



SAFETY data sheet

In accordance with Article 32(Non-Dangerous Substance)(EC) No. 1907/2006 (REACH)
Substance designation: Electric arc baking slag

1 Identification of the substance / preparation and of the company

1.1 Trade name:	Black Garnet TM
1.1.1 Product identification:	Electric arc oven slag
1.1.2 Additional identifications:	Iron and steel slags from electric furnace in the production of carbon steel
1.1.3 REACH registration number:	01-2119485979-09
1.1.4 EC No .:	932-275-6
1.1.5 Cas No .:	91722-10-0

1.2 Identification of the intended and advised uses of the substance in question:

1.2.1. Intended uses:	Road construction, cement production, environmental recovery, formation of embankments, road foundations, railway ballast, hydraulic engineering, additive for cement, concrete and others hydraulic binders, water treatment and purification, drainage, production of rock wool, mortars and screeds, sandblasting, cutting to water, fillers for polymers and elastomers, geopolymers, abrasives
1.2.2. Uses advised against:	None

1.3 Details of the supplier of the safety data sheet:

1.3.1 Manufacturer:	Acciaieria Arvedi S.p.A.
1.3.2 Via:	Acquaviva, 18
1.3.3 Postcode / City:	26100 - Cremona
1.3.4 Country:	Italy
1.3.5 Telephone:	+39 0372 4781
1.3.6 Fax:	+39 0372 478030
1.3.7 Information provided by:	Safety data sheet manager
1.3.8 Emergency telephone number	+39 02 66101029

2. Hazards identification

2.1 Classification of the substance:	This substance does not fall under the hazard requirements according to Regulations relating to classification, labeling and packaging Of dangerous substances and mixtures (CLP) (EC 1272/2008)
2.2 Label elements:	Not applicable

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2.3 Other hazards:

Slag powder can act as an irritant and cause irritation
Mechanics of the eyes and respiratory system. PBT criteria do not
They are applicable to inorganic substances (non-toxic and non-toxic bioaccumulative)

3. Composition / information on ingredients:

3.1 Information relating to the substance:

Slag deriving from the manufacture of carbon steel
With electric oven.
N.CE: 932-275-6
CAS number: 91722-10-0
Composition of Ca-Mg-Fe-Al

3.2 Further information:

The electric furnace slag produced from carbon steel
They are crystal clear. The structure depends on the temperature and By controlled cooling rate.

4. First aid measures:

4.1 Description of first aid measures

4.1.1 In case of inhalation:

Take the person concerned outdoors. Consult a Doctor if irritation persists.

4.1.2 In case of skin contact:

Wash with plenty of soap and water

4.1.3 In case of contact with eyes:

Rinse eyes with water holding the eyelids well Open.

4.1.4 If swallowed:

Consult a doctor if irritation persists. rinse mouth and drink plenty of water

4.2 Most important symptoms and effects, both acute and delayed:

The mechanical friction of the slag in the eyes can cause Irritation

4.3 Indication of any need to immediately consult a doctor and special treatments: None

5. Firefighting measures:

5.1 Suitable extinguishing media:

Foam, carbon dioxide, spray (water).
The product itself
It doesn't burn. Coordinate nearby firefighting activities Of fire.

5.2 Unsuitable extinguishing media:

None

5.3 Special hazards arising from the substance or mixture:

None

5.4 Advice for firefighters:

Not applicable



6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- 6.1.1 For non-emergency workers: Keep unprotected people away or stay on the side
Windward. Avoid dust dispersion.
- 6.1.2 For those who intervene directly: Wear personal protective equipment.
Provide and/or maintain adequate ventilation.

6.2 Environmental precautions: Not needed

6.3 Methods for containment and remediation:

Collect the product mechanically, avoid as much Possible dust development. Use a method Cleaning that tends to reduce the development of dust.

6.4 Reference to other sections: Waste disposal: see section 13
Personal protection: see section 8

7 Handling and storage

7.1 Safe Handling Precautions

- 7.1.1 Tips for safe handling: Avoid dust dispersion. Where applicable, keep the substance wet. In closed areas provide adequate ventilation to avoid inhalation of dust
In case of further manipulation with predictable High dust dispersion, such as using a Ventilation with a drain filter or a Closed-circuit suction and culling.
- 7.1.2 Technical measures:
- 7.1.3 Hygiene measures: Do not eat, drink or smoke. Wash your hands first Break at the end of the shift.

