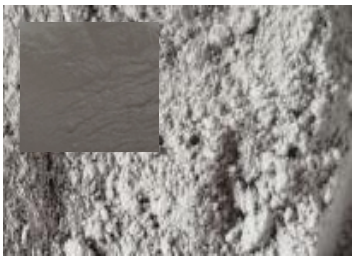
	TECHNICAL DATA SHEET **for** **CaSi fume** INTEGRATED MANAGEMENT SYSTEM (STN EN ISO 9001:2015, STN EN ISO 14001:2015 a STN EN ISO 45001:2018)	**Number: TL-009-EN** **Date of issue:** 24 February 2025 **Revision No.:** 0 **Revision date: -**



1. DESCRIPTION

CaSi fume is generated as a by-product during the production of FeSiCa alloy in an electric arc furnace (EAF). Silicon oxide fumes and other elements are captured on fabric filters in the EAF dedusting units and, after shaking off the filter fabric, collected in a silo of the filtration unit. The captured dust contains more than 60% by weight of SiO_2, under 25% by weight of CaO, and other oxides of aluminum, sodium, potassium, magnesium, iron, and sulfur in amounts ranging from 2 to 6% by weight. CaSi fume is a finely dispersed powdery material of gray color, spherical shape with a smooth surface, with particle size less than $0.1–0.2 \times 10^{-6}$ m. The production process is described in PP-046-SK Production and Storage of By-products.

2. USE

- for internal use by the operator – CaSi fume and the product manufactured by remelting CaSi fume, as an input raw material in the production process of FeSiCa alloy.
- as a secondary raw material (in original loose, partially compacted, compacted, micro-pelletized or briquetted form) for the production of ferroalloys,
- as a secondary raw material for the production of ferrous and non-ferrous metals,
- as a secondary raw material in the secondary production of ferroalloys,
- as an additive in casting powders LP 31.K / LP 32.BA,
- in the cement industry for clinker production.

Use is not permitted:

- for backfilling and remediation of collapse zones.

The Slovak Environmental Inspectorate, by decision No. 5765/77/2020-27815/2020/770010203/Z77 dated 27 August 2020, did not authorize the use of the by-product for backfilling and remediation of collapse zones.

3. CERTIFICATES/APPROVALS

- Integrated operation permit of OFZ, a.s., Široká plant No. 3574/2007/Jur/770010203 dated 5 May 2007 as amended (Consent that the substance is considered a by-product with the trade name "CaSi fume" and not waste).
- Certificate of production management system issued by the inspection certification body QUALIFORM SLOVAKIA, s.r.o., Pasienková 9 D, 82106 Bratislava.
- Certificate of constancy of performance for essential characteristics of construction products issued by the inspection certification body QUALIFORM SLOVAKIA, s.r.o., Pasienková 9 D, 82106 Bratislava. (STN EN 16622:2020 Siliceous-calcareous dust for concrete – admixture type II).
- OFZ, a.s. is certified under quality management systems STN EN ISO 9001:2015 and environmental system STN EN ISO 14 001:2015.

4. PHYSICAL AND CHEMICAL PARAMETERS

Qualitative and quality parameters to be met:

Parameter	Value
Silicon dioxide (SiO_2)	≥ 60% w/w
Calcium oxide (CaO)	≤ 25% w/w
Aluminium oxide (Al_2O_3)	≤ 2% w/w
Sodium oxide (Na_2O)	≤ 3% w/w
Potassium oxide (K_2O)	≤ 6% w/w
Magnesium oxide (MgO)	≤ 6% w/w
Sulfur trioxide (SO_3)	≤ 2% w/w
Iron(II) oxide (FeO)	≤ 5% w/w
Loss on ignition	≤ 5% w/w
Moisture	<2 % w/w
Activity concentration index	≤ 1
Bulk density	400 - 1250 kg/m^3

The bulk density of dry CaSi dust in its original loose form is 150–450 kg/m³. Upon customer request, pelletizing is possible, which typically increases the bulk density to 450–600 kg/m³ or 600–900 kg/m³, respectively.

5. QUALITY CONTROL

The qualitative properties of the product are defined by applicable STN and EN standards as well as internal manufacturing specifications. Quality control is carried out in accordance with Guideline OS-004-SK on final inspection and is ensured by the Quality Management Department. Analytical testing of parameters is performed at least once per month during production in the company's in-house operational laboratory (excluding the activity concentration index and bulk density), and once per year in full scope by an accredited laboratory. Records of analytical control are retained for a minimum of five years.

Registration number	Name of the Work Procedure
PP-009-SK	Incoming, In-Process and Dispatch Quality Control
PP-012-SK	Material Analysis by X-ray Fluorescence (XRF) Method
PP-013-SK	Determination of Carbon and Sulfur Content Using ELTRA CS 800 Analyzer
PP-014-SK	Quality Control of By-products
PP-016-SK	Methods for Determining Physical and Chemical Parameters of Materials
PP-017-SK	Material Analysis by Photometric Method and Atomic Absorption Spectrometry (AAS)
PP-088-SK	Material Analysis by Thermogravimetric Analysis (TGA)

During the final quality control, a QUALITY CERTIFICATE is issued, which includes the following information: Company name, Material name, Chemical composition, Batch class, Delivery number Gross and net delivery weight, Purchase contract number, Stamp, Date and signature of final inspection.

The delivery note shall include: Manufacturer´s name, Place of manufacture, Type of material - product name, fraction – particle size, Delivery method, Delivery note number, Quantity [kg, t].

The packaging shall include: Manufacturer´s name, Place of manufacture, Type of material - product name, fraction – particle size, Quantity [kg, t], Date of manufacture.

6. PACKING

Packing: Large-capacity bags (big-bags), tankers, drums
Form: Free-flowing – natural loose state, compacted form (micro-pelletized), briquettes
Weight: Max. 1200 kg per big-bag; according to permitted load capacity for other containers and transport vehicles

7. TRANSPORT

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Transported in closed containers, sealed large-capacity impermeable packaging (big-bags) loosely loaded on tarped trucks, tankers, and closed railway wagons. Transport by sea and loose bulk transport in other means of transport are not permitted.

8. STORAGE

Stored in sealed impermeable containers – big-bags, sacks, drums, silos – placed in dry warehouses in well-ventilated areas, away from heat sources.

9. SAFETY DATA

Safety information is provided in the Material Safety Data Sheet (MSDS) issued by the manufacturer under registration number KBU-009-EN issued on 10 March 2025.
The current revision of the MSDS is available upon request from the manufacturer or for download at: **www.ofz.sk.**

10. OTHER

Information is available at https://siroka.ofz.company/sk/simat.html

Replaces document: **TL-VP-CaSi úlet_01-00 issued on 12 May 2020**

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