

8. EXPOSITION CONTROL/PERSONAL PROTECTION

8.1 Control parameters

Limit values for Nickel	ACGIH TLV-TWA: 1.5 mg/m³ TLV-TWA: 0.2mg/m³ (Fumes); mg/m³ (Dust. Mist.) TLV STEL: 2mg/m³ (Dust. Mist)
Limit values for zinc oxide	TLV-TWA: 5 mg/m³(Fumes), 10 mg/m³ (Dust)

DNEL – DERIVED NO EFFECT LEVEL

Values refer to: Nickel
Workers:
Inhalation: Systemic effects long term exposure 0.05 mg/m³
Inhalation: Systemic effects short term exposure 680 mg/m³ MMAD <12 µm
Inhalation: Local effects long term exposure 0.05 mg/m³
Inhalation: Local effects short term exposure 4 mg/m³ MMAD = 1.5 µm
Dermal: Local effects long term exposure 0.035 mg/cm²

General population:
Inhalation: Systemic effects long term exposure 20 ng/m³
Inhalation Systemic effects short term exposure 408 mg/m³
Inhalation: Local effects long term exposure 20 ng/m³
Inhalation: Local effects short term exposure 2.4 mg/m³
Dermal: Local effects long term exposure 0.035 mg/cm²
Oral: Systemic effects long term exposure 0.02 mg/kg bw/day
Oral: Systemic effects short term exposure 12 µg/kg bw/day

PNEC – PREDICTED NO EFFECT CONCENTRATION

Values refer to: Nickel
PNEC fresh water 3,55 µg Ni/L (bioavailable)
PNEC marine water 8.6 µg Ni/L
PNEC STP 0.33 mg/L
PNEC soil 29.9 mg/kg soil dw

SOURCE: ECHA EUROPE

8.2 Controls of exposition

Respiratory protection	Workplace should be ventilated, in case of need use protective masks and aspiration while casting. If aspiration devices are not available, use a ventilation device suitable for casting process.
Hands protection	Use gloves suitable for casting.
Eyes protection	Use protective glasses while casting.
Skin protection	Use protective clothes and gloves

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information about the basic physical and chemical properties

Aspect: alloy in drops	Odor: odorless
Olfactory threshold: n.a.	pH: n.a.
Flash temperature: n.a.	Boiling temperature: not detected
Flash: not flammable	Evaporation rate: n.a.
Vapor pressure: n.a.	Explosiveness higher/lower limits: n.a.
Melting temperature: ~ 1000 °C	Solubility: insoluble in water
Relative density: ~ 9 g/cm³	Vapor density: n.a.
Distribution coefficient: n.a.	Ignition temperature: n.a.
Decomposition temperature: n.a.	Viscosity: n.a.
Explosive properties: n.a.	Oxidizing properties: n.a.

9.2 Other information — None

10. STABILITY AND REACTIVITY

10.1 Reactivity
High reactivity in presence of acids, oxidizing agents and caustic products

10.2 Chemical stability
Stable product

10.3 Possible dangerous reactions
Possible development of hydrogen and nitrogen tetroxide in presence of strong oxidizing mineral acids.

10.4 Conditions to avoid
Avoid contact between alloy drops and acids, oxidizing agents or caustic products. Avoid melting temperature higher than the range indicated in the related tech chart.

10.5 Incompatible materials
Oxidizing agents, acids and caustic products

10.6 Dangerous product due to decomposition
None

11. TOXICOLOGICAL INFORMATION

11.1 Information about toxicological effects

Acute toxicity	n.a.
Irritation	n.a.
Corrosivity	n.a.
Sensitization	In case of inhalation and/or contact with skin in concentration ≥1%
Toxicity with repeated dose	n.a.
Cancer-causing	n.a.
Mutagenicity	n.a.
Toxic for reproduction	n.a.

12. ECOLOGICAL INFORMATION

12.1 Toxicity	n.a.
12.2 Persistence and degradability	n.a.
12.3 Bioaccumulative potential	n.a.
12.4 Mobility on soil	n.a.
12.5 Results on PBT and VPVB value	n.a.
12.6 Other negative effects	n.a.

13. DISPOSAL CONSIDERATION

13.1 Methods of waste treatment — Reuse if possible.
Follow the procedures and laws of your Country.

14. INFORMATION ON TRANSPORT

14.1 UN number	n.a.
14.2 UN shipping rule	n.a.
14.3 Class of danger referred to transport	n.a.
14.4 Packing group	n.a.
14.5 Danger for environment	n.a.
14.6 Special precautions for users	n.a.
14.7 Collect transport according to Marpol 73/78 and IBC code	n.a.

15. INFORMATION ON REGULATIONS

15.1 Rules and laws on health, security and environment, specific for the mix
This chart follows the directions of CE Rule 1272/2008

15.2 Information on the label according to the current directives
Indication(s) of danger: skin sensitization, category 1 / carcinogenicity, category 2
Hazardous ingredient(s) for labelling: Nickel

H-phrases

H317	May cause an allergic skin reaction
H351	Suspected of causing cancer

P-phrases

P280	Wear protective gloves/ protective clothing/ eye protection/ face protection
P305+P351+P338	If in eyes rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330	If swallowed, rinse mouth
P302+P360	Rinse immediately contaminated clothing and skin with plenty of water before removing clothes

15.3 Chemical safety value no

16. OTHER INFORMATION

This chart has been written as per our knowledge at the present date. The user is asked to check if information are suitable and complete referred to the use of the alloy. Information on this chart are a description of characteristics of this product about its safety; this chart is not a guarantee of properties of this product.

This chart substitutes every previous communication.