

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 1/ 12
Release date: February 23, 2012
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PRODUCT SAFETY DATA SHEET

for

Calcium silicide

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Substance name:	Calcium silicide
Synonyms:	CaSi, FeSiCa
Trade name:	CaSi 30/60
REACH registration number Calcium:	01-2119516038-45-0009
REACH registration number Silicon:	01-2119480401-47-0050
REACH registration number Iron:	01-2119462838-24-0093

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

Manufacturing of metals, including alloys

Used for steel production

Additive

Used in the production of metal castings

1.3 Details of the supplier of the safety data sheet

Name:	OFZ, a.s.
Address:	Široká 381, 027 41 Oravský Podzámok, Slovakia
Phone number:	+421/43/5804 111
Fax number:	+421/43/5804 320
E-mail:	ofz@ofz.sk

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 2/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

1.4 Emergency telephone number

European emergency tel. number: 112

Emergency phone number
company: +421/43/5804 111

National toxicological
information center: +421 2 5477 4166

2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

2.1.1 Classification of the substance according to the CLP / GHS regulation

The substance does not meet the criteria for inclusion in accordance with Regulation EC 1272/2008.

2.2 Label elements

2.2.1 Labeling according to the CLP / GHS regulation

The substance does not meet the criteria for inclusion in accordance with Regulation EC 1272/2008.

Signal word: none

2.3 Other hazards

Data on the classification of the substance as PBT or vPvB are not available.

Dust in the air can form an explosive mixture.

The tested substances do not meet the criteria for classification under 4.3 "UN Recommendations for the Transport of Dangerous Goods Manual of Tests and Criteria Part III - 33.4.1.4".

According to the test "A12: Flammability (in contact with water)" (EC 440/2008), required by the REACH regulation, the reaction of the samples did not lead to the evolution of a dangerous amount of gas or gases that could be highly flammable.

Certain amounts of gases may be formed in contact with water, but these amounts are well below the limit values necessary for the classification of the substance.

Under unusual storage conditions in the presence of water, small amounts of gases may be released from the product.

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 3/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

3. COMPOSITION/INFORMATION ON INGREDIENTS

Description: FeSiCa is an alloy of iron, silicon and calcium.

3.1 Constituents

Constituents	Typical concentration	Concentration span	Notes
Si (Silicon) CAS: 7440-21-3 EINECS: 231-130-8	60.8% (weight)	> 55% (weight)	
Ca (Calcium) CAS: 7440-70-2 EINECS: 231-179-5	31% (weight)	> 29% (weight)	
Fe (Iron) CAS: 7439-89-6 EINECS: 231-096-4	4.0% (weight)	2.5-6.0% (weight)	

3.2 Admixtures

The substance does not contain any additives necessary for classification and labeling.

4. FIRST AID MEASURES

In the event of an accident or if you feel unwell, seek medical attention immediately. (Show the product label wherever possible). The use of protective equipment is required for the first aid worker.

4.1 Description of first aid measures

General information: In contact with clothing, skin and eyes, no damage to health is expected. However, in the event of an accident or persistent discomfort, seek medical attention immediately.

Inhalation: Move the person out of the danger area to fresh air. If symptoms persist, seek medical attention.

Skin contact: Before washing with water, use a dry brush to remove dust from the skin. Rinse immediately with soap and plenty of water. Remove all contaminated clothing or footwear.

Burns caused by molten material require medical treatment.

Eye contact: Immediately flush the eyes with a sufficient amount of water, also under the lids, for at least 15 minutes. If you wear contact lenses, remove them. Seek the help of an ophthalmologist immediately.

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 4/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

Contact of molten material with eyes requires immediate medical treatment.

Ingestion: Not likely. In case of ingestion, do not give liquids to unconscious persons and do not induce vomiting, seek medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

Redness, itching, irritation of the eyes, skin and mucous membranes, abdominal pain.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable:

Special powder for extinguishing metal fires, dry chemicals, lime, sand, dry sodium carbonate.

Unsuitable:

Do not extinguish with water or foam.

5.2 Special hazards arising from the substance or mixture

Explosive properties! In case of fire, the formation of poisonous gases is possible. Hydrogen is produced in contact with water or moisture.

5.3 Advice for firefighters

Secure the hazardous area. Evacuate personnel to a safe area.

5.4 Additional Information

Contaminated water or soil during firefighting shall be removed in accordance with official regulations. Do not flush into surface water or sewage system.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Wear suitable protective equipment (see section 8).

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 5/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

6.1.2 For emergency personnel

Eliminate all sources of ignition. Keep away from sparks or flames. Avoid stirring up dust. Isolate the affected area and do not allow unprotected persons to approach the area. Avoid contact with skin, eyes and clothing. Wear suitable protective equipment (see section 8). Never extinguish with water. Ensure adequate ventilation.