8. Exposure control/individual protection

8.1 Control Parameters

8.1.1 Professional Exposure Limits (OEL): CAS-No. 91722-10-0 Nome:
Black Garnet Limit values – 8 h

	ml/m3	mg/m3	Fattore di superamento
breathable powder	1.25	A	
inhalable powder	10	E 2 (II)	
source (German legislation): TRGS 900 "Arbeitsplatzgrenzwerte"			

8.1.2 Additional Exposure Limit Tips: Observe National Legislative Regulations

8.1.3 DNEL/DMEL /DNEC and PNEC values: No specific threshold can be derived
To the substance



8.2 Exposure Controls

8.2.1 Professional Exposure Controls: Refer to Section 7

8.2.2 Airway protection In case of high dust concentrations:
use filter IN 149 FFP2

8.2.3 Hand protection:

Check resistance to glove chemicals
Protective. Use only gloves that
conform to 89/686/CEE

Use suitable materials for permanent
contacts and/or

Occasional: fabric gloves coated
with nitrilic rubber.

Penetration time (maximum wear
duration): 480 min

8.2.4 Eye protection:

Use airtight eyeglasses

8.2.5 Protective clothing:

Use protective clothing that covers
your arms and legs.

8.3 Environmental exposure controls:

Dust emissions from production
processes They should always be
checked to make sure they are
Comply with the requirements of the
Environment.

9. Physical and Chemical Properties

9.1 About Fundamental Physical and Chemical Properties

9.1.1 Appearance:

Solid – Gray

9.1.2 Smell:

Smell

9.1.3 Smell Threshold:

not applicable

9.1.4 PH value:

10 – 13 (Elucent second EN
12457-4)

9.1.5 Melting point:

> 1100 – 1400 degrees C

9.1.6 Initial boiling point and boiling interval:

> 2000 degrees C

9.1.7 Flammability point:

slags are inorganic material inert
with all analytes

Relevant in their most stable oxida
tion state, it cannot No further
oxidation occurs. Although they can
be Present oxidable materials
(graphite, traces of metal) is not It is
possible to generate a flammable
gas phase from the waste.

9.1.8 Evaporation speed:

not applicable melting point greater
than C°1000 degrees

9.1.9 Flammability:

non-flammable

9.1.10 Steam pressure:

not applicable, according to REACH
regulations, it is not necessary

Conducting studies for solids that
melt above 300 degrees Celsius
about 3 – 4 g/cm³ a (20 degrees
Celsius)

9.1.11 Density:

9.1.12 Water solubility:

< 1 g/l



9.1.13 N-octane/water distribution ratio: not applicable as slags are UVCB solids that consist

Almost exclusively of inorganic ions in glass matrix Crystal clear lattice. These ions are insoluble in solvents Organic including octane.

9.1.14 Self-ignition temperature: not applicable as iron slags are inorganic materials Inert with all relevant analytes in their most Stable.

9.1.15 Decomposition temperature: Not applicable, melting point > 1000 degrees Celsius

9.1.16 Viscosity: Not applicable due to physical state

9.1.17 Explosive properties: Iron slags are inorganic inert with all relevant analytes In their most stable state of oxidation. Iron slag does not They contain no chemical group associated with explosive properties.

9.1.18 Oxidizing Properties: Non-oxidant: Iron slags are formed at temperatures > 1000 degrees Celsius And they lack any material that can react exo Thermally combustible materials under normal conditions.

9.2 More information: None

10 Stability and responsiveness

10.1 Responsiveness: not responsive under normal conditions (see section 9)

10.2 Chemical stability: stable under normal conditions

10.3 None of the possibility of dangerous reactions (see section 9)

10.4 Conditions to avoid: None

10.5 Incompatible Materials: None

10.6 Dangerous Decomposition Products: None

11 Toxicological information

11.1 Acute toxicity: oral: EAF-C tested substance
OECD guideline 401, Wistar rat
LD50 > 2000 mg/Kg
Dermal: EAF-C tested substance
OECD guideline 402, Wistar rat
LD50 > 4000 mg/Kg
Inalary: GGBS-tested substance
OECD guideline 403, Wistar rat
LC50 (dust) (4h) > 5234 mg/m3
OECD guideline 412 (repeateddose

