

## Safety data sheet

### Copper-phosphorus and silver-copper-phosphorus brazing alloys

FOSOP and FOSILVER series | Technical revision 02 | 11/10/2026 | English

**Revised version for technical validation. The final classification of each grade, supplier data and applicability of labelling obligations must be confirmed before commercial issue. Section 16 identifies the outstanding checks.**

## SECTION 1 Identification of the substance or mixture and of the company or undertaking

### 1.1 Product identifier

Trade names: FOSOP 6, FOSOP 7, FOSOP 0, FOSOP 8, FOSOP 7 SN; FOSILVER 2, FOSILVER 5, FOSILVER 15 and FOSILVER 18. Metallic mixtures for brazing, supplied in massive form, without a coating or flux covered by this sheet.

This sheet does not cover powders, nanoforms, coated alloys, fluxes or other compositions. Check the grade on the packaging and certificate of analysis. UFI: not supplied; the need for a UFI and notification under CLP Annex VIII depends on the final classification and conditions of placing on the market.

### 1.2 Relevant identified uses and uses advised against

Professional and industrial capillary brazing of copper and copper alloys, including copper-copper and copper-brass, in refrigeration, air conditioning and heat exchangers. Use in gas systems depends on the relevant standards and technical approval of the system. Consult the TDS for the grade; the need for flux depends on the base metals.

Uses advised against: joints with steel, iron, nickel or cobalt because brittle phosphides may form, unless specifically qualified and documented by the manufacturer. For FOSOP 0, the TDS also advises against service in contact with sulphurous environments. Do not extend approval of one grade to the others.

### 1.3 Details of the supplier of the safety data sheet

INDUCAST Lda. — SOPORMETAL brand  
Zona Industrial de Albergaria-a-Velha, Arruamento D, Lote 32 B  
3850-194 Albergaria-a-Velha, Portugal  
Telephone: +351 234 243 048  
Email of the person responsible for the SDS: info@inducast.pt

### 1.4 Emergency telephone number

Portugal — CIAV, Centro de Informação Antivenenos: 800 250 250, free of charge, available continuously. Medical emergency: 112. Company contact: +351 234 243 048, during business hours only; this does not replace a permanent emergency service.

## SECTION 2 Hazards identification

### 2.1 Classification of the substance or mixture

Provisional assessment under Regulation (EC) No 1272/2008 (CLP), based on the nominal compositions in section 3. The blanket statement “not hazardous in solid form” has been removed because it does not substantiate all grades. Massive form does not automatically remove the need for classification.

Silver massive (particle diameter  $\geq 1$  mm) has harmonised classifications Repr. 2, H361f, and STOT RE 2, H373 (nervous system), applicable since 01/05/2026. The following table shows the outcome using the generic concentration limits of 3% for Repr. 2 and 10% for STOT RE 2, without invoking an unproven reduction in bioavailability.

| Grade                      | Silver    | Provisional assessment by silver content                                                        |
|----------------------------|-----------|-------------------------------------------------------------------------------------------------|
| FOSOP 6 / 7 / 0 / 8 / 7 SN | 0%        | No classification derived from silver. Other hazards to be validated.                           |
| FOSILVER 2                 | 2%        | Does not reach the limits for these two classes. SDS on request; assess EUH210 if unclassified. |
| FOSILVER 5                 | 5%        | Repr. 2 — H361f                                                                                 |
| FOSILVER 15 / 18           | 15% / 18% | Repr. 2 — H361f; STOT RE 2 — H373 (nervous system)                                              |

This is not a complete or approved classification. Confirm the form of silver in the alloy, mixture data, other ingredients and all applicable hazards. Any change based on biological unavailability requires adequate data under CLP Article 12. Environmental classification requires a specific assessment of the metallic form and ion release.

