

SAFETY DATA SHEET

in accordance with Regulation (EC) No 1907/2006 (REACH), Article 31 and Annex II as amended by Commission Regulation (EU) 2020/878

Product name	5 Star Metal
Version	6 (supersedes version 5)
Revision date	07.10.2026
Date of issue / printing	07.10.2026
Language	English (Ireland)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name	5 Star Metal
Product form	Mixture (alloy) supplied as solid metal bars, approx. 85 g each
Product codes	PA2059, PA2101
UFI	Not required (mixture not classified as hazardous)

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

Identified use	Consumer hobby use: melting and casting of metal miniatures (e.g. toy soldiers and figures) in moulds.
Uses advised against	Use by children under 14 years; use by persons aged 14–17 without adult supervision; use as a toy or toy material; casting of items intended for food or drink contact; casting of items intended to be worn on the skin or placed in the mouth.

1.3 Details of the supplier of the safety data sheet

An Grupa Edman Teo (trading as Prince August)

Kilnamartyra, Macroom, Co. Cork, P12 FN79, Ireland

Telephone: +353 26 40222 · Email: info@princeaugust.ie · Web: www.princeaugust.ie

Email of competent person responsible for the SDS: info@princeaugust.ie

1.4 Emergency telephone number

Supplier	+353 86 259 1755 — available 08:00–20:00 Irish time, Monday to Friday (confirm days); language: English
National Poisons Information Centre of Ireland	+353 1 809 2166 (public line, 08:00–22:00, 7 days) — verify before issue

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP): **Not classified**. The mixture as supplied (solid massive metal) does not meet the criteria for classification in any hazard class.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008: Not required.

Hazard pictograms: None. Signal word: None. Hazard statements: None. Precautionary statements: None required.

Recommended supplementary consumer information on pack: "Not a toy. Not for use by children under 14. Molten metal causes severe burns. Use only dry moulds and tools. Use in a well-ventilated area. Wash hands after use."

2.3 Other hazards

- **Thermal hazard:** in use the product is melted (melting point approx. 230 °C). Molten metal and hot moulds cause severe burns.
- **Steam explosion:** contact of molten metal with water or moisture (damp moulds, wet tools, condensation on cold bars, wet surfaces) can cause violent spattering and ejection of molten metal.
- **Fumes:** overheating well above the melting point may release metal oxide fumes (tin, zinc and antimony oxides), which may irritate the respiratory tract. Inhalation of zinc oxide fume may cause metal fume fever.
- **PBT / vPvB:** The mixture does not contain substances assessed as PBT or vPvB at 0.1 % or more.
- **Endocrine-disrupting properties:** The mixture does not contain substances with endocrine-disrupting properties at 0.1 % or more, as identified under REACH Article 57(f), Regulation (EU) 2017/2100, Regulation (EU) 2018/605 or Regulation (EC) No 1272/2008.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable.

3.2 Mixtures

Description: Lead-free white metal alloy based on tin.

Substance	EC No	CAS No	% w/w	Classification (EC) No 1272/2008
Tin	231-141-8	7440-31-5	94.5	Not classified
Zinc (massive)	231-175-3	7440-66-6	3.0	Not classified in massive form
Antimony (massive)	231-146-5	7440-36-0	2.5	Not classified in massive form — confirm against supplier SDS / ECHA registration

Specific concentration limits, M-factors and acute toxicity estimates: None applicable.

This product contains no lead. No substances on the REACH Candidate List of Substances of Very High Concern (SVHC) are present at or above 0.1 % w/w. No nanoforms.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information	The solid metal presents no hazard in normal handling. The main hazards arise during melting.
Inhalation (fumes)	Move to fresh air and rest. If breathing difficulties, coughing or flu-like symptoms (fever, chills, aching) develop, seek medical advice.
Skin contact (solid)	Wash with soap and water. If irritation persists, consult a doctor.
Skin contact (molten metal / burns)	Cool the burn immediately under cool running water for at least 20 minutes. Do not try to remove solidified metal stuck to the skin. Do not apply creams. Cover loosely with a clean non-fluffy dressing or cling film. Seek medical attention for all but very minor burns.
Eye contact	Rinse cautiously with running water for several minutes, holding eyelids open. If particles or molten metal have entered the eye, or if irritation persists, seek immediate medical attention.
Ingestion	Rinse mouth. Ingestion of small pieces is unlikely to cause acute toxic effects, but seek medical advice and show this SDS or the label.

4.2 Most important symptoms and effects, both acute and delayed

Thermal burns from molten metal. Inhalation of metal oxide fume may cause respiratory irritation and metal fume fever (flu-like symptoms appearing several hours after exposure, usually resolving within 24–48 hours).