6.2 Environmental precautions

Based on the available studies, the given substance does not endanger the environment. Do not flush into surface water or sewage system.

6.3 Methods and material for containment and cleaning up

If safe to do so, prevent further leakage or spillage. Extinguish the product immediately by taking appropriate steps. Protect from water.

Keep away from sources of ignition. NO SMOKING. Wipe off the material to prevent dust build-up and follow the waste law. Keep the material for disposal in suitable closed containers. Prevent water from entering the containers.

Small amounts of spilled or leaked material are absorbed by non-combustible absorbent materials (sand, soil, diatomaceous earth) and placed in containers. Immediately remove contaminated material from the work area and store in closed waste containers. Do not rinse in water.

6.4 Reference to other sections

For more detailed information regarding residual waste, see section 13 and exposure controls and personal protective equipment, see section 8.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Instructions for safe handling

Handle in accordance with proper hygiene and safety practices. Close the container tightly. Store in a cool place. Avoid stirring up dust. Keep containers in a dry place and tightly closed to prevent absorption of moisture and subsequent contamination.

Instructions for protection against fire and explosion

Avoid sources of heat and ignition. Don't smoke. Dust with air can form an explosive mixture. Use of non-sparking tools. Take precautions against static discharge. If the situation requires, explosion protection is required.

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 6/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

Additional information on handling

Follow hygiene and safety measures when handling products. Do not eat, drink, smoke or smell the material in the workplace. Use sufficient extraction and ventilation in places where machines are located or in places where dust is likely to swirl.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Store sealed in original containers in a well-ventilated and cool place. Keep a sufficient distance from sources of ignition. Don't smoke. Protect from humidity and water.

Instructions for storage

Do not store with flammable or highly flammable materials. Store away from acids, oxidizing or reducing agents and water.

Additional information on storage conditions

Under unusual storage conditions in the presence of water, the product may release small amounts of gases.

7.3 Specific end use(s)

No information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limit values

Occupational Exposure Limit (OEL):

0.5 mg/m³ inhaled dust from FeSiCa

Derived No Effect Limit (DNEL) for long-term exposure:

is achieved while maintaining the OEL below the exposure limit value

8.2 Exposure controls

The producer and the consumer monitor and measure the values of harmful factors in their own workplace in order to meet the exposure limit values and take measures, especially of a technical nature, to reduce the risk of damage to human health and the environment.

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 7/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

8.2.1 Workplace exposure control

Measure the workplace exposure limit regularly. If dust is generated when handling the material while filling the profiles, use an extraction or ventilation system or other means to maintain the limit values of dust in the air.

8.2.2 Personal protective equipment

8.2.2.1 Eye/face protection

Wear tight-fitting safety goggles. (EN 166)

8.2.2.2 Skin protection

Wear tight-fitting protective clothing, gloves and use protective hand cream.

8.2.2.3 Protection of the respiratory system

Do not inhale the dust. Use a respirator when exposed to dust. (Respirator with P2 filter)

8.2.3 Control of environmental exposure

Dust emissions from the ventilation system or workplace must be checked to see if they meet the requirements of environmental protection legislation. A concentration below 0.5 mg/m^3 does not endanger the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	metallic gray luster, substance in solid state
Odor:	None
Odor threshold:	none, the substance is odorless
pH:	not determined
Boiling point:	not determined (substance in solid state with melting point $> 300^\circ\text{C}$)
Melting/solidification temperature:	approx. $1,200 - 1,550^\circ\text{C}$
Flash point:	not determined (substance is inorganic)
Flammability:	non-flammable
Explosive properties:	not explosive

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 8/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

Oxidizing properties:	does not oxidize
Vapor pressure:	not determined (melting temperature > 300°C)
Specific weight:	approx. 2.0-2.2 g/cm ³
Solubility in water:	insoluble
Distribution coefficient n-octanol/water (log. value):	not determined (substance is inorganic)
Viscosity:	not determined (at normal ambient temperature, the substance is solid and not liquid)
Autoignition temperature:	> 400°C, without signs of burning (EU method A.16)
Dissociation constant:	the substance does not decompose due to the lack of appropriate functional groups
Surface tension:	the substance is not active on the surface
Stability in organic solvents:	not determined (substance is inorganic)

9.2 Other information

Gas formation: small in contact with water

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data are available for this substance.

10.2 Chemical stability

Under normal temperature conditions, conditions of storage and use, the given substance is stable.

10.3 Possibility of hazardous reactions

If the material is handled and stored according to the instructions, there is no risk of dangerous reactions.

10.4 Conditions to avoid

Keep away from sources of heat and ignition. Avoid contact with air humidity and water.

