1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: **FeSi Briquettes, BriqSil®**

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

Product application:
Preparation for steel and iron alloying in smelting industry. Preparative for professional use only.

1.3. Details of the supplier of the safety data sheet

Address/Phone No.: **Elkem AS**
Foundry Products
P.O. Box 334 Skøyen, N-0213 Oslo, Norway
Telephone: + 47 22 45 01 00
Telefax: + 47 22 45 01 52
http://www.foundry.elkem.com
sds.efp@elkem.no
REACH and CLP helpdesk: https://echa.europa.eu/support/helpdesks
Emergency Phone No.: Not applicable.

2. Hazards identification

2.1. Classification of the substance or mixture.

Product classification according to Regulation (EC) No 1272/2008 (CLP)	
Hazard class and category:	Eye Dam. 1.

Adverse health and environmental effects:
Dust release may cause serious damage to eyes.
Metal alloys may be released in the form of dust from the preparation and cause skin and respiratory system irritation.

2.2. Label elements

Hazard pictograms:

Signal word:
Danger
Hazard statements:
H318. Causes serious eye damage.
Precautionary statements:
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310: Immediately call a POISON CENTER/doctor/…

2.3. Other hazards

The preparation will crumble in the contact with water and toxic gases may be released (arsine, phosphine).

3. Composition/information on ingredients

3.2. Mixture

Solid briquettes contain
86 – 96 % of powdered ferrosilicum
2 – 8 % of water glass
2 – 6 % of starch binder.

Hazardous components:
Silicic acid, sodium salt
EC No 215-687-4
CAS No 1344-09-8
Content 6 – 14.5 %
Eye Dam. 1. H318. Causes serious eye damage.
Skin Irrit. 2. H315. Causes skin irritation.

4. First aid measures

4.1. Description of first aid measures

4.1.1. General information: In all cases of doubt or if symptoms persist, seek medical advice.

4.1.2. Following inhalation:
Remove patient to fresh air. Wipe off the dust from nasal sinus and cough up dust particles.

4.1.3. Following skin contact:
Remove contaminated clothing, thoroughly wash affected skin with water and soap**.**

4.1.4. Following eye contact:
Immediately irrigate with running lukewarm water for about 15 minutes.
If irritation persists, seek medical advice.

4.1.5. Following ingestion:
Rinse mouth out with water and drink sufficient amount of water.

4.1.6. Self-protection of the first aider:
First aider: Pay attention to self-protection.

5. Firefighting measures

5.1. Extinguishing media: The product is non-flammable. Use extinguishing powders, sand, soil.

Extinguishing media which shall not be used for safety reasons:
Do not use water-based extinguishing media.

5.2. Special hazards arising from the substance or mixture:
Do not spread fire. In the contact with water, the preparation may release toxic gases (arsine, phosphine). During firefighting, the product should be covered with dry sand.

5.3. Advice for firefighters: None required.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid contact with water and humidity. Avoid dust formation. Use personal protective equipment – see chapter 8.

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6.2. Environmental precautions
No special measures required.
6.3. Methods and material for containment and cleaning up
Use standard procedures for removal of inert material. Take up spilled material mechanically, use vacuum cleaner Or sweeping for dust removal and place in a suitable container for hazardous waste. Waste disposal see chapter 13.

7. Handling and storage

7.1. Precautions for safe handling
Avoid contact with water and humidity. Avoid dust formation. Use personal protective equipment – see chapter 8.
After work wash hands and face thoroughly with water and soap. Do not eat, drink and smoke during work.

7.2. Conditions for safe storage, including any incompatibilities
Store only in the original container in dry and well-ventilated areas. Protect from water and humidity.

7.3. Specific end use(s)
Not required.

8. Exposure controls/personal protection

8.1. Control parameters
Ingredients with exposure control parameters for the workplace:

Substance [CAS No]	PEL mg/m^3	Remarks
Manganese and its compounds as Mn	1	
Arsine (7784-42-1)	0.1	Severe after effects cannot be excluded
Phosphine (7803-51-2)	0.1	

(PEL Permissible exposure level of a chemical substance in the environment air).

Limits for dust particles:
iron and its alloys: PELc: 10.0 mg/m3
(PELr = respirable fraction, PELc = total dust concentration).

Recommendation from the producer of the ferroalloy:
Ferroalloy dust 8.0 mg/m3 (highest permissible exposure level).

Exposure limit values for the workplace according to EU regulation 2006/15/EC – no limits set.

Limit values of biological exposition tests indicators for the preparation -urine tests

Ingredient	Indicator	Limit values		Test period
Arsine	Arsenic	0.05 mg/g creatinine	0.075 µmol/mmol creatinine	End of the workweek

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8.2. Exposure controls
Ensure adequate ventilation. Ensure only protected personnel will handle the preparation. Contaminated protective clothing may be reused after proper washing only. Equip the working area with eye wash station (eye bath).