4.3 Indication of any immediate medical attention and special treatment needed

Treat burns as thermal burns. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	The product is not combustible. Use media appropriate to the surrounding fire. For fires involving molten metal: dry sand or Class D dry powder.
Unsuitable extinguishing media	Do not use water, foam or water-based extinguishers on molten metal — risk of steam explosion and spattering of molten metal.

5.2 Special hazards arising from the substance or mixture

In a fire, metal oxide fumes (tin, zinc and antimony oxides) may be formed.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing. Keep water away from molten metal.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Solid bars: no special precautions. Molten spills: keep people, especially children and pets, away; do not touch until fully solidified and cooled; wear heat-resistant gloves and eye protection.

6.2 Environmental precautions

Prevent release to drains and watercourses as metal fragments or swarf.

6.3 Methods and material for containment and cleaning up

Allow molten metal to solidify and cool, then pick up mechanically. Collect for reuse or recycling as scrap metal. Do not use water on molten spills.

6.4 Reference to other sections

See Section 7 for safe handling, Section 8 for personal protection and Section 13 for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Read the casting instructions before use. For use by persons aged 14 and over (under adult supervision for under-18s — confirm policy).
- Melt only in a suitable metal ladle or melting pot on a stable, heat-resistant surface. Do not overheat beyond what is needed for casting.
- Ensure moulds, ladles, tools and bars are completely dry. Preheat moulds and tools before contact with molten metal. Never add wet or cold, condensation-covered metal to a melt.
- Work in a well-ventilated area; avoid breathing fumes.
- Keep children, pets and flammable materials away from the work area.
- Do not eat, drink or smoke while working. Wash hands after use.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place in the original packaging, out of reach of children. No special storage requirements. Incompatible materials: strong acids.

7.3 Specific end use(s)

Consumer hobby casting of miniatures. See Section 1.2.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Ireland, Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations):

Substance	OELV 8-hour TWA	OELV 15-min STEL	Source
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Antimony and compounds (as Sb)	0.5 mg/m ³	—	HSA CoP 2021 — verify
Tin, inorganic compounds (as Sn)	2 mg/m ³	—	HSA CoP 2021 — verify
Zinc oxide (fume)	5 mg/m ³	10 mg/m ³	HSA CoP 2021 — verify

DNEL / PNEC: Not established for the mixture.

8.2 Exposure controls

Appropriate engineering controls	Work in a well-ventilated area. Avoid overheating the melt.
Eye / face protection	Safety glasses with side shields (EN 166) when melting and pouring; a face shield is recommended.
Hand protection	Solid bars: none required. Melting and pouring: heat-resistant gloves (EN 407).
Body protection	Long sleeves of natural fibre (e.g. cotton) or leather apron; closed shoes. Avoid synthetic clothing that can melt.
Respiratory protection	Not required with adequate ventilation and normal casting temperatures.
Hygiene measures	Wash hands after use. Do not eat, drink or smoke in the work area.
Environmental exposure controls	No special measures. Recycle scrap metal.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	Value / reason for omission
Physical state	Solid (metal bars)
Colour	Silver-grey
Odour	Odourless
Melting point / freezing point	Approx. 230 °C
Boiling point or initial boiling point and boiling range	> 2000 °C (based on tin)
Flammability	Not flammable (massive metal)
Lower and upper explosion limit	Not applicable (non-flammable solid)
Flash point	Not applicable (solid)
Auto-ignition temperature	Not applicable (non-flammable solid)
Decomposition temperature	Not applicable (does not decompose; oxidises at high temperature)
pH	Not applicable (insoluble solid)
Kinematic viscosity	Not applicable (solid)
Solubility	Insoluble in water
Partition coefficient n-octanol/water (log value)	Not applicable (inorganic metal alloy)
Vapour pressure	Negligible at 20 °C
Density and/or relative density	Approx. 7.2–7.3 g/cm ³ at 20 °C
Relative vapour density	Not applicable (solid)
Particle characteristics	Not applicable (supplied as massive bars, not as powder)

9.2 Other information

9.2.1 Information with regard to physical hazard classes: No physical hazard classes apply.

9.2.2 Other safety characteristics: No further relevant information.

SECTION 10: Stability and reactivity

10.1 Reactivity

Not reactive under normal conditions of use and storage.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Molten metal reacts violently with water or moisture (steam explosion). Contact with strong acids may release hydrogen gas.

10.4 Conditions to avoid

Overheating of the melt; contact of molten metal with water, moisture or damp moulds and tools.

10.5 Incompatible materials

Water (when molten); strong acids; strong oxidising agents.

10.6 Hazardous decomposition products

None under normal conditions. When strongly overheated: metal oxide fumes (tin, zinc and antimony oxides).