### 2.2 Label elements



#### GHS08 — health hazard | Signal word: Warning

Provisional elements for FOSILVER 5, 15 and 18: H361f — Suspected of damaging fertility. For FOSILVER 15 and 18 also H373 — May cause damage to the nervous system through prolonged or repeated exposure.

Provisional precautionary statements: P201 — Obtain special instructions before use. P260 — Do not breathe dust or fume. P280 — Wear protective gloves, protective clothing and eye/face protection. P308+P313 — IF exposed or concerned: Get medical advice/attention. P405 — Store locked up. P501 — Dispose of contents/container through an authorised operator in accordance with applicable regulations. For FOSILVER 15/18 add P314 — Get medical advice/attention if you feel unwell.

Final labelling and any derogation for metals in massive form: to be validated. H315, H319 and H335 are not automatically assigned to the product merely because the operation produces irritating fumes.

### 2.3 Other hazards

Brazing may produce fumes of metal and phosphorus oxides, dust, optical radiation and burn hazards. Fume composition also depends on the base metal, flux and process. PBT/vPvB and endocrine-disrupting assessments are not documented in the supplied data; a proven absence cannot be declared.

## SECTION 3 Composition and information on ingredients

### 3.1 Substances

Not applicable: the products covered are metallic mixtures.

### 3.2 Mixtures

Nominal compositions in mass percent, transcribed from the original SDS tables. Confirm tolerances, impurities and batch composition using the certificate of analysis. Zero values indicate absence from the nominal formulation; they do not constitute an analytical statement that traces are absent.

| Grade       | Ag % | Cu % | P % | Sn % |
|-------------|------|------|-----|------|
| FOSOP 6     | 0    | 93,8 | 6,2 | 0    |
| FOSOP 7     | 0    | 93,0 | 7,0 | 0    |
| FOSOP 0     | 0    | 92,7 | 7,3 | 0    |
| FOSOP 8     | 0    | 92,2 | 7,8 | 0    |
| FOSOP 7 SN  | 0    | 86,2 | 6,8 | 7,0  |
| FOSILVER 2  | 2,0  | 91,7 | 6,3 | 0    |
| FOSILVER 5  | 5,0  | 89,0 | 6,0 | 0    |
| FOSILVER 15 | 15,0 | 80,0 | 5,0 | 0    |
| FOSILVER 18 | 18,0 | 75,0 | 7,0 | 0    |

Nominal ranges across the whole family: Ag 0–18%; Cu 75–93.8%; P 5–7.8%; Sn 0–7%. Do not add the ranges or use them as the formulation of a grade. Silicon: the original “≤ 0.1%” statement is not confirmed by the individual tables; check whether it represents a trace or an addition and identify the grades concerned.

| Ingredient              | CAS / EC              | Classification information                                                                                                                                                                                             |
|-------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Copper                  | 7440-50-8 / 231-159-6 | Classification depends on form. The harmonised entry for specific surface area > 0.67 mm <sup>2</sup> /mg is Aquatic Acute 1, H400, M=10; Aquatic Chronic 1, H410, M=1. Do not apply indiscriminately to massive rods. |
| Phosphorus in the alloy | 7723-14-0 / 231-768-7 | Elemental identification of composition; confirm chemical species in the material. Do not equate alloy-bound phosphorus with free white or red phosphorus.                                                             |
| Silver massive          | 7440-22-4 / 231-131-3 | Index 047-004-00-9; Repr. 2, H361f; STOT RE 2, H373 (nervous system). No SCL/M/ATE specified in this entry.                                                                                                            |
| Tin                     | 7440-31-5 / 231-141-8 | Supplier classification data not provided. Do not transfer classifications of organotin compounds.                                                                                                                     |
| Silicon, if present     | 7440-21-3 / 231-130-8 | Presence, content and classification data to be confirmed.                                                                                                                                                             |

REACH registration numbers and additional ingredient data: not supplied. Obtain the applicable identifiers, complete classifications, specific concentration limits (SCL), M-factors and acute toxicity estimates (ATE) where relevant. Do not assign registration numbers by assumption.