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 9/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

Store away from moist air and away from water, acids, bases and oxidizing agents.

If the material contains impurities in the form of silicon carbide, it releases acetylene gas. In contact with acids, silicon hydrogen is released, which is a spontaneously flammable gas.

10.5 Incompatible Materials

Moist air, water, acids, bases, oxidizing agents.

10.6 Hazardous decomposition products

They are not, if the preparation is used in accordance with the intended use.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

No information available.

Specific effects in experiments on animals

No information available.

Irritation and corrosion

Decompensation of the substance through moisture in the tissues. The product causes burns to the eyes, skin and mucous membranes.

Sensitization

No information available.

Serious effects from repeated or prolonged exposure

No information available.

Carcinogenicity, mutagenicity, reproductive toxicity

No information available.

Empirical data on effects on the human body

No information available.

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 10/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

12. ECOLOGICAL INFORMATION

No data are available regarding toxicity, persistence and degradability, bioaccumulation potential, soil mobility and PBT and vPvB classification.

More details

Under unusual storage conditions in the presence of water, the product may release small amounts of poisonous and flammable gases that should not be released into the environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal instructions

Disposal of FeSiCa must be in accordance with local and national legislation. Where possible, prioritize recycling over disposal or incineration of the material. He contacts waste removal and disposal companies.

Waste/unused product disposal code

060499 WASTES FROM INORGANIC CHEMICAL OPERATIONS; waste containing metals other than specified in 06 03; unspecified waste

Waste disposal code of the used product

060499 WASTES FROM INORGANIC CHEMICAL OPERATIONS; waste containing metals other than specified in 06 03; unspecified waste

Disposal of FeSiCa must be in accordance with local and national legislation.

14. TRANSPORT INFORMATION

FeSiCa is not subject to regulations regarding the transport of dangerous goods in the framework of road transport (ADR) and rail transport (RID). The substance did not meet the criteria under classification 4.3 "UN Recommendations for the Transport of Dangerous Goods Manual of Tests and Criteria Part III - 33.4.1.4" Test N.5. FeSiCa is classified as dangerous for sea transport (IMDG) and air transport (ICAO-TI/IATA-DGR).

Avoid wetting the material during transport.

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN
Rev. No. 7
Page 11/ 12
Release date: February 23, 2012
Date of revision: December 19, 2022

15. REGULATORY INFORMATION

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

GHS - UN Globally Harmonized System of Classification and Labeling of Chemical Substances (GHS):
According to Chapter 1.5.2 of the UN Globally Harmonized System of Classification and Labeling of Chemical Substances (GHS), safety data sheets (SDS) are required only for substances and mixtures that meet the harmonized criteria for endangering safety, health and the environment. This product does not meet these criteria.

ARD/RID Regulations in terms of Class 4.3 "UN Recommendations for the Transport of Dangerous Goods Manual of Tests and Criteria Part III - 33.4.1.4" Test N.5. Ferrosilicocalcium is not classified within this class.

EU CLP - CLP Regulation on classification, labeling and packaging of chemical substances and mixtures:

According to Article 59(2)(b) EC no. 1272/2008 (CLP), regulating Article 31(1) of the REACH regulation, safety data sheets (SDS) are required only for substances and mixtures/special preparations that meet the criteria for endangering safety, health and the environment. Since this product does not meet the given criteria, a safety data sheet according to EC 453/2010 will not be issued. To provide information related to safety and health and environmental protection, product safety information will be provided instead.

EU REACH - Registration, evaluation and authorization of chemical substances:

According to Article 31(7) of the REACH Regulation, exposure scenarios resulting from the Chemical Safety Report (CSR) are required to be documented as an annex to the Safety Data Sheet. However, according to the REACH regulation Annex I, part 0. (Introduction), subsection 0.6. no. 4 and 5 such exposure scenarios are required only for substances and mixtures that are classified as dangerous. As this product is not classified as hazardous in the sense of CLP, the provision of exposure scenarios is not required." A chemical safety assessment was carried out for the main components of this substance. According to the REACH regulation, this substance does not require authorization.

15.2 Chemical safety assessment

There are no special regulations, restrictions and prohibitions.

16. FURTHER INFORMATION

These data are based on our current knowledge, but do not represent any guarantee of any particular product properties and do not establish any legally binding contractual relationships.

PRODUCT SAFETY DATA SHEET

(Prepared according to Annex II of the EP and Council Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878)

Number: KBU-OFZ-11-EN

Rev. No. 7

Page 12/ 12

Release date: February 23, 2012

Date of revision: December 19, 2022

16.1 List of abbreviations used

DNEL:	derived no effect limit
OEL:	workplace exposure limit value
PBT:	persistent, bioaccumulative and toxic substances
vPvB:	very persistent, very bioaccumulative substances

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