

SAFETY DATA SHEET

Eurofer97 Metal Powder

Version 2.0 Date 3rd June 2024, First Issue Date: 21st October 2022



ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830
AS AMENDED BY UK REACH REGULATIONS SI 2019/758

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

1.1 Product identifier	
Product name	Eurofer97 Metal Powder GMP EUROFER97
1.2 Relevant identified uses of the substance or mixture and uses advised against	
Identified Use(s)	Additive manufacturing, hot isostatic pressing, thermal spray, metal injection Moulding, binder jetting
Uses advised against	Anything other than the above.
1.3 Details of the supplier of the safety data sheet	
Company Identification	Globus Metal Powders Ltd. Materials Processing Institute, Eston Road, Middlesbrough, TS6 6US
Telephone	+44(0)164 238 2000
E-mail (competent person)	gmp@globusmetalpowders.com
1.4 Emergency telephone number	
Emergency Phone No.	999 / 111 (or local emergency number)
Language(s) spoken:	English (or local language)

1. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture	
2.1.1 The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain	This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
2.2 Label elements	According to the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain
Product name	Eurofer97 Metal Powder
Contains:	None assigned.
Hazard Pictogram(s)	None assigned.
Signal Word(s)	None assigned.
Hazard Statement(s)	None assigned.
Precautionary Statement(s)	None assigned.
Supplemental information	None
2.3 Other hazards	Handling of this material may generate a dust which can cause mechanical irritation of the eyes, skin nose and throat. The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SAFETY DATA SHEET

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Not applicable

3.2 Mixtures

No component of this mixture is included above the relevant concentration levels detailed within section 3.2.1 of SDS regulation 2015/830.

SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider

Inhalation

Skin contact

Eye contact

Ingestion

Obtain special instructions before use. No action should be taken involving personal risk. Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Do not breathe dust. Avoid contact with skin and eyes.

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF ON SKIN: Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation develops and persists, get medical attention.

IF SWALLOWED: Rinse mouth. Give plenty of water to drink. Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps. Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Unsuitable extinguishing media

Sand; Earth; Dry extinguishing powder; D-powder

Do not use water jet. Direct water jet may spread the fire.

5.2 Special hazards arising from the substance or mixture

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.. In case of fire may be liberated: Carbon monoxide; Carbon dioxide; Oxides of iron and manganese.

5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Caution - spillages may be slippery. Provide adequate ventilation. Ensure operatives are trained to minimise exposures. No action should be taken involving personal risk. Avoid dust generation Avoid contact with skin, eyes and clothes. Do

SAFETY DATA SHEET

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- 6.2 **Environmental precautions** not breathe dust/fume/gas/mist/vapours/spray. Use personal protection equipment.
- 6.3 **Methods and material for containment and cleaning up** Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Do not allow to enter into soil/subsoil.
- 6.4 **Reference to other sections** Take up mechanically, placing in appropriate containers for disposal. Treat the recovered material as prescribed in the section on waste disposal.
See Section: 8,13.

SECTION 7: HANDLING AND STORAGE

- 7.1 **Precautions for safe handling** Obtain special instructions before use. Provide adequate ventilation when using the material and follow the principles of good occupational hygiene to control personal exposures. Avoid dust generation Avoid contact with skin, eyes and clothes. Do not breathe dust/fume/gas/mist/vapours/spray. Use personal protection equipment. Do not eat, drink or smoke when using this product. Remove contaminated clothing and wash clothing before reuse. Wash hands and face before breaks and after work and take a shower if necessary. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Usual measures for fire prevention.
- 7.2 **Conditions for safe storage, including any incompatibilities** Keep only in original packaging. Keep container tightly closed and in a well-ventilated place. Keep in a cool, dry place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Ambient temperatures.
- 7.3 **Specific end use(s)** Keep away from acids, strong oxidising agents.
See Section: 1.2.
- storage temperature
Incompatible materials

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 **Control parameters**
- 8.1.1 **Occupational exposure limits** The UK HSE (EH40) recommends the following limits for dusts: 10 mg/m³ (8hr TWA) total inhalable dust; 4 mg/m³ (8hr TWA) total respirable dust.