## SECTION 4 First aid measures

### 4.1 Description of first aid measures

Inhalation: stop exposure, move the person to fresh air and keep at rest. Do not enter a hazardous atmosphere without adequate protection. For breathing difficulty, altered consciousness or significant symptoms, call 112. If symptoms persist, seek medical attention. Resuscitation only by a trained person and according to emergency guidance.

Skin: for contact with cold material or dust, wash with soap and water and remove contaminated clothing. For a thermal burn, cool the area with cool running water, without ice. Do not pull off adhered solidified metal or clothing stuck to the skin. Cover loosely and seek medical attention. Water used to cool a burn must not reach metal still molten at the workplace.

Eyes: immediately irrigate with water for several minutes, keeping eyelids open. Remove contact lenses if easy to do. Do not rub or attempt to remove embedded fragments. Seek urgent medical assessment for projected particles, burns, pain or changes in vision.

Ingestion: unlikely for rods; possible with dust and contaminated hands. Rinse the mouth. Do not induce vomiting. Give nothing by mouth to an unconscious person. Contact CIAV or a doctor and show this sheet and the product grade.

### 4.2 Most important symptoms and effects both acute and delayed

Fumes or dust may cause eye and respiratory irritation, coughing and malaise. Certain metal-fume exposures may cause flu-like symptoms, sometimes delayed. Hot metal causes burns. Consider the silver-related hazards in section 2 and additional risks from base metals and fluxes.

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

Treat according to symptoms and exposure. Breathing difficulty, significant burns and eye injuries require urgent assessment. Tell the doctor the alloy, base metals, flux and exposure duration; no specific antidote has been identified in the available data.

## SECTION 5 Firefighting measures

### 5.1 Extinguishing media

For a fire involving surrounding materials, choose the extinguishing medium according to those materials and the presence of hot metal. If molten metal or a metal-particle fire is present, use a dry agent suitable for the metal and scenario as specified in the emergency plan. Do not apply water, foam or wet agents to molten metal because violent splashing may occur. CO<sub>2</sub> and ordinary powders are not a universal recommendation for metal fires.

### 5.2 Special hazards arising from the substance or mixture

The massive alloy is not normally combustible under usual storage conditions. Fine dust requires a specific assessment. Intense heating may generate metal fumes and phosphorus oxides. Molten metal can cause burns and react violently with moisture.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus and suitable protective equipment. Isolate the area, avoid contact with molten metal and contain contaminated extinguishing water. Cool adjacent structures only in a manner that prevents water contacting molten metal.

## SECTION 6 Accidental release measures

### 6.1 Personal precautions protective equipment and emergency procedures

Keep unprotected persons away. Wear gloves, eye protection and, if dust or fumes are present, provide ventilation and suitable respiratory protection. For a molten-metal spill, isolate the area and allow it to solidify under controlled conditions; do not add water.

### 6.2 Environmental precautions

Prevent particles, residues and contaminated water entering drains, soil and waterways. Report significant releases to the competent authorities in accordance with applicable obligations.

### 6.3 Methods and material for containment and cleaning up

Collect rods and fragments mechanically into a labelled container. For dust, use industrial extraction suitable for the risk; avoid dry sweeping and compressed air. Do not use an ordinary vacuum cleaner for potentially combustible metal dust.

### 6.4 Reference to other sections

See sections 8 and 13 for personal protection and waste management.

## SECTION 7 Handling and storage

### 7.1 Precautions for safe handling

Consult the TDS and brazing instructions for the grade. Use local exhaust at the fume source and keep the head out of the plume. Do not use in confined spaces without a specific assessment, ventilation and procedure. Remove contamination from base metals; do not heat surfaces containing chlorinated solvents or hazardous residues.

