

SAFETY DATA SHEET

FERROCHROME (FeCr)

Ferrochrome is not classified as hazardous under the CLP Regulation (1272/2008/EC) or as dangerous under the Dangerous Substances Directive (67/548/EEC), is not persistent bio accumulative and toxic (PBT) or very persistent and very bio accumulative (vPvB) as defined in Annex XIII of the REACH Regulation, and is not included in the ECHA candidate list of substances of very high concern.

Therefore provision of a Safety Data Sheet (SDS) according to Regulation 453/2010 is not mandatory. This Product Safety Information (PIS) is a voluntary presentation of certain information that may assist the user in the handling of Ferrochrome.

1 IDENTIFICATION OF SUBSTANCE AND COMPANY

1.1 Product Identifier

- Ferrochrome (FeCr)
- High Carbon Ferrochrome (HCFeCr)
- Charge Chrome

Reach Reference No

Chromium	01-2119485652-31-0009
Iron	01-2119462838-24-0052

CAS number

Ferrochrome	11114-46-8
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1.2 Relevant identified uses of the substance and uses advised against

This product is used as raw material for the manufacture of various grades of stainless steel, high chromium casting, and special steel.

No uses advised against.

1.3 Details of supplier/ manufacturer

Stanford Advanced Materials

23661 Birtcher Dr.

Lake Forest, CA 92630

+1 (949) 407-
8904

1.3.1 Name of contact person

Evalotta Stolt

Environment and Quality manager

+1 (949) 407-
8904

1.4 Emergency telephone number

Call your local emergency hotline.

112 is the emergency number throughout Europe.

2.1 Classification of the substance

This product does not meet the criteria for hazard classification requirements of the current European legislation on classification and labelling that are applicable for substances.

2.2 Label elements

This product is not hazardous. Labelling is not required.

2.3 Other Hazards

2.3.1 During handling

If a significant amount of dust is present, precautions should be taken to limit this exposure through normal control procedures such as local exhaust ventilation or respiratory protective equipment.

Use appropriate protective equipment; eye-protection and gloves when handling the material directly and suitable respiratory protection where dust occurs..

2.3.2 During use

Fumes may be produced during the melting operations. Chromium may be present in these fumes in oxidized forms, some of which maybe hazardous. See guidance on safe use.

3 COMPOSITION INFORMATION ON INGREDIENTS

3.1 Substances

Component	CAS Nr	EINECS/ELINCS	Amount (%)	Symbol	R-Phrases
Chromium (metallic)	7440-47-3	231-157-5	50 -70%	Cr	None
Iron (metallic)	7439-89-6	231-096-4	20-30%	Fe	None
Carbon	7440-44-0	231-153-3	4-9%	C	None
Silicon	7440-21-3	231-130-8	1-6%	Si	None
Nickel	7440-02-0	231-111-4	0.1-0.5%	Ni	None at this concentration range
<p><i>Other Components:</i> Remaining components of this product are proprietary, non-hazardous and/or are present at concentrations below reportable limits.</p> <p><i>Additional Information:</i> Amounts indicated are typical and do not represent a specification.</p>					

4 FIRST AID MEASURES

4.1 Description of first aid measures

Move the person to fresh air - if respiratory problem persists, seek medical attention.

4.1.1 Inhalation

If mechanical irritation is caused by dust in the airways move the person to fresh air - if respiratory problem persists, seek medical attention.

4.1.2 Skin contact

Wash skin with water and soap.

4.1.3 Eye contact

If mechanical irritation is caused by dust in the eyes, rinse eyes with plenty of water to remove dust. Seek medical attention if discomfort persists. Do not rub the eyes.

4.2 Most important symptoms and effects, both acute and delayed

This product is considered as non-hazardous.

4.3 Indication of any immediate medical attention and special treatment needed

No relevant information has been identified.

5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Ferrochrome is not combustible.

5.2 Special hazards arising from the substance or mixture

Ferrochrome is not combustible.

5.3 Advice for fire-fighters

Ferrochrome is not combustible.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Eye protection and respirators should be worn where dust is a potential hazard. Gloves should be worn when handling this material because of the risk of contact with sharp particles.

6.2 Environmental precautions

There are no special procedures for this material.

Dispose in a way approved by the competent local authorities.

Dry material can normally be re-used

6.3 Methods and material for containment and cleaning up

Collect spillage in a closed container. Avoid excessive dust generation. Material may be reclaimed for re-use.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

The product is a heavy and dense material. Avoid generation of dust. Protective equipment, gloves and goggles, should be worn when handling the material. Suitable respiratory protection should be worn where dust occurs.

7.2 Conditions for safe storage, including any incompatibilities

The product is stable in storage and should be kept dry. If not protected from weathering, a slight tarnishing may occur to the surface of the material, which is non-toxic and does not in any way detract from the properties and quality of the material.

7.3 Specific end use(s)

See section 1.2 above.

8 EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

8.1.1 National limit values

Users must always consult their national or regional regulatory authorities for advice on the current legal limits applicable to them. They should further check whether these limits are legally binding or only recommended guidelines.

Frequently used limit values for inhalable dust in Europe is

- eight hours 10 mg/m³
- short term 20 mg/m³ (Austria, Denmark and Germany)

National limit values for Sweden (AFS 2005:17)

Substance	CAS-nr	Limit value - NGV (8 hours)	Short term limit value - KTV (15 min)
Dust, total	-	10 mg/m ³	-
Dust, respirable	-	5 mg/m ³	-

8.1.2 DNEL and PNEC

Substance	DNEL (Derived No Effect Level)	PNEC (Predict No Effect Concentration)
Chromium	0.5 mg Cr / m ³	4.7 µg / l Cr (III)

8.2 National Exposure controls

8.2.1 Appropriate engineering controls

Use local exhaust ventilation for dusty operations.