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Manganese and inorganic compounds (as Mn)	7439-96-5	-	0.2	-	-	Inhalable fraction
		-	0.05	-	-	Respirable fraction

Source:Workplace Exposure Limit (UK HSE EH40).

Notes:

LTEL: Long-term exposure limit

STEL: Short-term exposure limit

TWA: Time Weighted Average

Carc: Capable of causing cancer and/or heritable genetic damage

Sen: Capable of causing occupational asthma

Sk: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

- 8.1.2 **Biological limit value** Not established
- 8.1.3 **PNECs and DNELs** Not established
- 8.2 **Exposure controls**
- 8.2.1 **Appropriate engineering controls** Ensure adequate ventilation Guarantee that the eye flushing systems and safety showers are located close to the working place. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing

SAFETY DATA SHEET

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equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

8.2.2 Individual protection measures, such as personal protective equipment

Obtain special instructions before use. Keep good industrial hygiene. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke at the work place. Avoid dust generation Do not breathe dust/fume/gas/mist/vapours/spray.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Eye/ face protection



Wear eye protection with side protection. Recommended: EN166. Eyewash bottles should be available.

Skin protection



Hand protection:

Wear suitable gloves tested to EN374. Protective index 6, corresponding > 480 minutes of permeation time according to EN 374

Unsuitable material: Natural fibres (e.g. cotton); Leather

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Breakthrough times and swelling properties of the material must be taken into consideration. Check the tightness of the gloves before each re-use. Replace when worn.

Body protection:

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn.

Respiratory protection



Not normally required. Wear suitable respiratory protective equipment if processing involves working in areas where dusts or vapours are likely to be evolved. In case of inadequate ventilation wear respiratory protection.

Thermal hazards

Not applicable.

8.2.3 Environmental exposure controls

Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Solid (Powder; grey)
Odour	Odourless
Odour threshold	Not applicable
pH	Not applicable
Melting point/freezing point	No information available.
Initial boiling point and boiling range	No information available.
Flash point	Not applicable - solid
Evaporation rate	Not applicable - solid

SAFETY DATA SHEET

Eurofer97 Metal Powder

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Flammability (solid, gas)	No Information available.
Upper/lower flammability or explosive limits	Not applicable - solid
Vapour pressure	No information available.
Vapour density	Not applicable - solid
Relative density	7.7 g/cm ³
Solubility(ies)	Insoluble in water
Partition coefficient: n-octanol/water	Not applicable - Mixture
Auto-ignition temperature	Not applicable - solid
Decomposition temperature	No information available.
Viscosity	not applicable - solid
Explosive properties	No information available.
Oxidising properties	No information available.

9.2 Other information

Particle size	< 300 µm
Moisture content	No information available.
Layer ignition temperature (LIT)	No information available.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	Hazardous polymerisation will not occur.
10.4 Conditions to avoid	None known.
10.5 Incompatible materials	acids; strong oxidising agents.
10.6 Hazardous decomposition products	Hydrogen (Reaction with: acids) In case of fire may be liberated: Carbon monoxide; Carbon dioxide; Oxides of iron and manganese.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	
Acute Toxicity - Ingestion	Mixture: Based upon the available data, the classification criteria are not met. Calculated acute toxicity estimate (ATE) >2,000 mg/kg.
Acute Toxicity - Inhalation	Mixture: Based upon the available data, the classification criteria are not met. Calculated acute toxicity estimate (ATE) > 5 mg/L (Dust)
Acute Toxicity - Skin contact	Mixture: Based upon the available data, the classification criteria are not met. Calculated acute toxicity estimate (ATE) >2,000 mg/kg.
Skin corrosion/irritation	Mixture: Based upon the available data, the classification criteria are not met.
Serious eye damage/irritation	Mixture: Based upon the available data, the classification criteria are not met.
Respiratory or skin sensitisation	Mixture: Based upon the available data, the classification criteria are not met.
Germ cell mutagenicity	Mixture: Based upon the available data, the classification criteria are not met.
Carcinogenicity	Mixture: Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Mixture: Based upon the available data, the classification criteria are not met.
STOT - single exposure	Mixture: Based upon the available data, the classification criteria are not met.
STOT - repeated exposure	Mixture: Based upon the available data, the classification criteria are not met.
Aspiration hazard	Mixture: Based upon the available data, the classification criteria are not met.
11.2 Other information	None known