Avoid dust formation during grinding or cutting. Separate hot work from combustible materials and follow the applicable permit procedure. Do not eat, drink or smoke in the area. Wash hands before breaks. Do not take contaminated clothing home. For grades with fertility hazards, consider particularly sensitive workers in the risk assessment.

### 7.2 Conditions for safe storage including incompatibilities

Store in a dry, ventilated place protected from moisture, in labelled packaging. Separate from strong acids, strong oxidisers and halogens. Keep away from food. For grades covered by P405, control access and store locked up according to the final labelling.

### 7.3 Specific end uses

Industrial and professional brazing. Training should cover fumes, ventilation, burns, eye protection, fuel gases and waste management. Alloy, flux and temperature selection must meet the joint specification.

## SECTION 8 Exposure controls and personal protection

### 8.1 Control parameters

The original SDS values of 0.01 mg/m<sup>3</sup> for silver, 0.2 mg/m<sup>3</sup> for copper fumes and 2 mg/m<sup>3</sup> for tin did not identify a source, sampled fraction or reference period. They have been removed as unverifiable regulatory limits. This does not mean that exposure limits do not exist.

Before use, identify the legal and technical limits applicable in the country of work for each species actually present, including copper and its compounds, metallic silver and soluble compounds, tin and process gases. Record the value, unit, inhalable/respirable fraction, 8-hour time-weighted average or short-term period, and source/date. Assess fluxes, coatings and base metals as well.

DNEL and PNEC: not provided for these alloys in the supplied documents. Obtain relevant values and scenarios from supplier dossiers/SDSs where available. Monitor exposure using methods suitable for the species and fractions present; do not compare total-fume results with the limit for a particular species without justification.

### 8.2 Exposure controls

Engineering controls: effective local exhaust and supplementary general ventilation; check capture, maintenance and performance. General ventilation alone may not control exposure at the joint. In confined spaces, assess oxygen and gases before and during work.

Respiratory protection: select according to exposure assessment and measurements. P3 filters or FFP3 may be suitable for particles if the protection factor is adequate and the fit is good. They do not protect against gases or oxygen deficiency. A combined filter should only be used if gas classes, concentrations and conditions are identified. Do not indiscriminately recommend ABEK-P3; use supplied air or self-contained equipment where required by the scenario.

Eyes/face: protection against splashes and an optical filter suitable for the process and radiation intensity. Hands: gloves suitable for thermal risks, for example EN 407, and mechanical risks, EN 388. Body: hot-work clothing without exposed areas and protective footwear; select according to the task. Equipment and CE marking must meet applicable requirements.

Environmental controls: capture particles, contain residues and avoid untreated discharge of metal-containing effluents. Clean using methods that do not resuspend dust.

## SECTION 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| Property                                         | Available information                                                                                                                                 |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical state / colour / odour                  | Massive metallic solid; colour varies from copper to silver/yellow tones; no characteristic odour.                                                    |
| Melting point or range                           | FOSOP 0: 710–793 °C, according to the supplied TDS. Other grades: data not provided; consult the specific TDS.                                        |
| Boiling point or initial boiling point and range | Not determined for the mixtures; do not use one element's value as the alloy value.                                                                   |
| Flammability                                     | Massive alloy normally not combustible. Fine-dust behaviour not assessed in this sheet.                                                               |
| Lower and upper explosion limits                 | Not determined; not relevant for massive rods under usual conditions. Do not extrapolate to dust.                                                     |
| Flash point                                      | Not applicable to massive solid form; liquid parameter.                                                                                               |
| Auto-ignition temperature                        | Not determined for the mixture.                                                                                                                       |
| Decomposition temperature                        | Not determined. Heating may generate fumes; see section 10.                                                                                           |
| pH                                               | Not applicable to the insoluble solid metallic product.                                                                                               |
| Kinematic viscosity                              | Not applicable to the solid at ambient temperature.                                                                                                   |
| Solubility                                       | Practically insoluble in water in massive form; ion release may occur depending on the medium. No quantitative mixture value.                         |
| Partition coefficient n-octanol/water            | Not suitable for inorganic metallic mixtures; not determined.                                                                                         |
| Vapour pressure / relative vapour density        | Not determined for the alloys; product non-volatile under usual ambient conditions.                                                                   |
| Density or relative density                      | FOSOP 0: 8.4 g/cm <sup>3</sup> , according to the TDS. Other grades: no confirmed values.                                                             |
| Particle characteristics                         | Massive rods and wire; confirm dimensions in order/TDS. FOSOP 0: rods Ø 1; 1.3; 1.5; 2; 3 mm × 500 mm and wire. Does not include powder or nanoforms. |