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Hazard class	Assessment
Acute toxicity	Based on available data, the classification criteria are not met.
Skin corrosion / irritation	Based on available data, the classification criteria are not met.
Serious eye damage / irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT – single exposure	Based on available data, the classification criteria are not met.
STOT – repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Not applicable (solid).

Information on likely routes of exposure: Inhalation of fumes during melting; skin contact (thermal burns). Metal fume fever may occur after inhalation of zinc oxide fume from strongly overheated metal.

11.2 Information on other hazards

11.2.1 Endocrine-disrupting properties: The mixture does not contain substances with endocrine-disrupting properties at 0.1 % or more.

11.2.2 Other information: No further relevant information.

SECTION 12: Ecological information

12.1 Toxicity

Not classified as hazardous to the aquatic environment. The massive metal has very low solubility and bioavailability.

12.2 Persistence and degradability

Not applicable to inorganic metals. Metals do not degrade but may transform slowly.

12.3 Bioaccumulative potential

No relevant information available for the mixture.

12.4 Mobility in soil

Insoluble; low mobility in massive form.

12.5 Results of PBT and vPvB assessment

Not applicable to inorganic substances. The mixture does not contain PBT or vPvB substances.

12.6 Endocrine-disrupting properties

The mixture does not contain substances with endocrine-disrupting properties at 0.1 % or more.

12.7 Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product: re-melt and reuse, or recycle as non-ferrous scrap metal through a metal recycler or local civic amenity site. Do not dispose of in drains. Dispose of in accordance with the Waste Management Acts and local authority requirements.

Suggested European Waste Catalogue code: **20 01 40 (metals) for household quantities — confirm with waste contractor.**

Packaging: non-contaminated packaging may be recycled.

SECTION 14: Transport information

Not classified as dangerous goods for transport under ADR, RID, ADN, IMDG or IATA.

Item	ADR / RID / ADN / IMDG / IATA
14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	No. Not a marine pollutant.
14.6 Special precautions for user	None.
14.7 Maritime transport in bulk according to IMO instruments	Not applicable.

SECTION 15: Regulatory information

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

- Regulation (EC) No 1907/2006 (REACH), including Annex II as amended by Regulation (EU) 2020/878.
- Regulation (EC) No 1272/2008 (CLP): the mixture is not classified as hazardous.
- REACH Annex XVII (restrictions): no restrictions apply to the components. The product contains no lead.
- REACH Candidate List (SVHC): no SVHCs present at or above 0.1 % w/w.
- Regulation (EU) 2023/988 on general product safety.
- Ireland: Chemicals Acts 2008–2010; Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (as amended) and the associated Code of Practice.
- Directive 2012/18/EU (Seveso III): not applicable.

Limitation of use: Not a toy. **Not for use by children under 14 years. Users aged 14–17 only under adult supervision.**

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this mixture.

SECTION 16: Other information

Indication of changes

Version 6 is a full revision to the format of REACH Annex II as amended by Regulation (EU) 2020/878. Sections revised: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16. Principal changes: incorrect reference to lead removed from Section 3; CAS numbers added; water removed as an extinguishing medium for molten metal; occupational exposure limits added; PPE for casting added; density corrected; marine pollutant entry corrected to "No"; endocrine-disruptor information added; uses advised against clarified.

Key data sources

Supplier composition data; ECHA registration dossiers and C&L Inventory for tin, zinc and antimony; HSA Code of Practice for the Chemical Agents Regulations.

Training advice

Users should read the casting instructions supplied with the product and be informed about the hazards of molten metal before use.

Abbreviations and acronyms

ADN/ADR/RID: European agreements on carriage of dangerous goods by inland waterway/road/rail; CAS: Chemical Abstracts Service; CLP: Classification, Labelling and Packaging Regulation (EC) No 1272/2008; DNEL: Derived No-Effect Level; EC No: European Community number; EWC: European Waste Catalogue; IATA: International Air Transport Association; IMDG: International Maritime Dangerous Goods Code; OELV: Occupational Exposure Limit Value; PBT: Persistent, Bioaccumulative and Toxic; PNEC: Predicted No-Effect Concentration; STEL: Short-Term Exposure Limit; STOT: Specific Target Organ Toxicity; SVHC: Substance of Very High Concern; TWA: Time-Weighted Average; UFI: Unique Formula Identifier; vPvB: very Persistent and very Bioaccumulative.

Disclaimer

The information in this safety data sheet is based on our present knowledge and relates only to the product as supplied. It describes the product in terms of safety requirements and does not constitute a guarantee of properties. It is the user's responsibility to use the product in accordance with the instructions and applicable legislation.