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Mixture: Based upon the available data, the classification criteria are not met. Estimated LC50 (Mixture): >100 mg/l
12.2 Persistence and degradability	No data for the mixture as a whole.
12.3 Bioaccumulative potential	No data for the mixture as a whole.
12.4 Mobility in soil	No data for the mixture as a whole.

SAFETY DATA SHEET

Eurofer97 Metal Powder

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12.5	Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6	Other adverse effects	None Known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1	Waste treatment methods	Do not allow to enter drains, sewers or watercourses. Dispose of this material and its container as hazardous waste. Disposal should be in accordance with local, state or national legislation.
13.2	Additional information	Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA/ICAO	
14.1	UN number	None assigned.	None assigned.	14.1
14.2	UN proper shipping name	None assigned.		
14.3	Transport hazard class(es)	None assigned.	None assigned.	14.3
14.4	Packing group	None assigned.	None assigned.	14.4
14.5	Environmental hazards	Not classified	Not classified as a Marine Pollutant.	14.5
14.6	Special precautions for user	See Section: 2		
14.7	Transport in bulk according to Annex II of Marpol and the IBC Code	No information available.		

SECTION 15: REGULATORY INFORMATION

15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture	
15.1.1	EU regulations	
	Authorisations and/or restrictions on use	Not restricted
15.1.2	National regulations	
	United Kingdom	
	UK – GB CLP Mandatory classification and labelling list	Manganese: Not listed
	UK REACH – Annex XVII	Manganese: Not listed
	UK REACH – Grandfathered registrations notified substance list	Manganese: listed
	UK – GB Biocidal Products Regulation (BPR) – List of Active Substances	Manganese: Not listed
	Germany	
	Water hazard class (WGK)	Water hazard class 2
15.2	Chemical Safety Assessment	Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: not applicable – V1.0

References:

Existing ECHA registration for Manganese (CAS No.: 7439-96-5).

Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830. Compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Classification of the substance or mixture.

Classification procedure

SAFETY DATA SHEET

Eurofer97 Metal Powder

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The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain	
Not classified	ATEmix Calculation(s) using Acute Toxicity data presented in Section 11

Legend

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
BS	British standard
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DIN	German Institute for Standardisation
DNEL	Derived no effect level
EU	European Union
EC	European Community
EC50	Effect concentration; 50 %
EL50	Effective loading rate; 50 %
ECHA	European Chemicals Agency
EN	European Standard
GB	Great Britain
HSE	Health and Safety Executive
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IEC	International Electrotechnical Commission
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Organization for Standardization
LC50	Lethal concentration at which 50% of the population is killed
LOAEC	Lowest Observed Adverse Effect Concentration
LOAEL	Lowest Observed Adverse Effect Level
MARPOL	The International Convention for the Prevention of Pollution from Ships
M-factor	Multiplying factor
NOAEL	No Observed Adverse Effect Level
NOAEC	No observed adverse effect concentration
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
vPvB	very Persistent and very Bioaccumulative
UK	United Kingdom
UN	United Nations
VOC	Volatile organic compounds

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

Disclaimers

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Annex to the extended Safety Data Sheet (eSDS)

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Exposure scenarios for substances in this preparation are not available.