### 9.2 Other information

9.2.1 Physical hazard classes: no mixture tests were supplied; do not make universal conclusions about dust. 9.2.2 Other safety characteristics: the FOSOP 0 TDS states a working temperature of 730 °C. Do not use this value for all grades.

## SECTION 10 Stability and reactivity

### 10.1 Reactivity

Low reactivity of the massive alloy under recommended storage conditions. Chemical attack, fine particles or heating may alter its behaviour.

### 10.2 Chemical stability

Stable under intended normal storage and handling conditions; avoid incompatible agents.

### 10.3 Possibility of hazardous reactions

Contact of molten metal with water/moisture may cause violent splashing. Reactions with acids or oxidisers depend on the alloy and conditions; no specific test was supplied. Use only qualified brazing processes, including control of fuel gases.

### 10.4 Conditions to avoid

Moisture in contact with molten metal, overheating, fume/dust accumulation and contact with incompatible materials. Heating required for brazing must be controlled according to the TDS.

### 10.5 Incompatible materials

Strong acids, strong oxidisers and halogens; joint incompatibilities are identified in section 1.2 and the TDS.

### 10.6 Hazardous decomposition products

Metal fumes and their oxides, including copper, silver and tin depending on the grade, and phosphorus oxides. Base metals, fluxes and coatings may generate other contaminants.

## SECTION 11 Toxicological information

### 11.1 Information on hazard classes as defined in CLP

No mixture toxicological tests, LD50/LC50 values or ATEs were supplied. Lack of data does not demonstrate absence of hazard. Silver assessment is based on the harmonised classification and generic limits stated in section 2; its bioavailability in the alloy has not been documented.

| Class or effect                   | Information and limitations                                                                                                       |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Acute toxicity                    | No quantitative mixture data; complete ingredient assessment pending.                                                             |
| Skin corrosion/irritation         | No alloy tests. Dust, fumes and process residues may irritate; hot metal causes burns.                                            |
| Serious eye damage/irritation     | No mixture tests. Particles and fumes may irritate; splashes and hot metal may cause injuries.                                    |
| Respiratory or skin sensitisation | No mixture data; an absolute statement of absence is not substantiated. Assess fluxes and contaminants.                           |
| Germ cell mutagenicity            | No mixture data; complete ingredient classification to be confirmed.                                                              |
| Carcinogenicity                   | No mixture data. Also assess base metals, coatings and generated fumes.                                                           |
| Reproductive toxicity             | Silver massive: Repr. 2, H361f. Concentration assessment covers FOSILVER 5/15/18 unless adequate data support another conclusion. |
| STOT single exposure              | Fumes may irritate respiratory tract; no data automatically assigning H335 to the supplied alloy.                                 |
| STOT repeated exposure            | Silver massive: STOT RE 2, H373, nervous system. Generic 10% limit reached by FOSILVER 15/18.                                     |
| Aspiration hazard                 | Not expected for solid rods; no specific data. Do not confuse with fume inhalation.                                               |

Relevant routes: fume/dust inhalation; eye and skin contact; secondary ingestion through contaminated hands. Possible acute and delayed effects: irritation, coughing, malaise and flu-like symptoms after certain exposures. The dose-response relationship and alloy-specific chronic effects have not been characterised in the received documents.