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- 11.2 Skin corrosion / irritation: skin: EAF-C tested substance
Acute irritant effect, OECD 404, New White Rabbit
Zealand. Result: non-irritating
- 11.3 Severe damage/eye irritation: eyes: EAF-C tested substance
Acute Irritant Effect, OECD 405, New White Rabbit
Zealand. Result: non-irritating
- 11.4 Respiratory or skin awareness: skin: EAF-C tested substance
OECD 406, Guinea-Guinea Dunkin-Hartley guinea pig
Result: no awareness
- 11.5 Germ cell mutagenicity: Mutagenicity: EAF-C tested substance, mutation test
Reverse Bacteria, OECD 471, Salmonella Result
Typhimurium. Result: no mutagenic effect
- 11.6 Cancer: There are no specific and reliable studies on carcinogenicity in animals.
- 11.7 Reproductive toxicity: No evidence from scuffle tests or other data for any effects on playback. No data available from studies dedicated in particular to reproductive toxicity. Because the Slags are similar to natural rocks, you should not expect toxic effects to the reproductive system.
- 11.8 STOT – single exposure: acute toxicity test results show no sign of a potential STOT for waste.
- 11.9 STOT – repeated exposure: the results of the acute toxicity test show no sign of a potential STOT for waste.
- 11.10 Suction Hazard: The waste is solid and does not meet the requirements for Classification of suction hazards according to Annex 1 Of the CLP regulation.



12 Ecological information

12.1 Toxicity:

Short-term fish toxicity, EAF-C tested substance: OECD 203, *Leuciscus idus*
LC50 (96 h) > 100 g/l

Short-term toxicity of aquatic invertebrates, substance

EAF-C Testata: OECD 202, *Daphnia Magna*

EC50 (48 h) 45 g/l

NOEC (48 h) > 80 g/l

Algal toxicity, tested substance EAF-C OCSE 201, *Scenedesmus subspictus*
IC50 (72 h) 42 g/l

Toxicity of microorganisms, a substance tested EAF-C: OCSE 209, active mud

EC10 (3 h) > 10 g/l

EC10 (3 h) > 10 g/l

- 12.2 Persistence and degradability: Methods for determining persistence and Degradability are not applicable to inorganic substances.
- 12.3 Bioaccumulation potential: No evidence of potential bioaccumulation (see Section 9)
- 12.4 Soil degradation: Iron slags are rock-like inorganic UVCBs Natural. Biodegradation has no relevance.
- 12.5 PBT assessment results: Not applicable for inorganic substances (non-toxic and non-toxic Bioaccumulabile)
- 12.6 Other side effects: Negative ecological effects are not expected based on the state Current scientific knowledge.

13 Disposal considerations

13.1 Waste treatment methods:

Waste produced from carbon steel production They can be recovered after the spill. In the event that It is no longer used, the waste can be disposed of According to local legislation.

- 13.2 List of compliance codes with AVV or CER: ERC code 10.02.01: waste from Slag processing or CER 12.01.17 Sludge resulting from non-dangerous industrial processing



14 Transport information

- 14.1 Trasporto via terra (ADR/RID/CDG Strada/ CDG Ferrovia):
Unregulated as a dangerous commodity
- 14.2 Internal navigation (ADN/ADNR):
Unregulated as a dangerous commodity
- 14.3 Maritime Transport (IMO): Unregulated as a dangerous commodity

15 Regulatory information

15.1 Health, safety and environmental standards and legislation, substance and mix specifications

- 15.1.1 EU Laws: No specific laws for this substance
- 15.1.2 National laws See for national legislation

15.2 Chemical safety assessment: **Chemical safety assessment has been carried out**

16 More information

- 16.1 Updates: Data updated from the previous version
Security Card Review: 05.03.2021
- 16.2 Literature: CSR: Report on Iron Slag Chemical Safety
- 16.3 Method referred to in art. 9 of the Regulation (EC) 1272/2008:
No classification and labeling requirements required
For hazardous substances according to the all. 1 of the Rules (CE) 1272/2008
- 16.4 Learn more: abbreviazioni:
n.d.a. - no data available
n.a. is not applicable
EAF C = electric furnat waste (steel production Carbon)
GGBS = granulated blast furnace slag
ECxx = Concentration-related effect: refers to the Concentration of a drug, antibody or toxic Induces an organism response for a quantity Specify after a defined exposure time
ICxx = Concentration of the inhibitor: a measure of the effectiveness of A substance in inhibiting a biological function or Specific biochemistry. Indicates the quantity of a particular Medication or other substance (inhibitor) needed to inhibit A given biological process (or component of a Process, that is, an enzyme, a cell, a receptor Cell phone or a microorganism) of 10-90 %.

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LCxx = Lethal Concentration
LDxx = Lethal dose: LDxx of a toxin is the necessary dose
To kill a specific amount (xx) of members of
A population tested after a certain Time frame. LD50 digits are used
Frequently as a general indicator of Acute toxicity of a substance.
NOEC - No concentration of observed effects.

Declaration:

The information is based on the current level of our knowledge. However, such information does not provide assurances about the properties of the product and does not establish legal rights to the contract. The product should only be used for the applications indicated in the technical manual or operating instructions. The recipient of our product is individually responsible for adhering to existing laws and regulations.

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