8.2.2 Individual protection measures, such as personal protective equipment

Always wash the hands after finishing work.

8.2.3 Eye/face protection

Goggles / face shield if dust is a hazard

8.2.4 Skin

Long sleeves overalls; gloves for hands, where applicable

8.2.5 Respiratory

If exposure is above the Occupational Health limits, suitable respiratory protection equipment approved by national authorities should be used.

8.2.6 Thermal hazards

Not identified.

8.2.7 Environmental exposure controls

Do not wash spilled materials into drainage system, material may block drains. The limit values for particles (PM 2,5 and PM 10) of the Ambient Air Directive 1999/30/EC and its further amendments have to be implemented.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Metallic silver grey lumps, chips or fine material
Odour	No odour
Odour threshold	Not applicable as there is no odour
pH	Not relevant
Melting point	>1500 °C
Boiling point	2700C – 3000 °C
Flash point	Not relevant
Evaporation rate	Not relevant
Flammability	Not flammable
Upper/lower flammability or explosive limits	Not relevant
Vapour pressure	Not relevant
Vapour density	Not relevant
Relative density	6 – 9 ton /m ³

Solubility	Insoluble in water
Partition coefficient: n-octanol/water	Not relevant
Auto-ignition temperature	Not relevant
Decomposition temperature	Not relevant
Viscosity;	Not relevant
Explosive properties;	No explosive properties
Oxidising properties	Not oxidizing properties

9.2 Other information

Bulk density	3.2 – 3.7 ton/m ³
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10 STABILITY AND REACTIVITY

10.1 Reactivity

The product does not contain reactive functionalities.

10.2 Chemical stability

The product is chemically stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possible hazardous reactions

Ferrochrome can react with some acids with the evolution of hydrogen.

Ferrochrome can react with molten alkalis with the formation of compounds containing chromium (VI).

It is known that high temperature processes including production and welding of chromium and chromium-containing alloys can lead to generation of fumes containing chromium (VI). Although the precise identity of the chromium (VI) substances generated has not been identified it is important to recognize that several substances containing chromium (VI) have been classified as carcinogenic, mutagenic, toxic for reproduction and dangerous for the environment. It is therefore essential that workplace and releases to the environment associated with these activities are monitored to ensure compliance with national and/or Community legislative limits. The European Confederation of Iron and Steel Industries (Eurofer), the European Association of Metals (Eurometaux) and the European Welding Association (EWA) jointly developed Safe Use Recommendations for welding metals and alloys, compiled in a document that is available for REACH purposes.

10.4 Conditions to avoid

Once molten, ferrochrome produces fumes.

Dust suspended in air could cause dust explosions.

10.5 Incompatible materials

Ferrochrome can react with some acids with the evolution of hydrogen.

Ferrochrome can react with molten alkalis resulting in the formation of compounds containing chromium (VI) - see 10.3 above.

10.6 Hazardous decomposition products

See section 10.3 and 10.5

11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

a	acute toxicity	No acute toxicity
b	skin corrosion/irritation	Not corrosive or irritant
c	serious eye damage/irritation	Typical of a nuisance dust
d	respiratory or skin sensitization	Not sensitizing
e	germ cell mutagenicity	Not mutagenic
f	carcinogenicity	Not carcinogenic
g	reproductive toxicity	Not toxic for reproduction
h	STOT-single exposure	No STOT single exposure
i	STOT-repeated exposure	No STOT repeated exposure
j	aspiration hazard	No aspiration hazard

Precautionary notes:

During melting, pickling and welding stages (strongly oxidizing conditions), water soluble hexavalent chromium and oxides of metals may be present in the effluent fumes. Suitable precautions should be taken to minimize exposure of personnel to such fumes. See section 10.3 above.

Any moisture in the material should be regarded as an explosion hazard if it is to be used in high temperature.

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Based on available data, the environmental hazard classification criteria are not met.

12.2 Persistence and degradability

Ferrochrome is an inorganic substance and is not biodegradable. The solubility in water is considered low.

12.3 Bio accumulative potential

No or very low potential for bio concentration and bioaccumulation.

12.4 Mobility in soil

Ferrochrome is immobile in soil and sediment. Dissolved silica (and silicon) and all the metals within Ferrochrome are poorly volatile substances and partition predominantly in the aquatic or soil or sediment compartments.

12.5 Results of PBT and vPvB assessment

Ferrochrome is an inorganic material and it is not classifiable as a PBT/vPvB substance. Ferrochrome is not known to contain any >0,1 % or any <0,1 % PBT/vPvB impurities.

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Ferrochrome is not listed as hazardous waste in the European List of Waste (Commission Decision 2000/53 of 3 May 2000 and further amendments).

Disposal of waste should be undertaken by a licensed waste contractor in accordance with appropriate national and local regulations.

14 TRANSPORTATION INFORMATION

The material is not classified as hazardous for transport (ADR, RID, UN, IMO, IATA/ICAO).

15 REGULATORY INFORMATION

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

This Product Safety Information is prepared in compliance with

- Regulation (EC) No 1907/2006 for Registration, Evaluation, Authorisation of Chemicals (REACH).
- Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP).
- Commission 453/2012/EC amending Regulation (EC) No 1907/2006 (SDS)
- Commission decision 2000/53 of 3 May 2000 establishing a list of waste pursuant (European List of Wastes)
- Directive 2008/50/EC on ambient air quality and cleaner air in Europe.

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out because the substance is not classified as hazardous.

16 OTHER INFORMATION

Other references:

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