### 11.2 Information on other hazards

11.2.1 Endocrine-disrupting properties: ingredient documentation assessment not supplied; absence of effects not demonstrated. 11.2.2 Other hazards: burns, projectile injuries and effects related to the process and additional consumables. A generic SDS does not replace workplace exposure assessment.

## SECTION 12 Ecological information

### 12.1 Toxicity

No alloy ecotoxicological results or transformation/dissolution data were supplied. Ions and certain copper and silver compounds may be toxic to aquatic organisms; massive forms require their own classification assessment. Avoid release of product, dust and effluents.

### 12.2 Persistence and degradability

Biodegradation does not adequately describe inorganic metals. Metals can persist and transform into other chemical species; no mixture data were supplied.

### 12.3 Bioaccumulative potential

Depends on chemical species, bioavailability and organism. No mixture bioconcentration factor; do not infer an overall result solely from copper content.

### 12.4 Mobility in soil

Massive material has low physical mobility; particles and ions may disperse. No quantitative data; soil/water pH and composition influence mobility.

### 12.5 Results of PBT and vPvB assessment

Assessment not provided. Annex XIII PBT/vPvB criteria have a specific scope and must not automatically be applied to inorganic elements; check relevant ingredients and impurities.

### 12.6 Endocrine-disrupting properties

Assessment of ingredients and their respective regulatory lists/criteria not documented; do not declare proven absence.

### 12.7 Other adverse effects

Avoid metal accumulation in the environment. No additional mixture data supplied.

## SECTION 13 Disposal considerations

### 13.1 Waste treatment methods

Prioritise recovery and recycling of rods, chips and clean scrap through an authorised operator. Separate captured dust, slag, flux-containing residues, process water and contaminated packaging; they may require different classification and treatment from clean scrap.

Do not discharge to soil, drains or water, or place process residues in mixed municipal waste. Keep labelled, closed containers suitable for the waste. Do not mix waste streams without assessment.

Assign the European List of Waste code according to the source and process generating the waste, its composition and hazardous properties, with the responsible operator. A single code cannot be assigned solely from the alloy trade name. Clean packaging may follow the appropriate recovery route; contaminated packaging requires assessment of the residues present.

## SECTION 14 Transport information

The original SDS states that transport is not subject to dangerous-goods rules. This is retained only as information from the source document, pending validation by grade and supplied form. CLP and transport classifications are separate assessments. Confirm applicable ADR/RID, ADN, IMDG and ICAO TI/IATA DGR provisions in the edition in force.

### 14.1 UN number or ID number

Not assigned in the supplied documents. If non-subjection is confirmed, state "not applicable".

### 14.2 UN proper shipping name

Not assigned in the supplied documents; depends on the final transport assessment.

### 14.3 Transport hazard classes

Not assigned in the original document. Confirm for each grade and transport mode, including any environmental hazard criteria.

### 14.4 Packing group

Not assigned; to be confirmed according to the final transport assessment.

### 14.5 Environmental hazards

No data were supplied allowing a definitive conclusion on classification as an environmentally hazardous substance or marine pollutant. Consider massive form and relevant dissolution data, without automatically applying powder/compound classifications.

### 14.6 Special precautions for user

Transport in strong packaging preventing material loss and injuries from pointed ends. Protect from moisture and separate from incompatible materials. Do not transport hot/molten metal under this sheet. Check additional transport requirements if flux, coatings or other consumables are included in the shipment.

### 14.7 Maritime transport in bulk according to IMO instruments

Not intended for packaged rods. For another shipping form, carry out a specific assessment; this sheet is not a bulk-cargo declaration.