8.2.1. Occupational exposure controls
Government regulation implementing the EU Directive 89/686/EEC, all personal protection in use has to be in compliance with this regulation.

Respiratory protection:	Not required if ventilation is sufficient. If dust is created, use respirator with antidust filter.
Hand protection:	Use safety gloves.
Eye protection:	Use tight antidust safety goggles.
Skin and body protection:	Use suitable protective clothing and shoes.

8.2.2. Environmental exposure controls
See appropriate Air-pollution and Water- pollution laws.

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9. Physical and chemical properties

9.1. General information

Physical state	solid - briquettes
Colour	grey
Odour	odourless, gases released after contact with water have garlic-like odor.

9.2 Important health, safety and environmental information

pH value	no data available
Boiling point/range	3 560 °C (ferroalloy)
Flash point	no data available
Flammability	non flammable
Explosive properties	not explosive
Oxidizing properties	no data available
Vapour pressure	no data available
Relative density	no data available
Solubility	no data available
Water solubility at 20°C	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	no data available
Vapour density	no data available
Evaporation rate	no data available
Melting point/range	1 300 °C (ferroalloy)

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10. Stability and reactivity

10.1. Conditions to avoid:	The preparation will crumble in the contact with water and toxic gases may be released (arsine, phosphine).
10.2. Materials to avoid:	None known.
10.3. Hazardous decomposition products:	Hydrogen, arsine, phosphine. Under normal handling and storage conditions, the product is stable.

11. Toxicological information

11.1 Exposure symptoms
Exposure symptoms may occur after contact with dust from the preparation.

Inhalation
The dust is irritating and causes throat and nose pain.

Skin contact
Dust causes irritation.

Eye contact
Dust causes irritation, inflammation, risk of serious damage to eyes.

Swallowing
Temporary digestive track irritation and difficulties. Symptoms of poisoning: nausea, vomiting, diarrhoea, loss of appetite, weakness.

11.2 Hazardous to health effects
Acute toxicity
- LD50 ,oral, rat (mg.kg-1): 3 400 (water glass)
- LD50, dermal, rat or rabbit (mg.kg-1): no data available
- LC50, inhalation, rat (mg.l-1): no data available

11.3 Subchronic – chronic toxicity
Arsine – haemolytic carcinogenic effect on erythrocytes, hazardous effect on nervous system, digestive system. Acute toxicity even several hours after exposition.
Phosphine – irritating for lungs, hazardous effect on nervous system and digestive system.

11.4 Sensitisation
No sensitisation effects.

11.5 CMR effects (carcinogenity, mutagenicity and toxicity for reproduction).
No carcinogenic effects, no mutagenic effects, no toxicity for reproduction.

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12. Ecological information

No environmental data available.

12.1 Ecotoxicity
- LC50, 96 hod., fish (mg.l-1): no data available
- EC50, 48 hod., daphnia (mg.l-1): no data available
- IC50, 72 hod., algae (mg.l-1): no data available

12.2 Mobility
No data available.

12.3 Persistence and degradability
No data available.

12.4 Bioaccumulative potential
No data available.

12.5 Results of PBT assessment
No data available.

12.6 Other adverse effects
No further information.

13. Disposal considerations

According to Waste catalogue, the waste may meet the criteria for hazardous waste.
Waste code number should by assigned by the end user in accordance with the use of the product.

Waste code:	10 02 99	Wastes not otherwise specified.
Hazardous property:	H4	

Recommended disposal of preparation and contaminated packaging
Recommended product disposal for juridical and natural persons carrying on business:
Unused product and contaminated packaging place into labelled containers for hazardous waste and pass on to an authorised waste disposal company.

14. Transport Information

This product is not classified as dangerous goods according to international transport regulations ADR.
It is recommended to use closed transport vehicles or transport in a container, protect from water and humidity.

15. Regulatory Information

The Product Safety Data Sheet is prepred in compliance with:
Regulation (EC) No 1907/2006 for Registration, Evaluation, Authorisation and Restriction of Chemicals (Reach).
Regulation (EC) No 1272/2008 on the clasification, labelling and packing of substances and mixtures (CLP)
Commission 453/2010/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 ambitne air quality and cleaner air for Europe.

16. Other Information

Restriction on use:
The product should not be used for other purpose than designated (see chapter 1.2). As the specific conditions of use are out of control of the manufacturer, it is the responsibility of the user, to adapt the specified recommendation to national laws and regulations. The safety data sheet describes the product from the safety point of view only and does not replace the technical data sheet.