## SECTION 15 Regulatory information

### 15.1 Safety health and environmental regulations specific for the substance or mixture

Structure and content revised with reference to Regulation (EC) No 1907/2006 (REACH), Annex II, as amended by Regulation (EU) 2020/878. Classification and labelling: Regulation (EC) No 1272/2008 (CLP), with amendments and application dates relevant to issue of the sheet.

Consider Delegated Regulation (EU) 2024/2564, applicable since 01/05/2026, particularly the form-dependent silver and copper entries. Also consider Delegated Regulation (EU) 2023/707 for new hazard classes according to its transitional periods; amendments under Regulation (EU) 2024/2865 and postponements under Regulation (EU) 2025/2439 must be applied according to the relevant provision and date, without stating that all are already mandatory.

REACH SVHC Candidate List, Annex XIV (authorisation) and Annex XVII (restrictions): specific verification of composition and impurities has not been documented. Do not declare "no restrictions" based only on nominal tables. Confirm applicable registrations and communication obligations with suppliers as well.

In Portugal, consider current legislation on chemical agents at work, protection of particularly sensitive workers, waste management and emissions. UFI and poison-centre notification obligations depend on the final classification, legal status of the product and placing on the market; no exemptions have been demonstrated in the received file.

### 15.2 Chemical safety assessment

According to the original SDS, no chemical safety assessment was carried out for the mixture. No component reports or exposure scenarios were supplied; check the need to attach relevant scenarios where available and required.

## SECTION 16 Other information

Technical revision 02, prepared on 11/10/2026 from the original SDS, revision 01 dated 11/05/2026, and the supplied FOSOP 0 TDS. This version does not constitute manufacturer approval or replace validation by a competent person before commercial issue.

### Changes in this revision

Address standardised to Lote 32 B and email corrected to info@inducast.pt; Portuguese version prepared; composition organised by grade and ranges corrected; uses aligned with available technical information; inappropriate attribution of H315/H319/H335 from fumes removed; provisional silver assessment introduced; first-aid, fire, exposure, properties, toxicology and environmental subsections completed; unsupported absence-of-hazard statements and unsourced exposure limits removed; transport and regulatory obligations flagged for validation. This edition translates the revised Portuguese sheet into English.

### Assessment method and data required to finalise the sheet

Provisional classification by composition and CLP generic limits, without mixture tests or bioavailability correction. For final issue: obtain ingredient SDSs/dossiers and information on chemical and physical form in the alloy; confirm compositions/tolerances, silicon traces and impurities; conclude all hazards and labelling by grade, UFI/notification where applicable; document PBT/vPvB and endocrine data, REACH/SVHC/restrictions, exposure limits and available DNEL/PNEC; confirm properties of other grades and transport classification. Consider separate sheets where classifications or safety measures differ.

### Abbreviations and sources

ATE: acute toxicity estimate; CLP: classification, labelling and packaging; DNEL: derived no-effect level; PNEC: predicted no-effect concentration; PBT: persistent, bioaccumulative and toxic; vPvB: very persistent and very bioaccumulative; STOT: specific target organ toxicity; SCL: specific concentration limit; SVHC: substance of very high concern; UFI: unique formula identifier; ADR/RID/ADN: road/rail/inland-waterway transport; IMDG: maritime code; ICAO TI/IATA DGR: air transport rules.

Sources: supplied SDS and TDS; EUR-Lex, REACH/CLP and Regulations (EU) 2020/878, 2024/2564, 2023/707, 2024/2865 and 2025/2439; ECHA regulatory and classification information; INEM CIAV contact. Legislation: eur-lex.europa.eu; chemical information: chem.echa.europa.eu. Consulted: 11/10/2026. H361f and H373 relevant to the provisional assessment are reproduced in section 2; H400 means "Very toxic to aquatic life" and H410 "Very toxic to aquatic life with long lasting effects", cited in section 3 only for the specific copper form.

Training: use by professionals trained in brazing and control of the described risks. The information is intended to prevent health, safety and environmental risks; it is not a guarantee of joint performance or commercial properties.