



TECHNICAL DATA SHEET

for the product

CaSi fume

Rec. No. TL-VP CaSi úlet_01-00

Valid since: May 12, 2020

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Manufacturer: OFZ, a.s.	Seat: Široká 381, 027 41 Oravský Podzámok, Slovakia	Reg. No.: 36 389 030	

1. Introduction

CaSi fume is a finely dispersed powder material of a gray color consisting of very fine spherical particles of amorphous silicon dioxide and submicroscopic in diameter.

2. Production

CaSi fume is produced as a by-product during Calcium Silicon production in an electric arc furnace (EAF). Fumes of silicon dioxide are collected by bag house filter in dedusting units.

3. Technical Properties

3.1 Chemical Composition and Physical Properties

Chemical/Physical Parameter	Value
SiO ₂	≥ 60.0 [% w/w]
Al ₂ O ₃	≤ 2.0 [% w/w]
CaO	≤ 25.0 [% w/w]
Na ₂ O	≤ 3.0 [% w/w]
K ₂ O	≤ 6.0 [% w/w]
MgO	≤ 6.0 [% w/w]
SO ₃	≤ 2.0 [% w/w]
FeO	≤ 5.0 [% w/w]
Loss on Ignition	≤ 5.0 [% w/w]
Moisture	≤ 2.0 [% w/w]
Mass Activity Index	≤ 1.0 [-]
Bulk Density	150.0-900,0 kg/m ³

3.2 Bulk Density

Bulk density of a dry CaSi fume in its original undensified form ranges from 150.0 to 450.0 kg/m³. The apparent density can be tailored to the customer needs using pelletization when the apparent density can be increased to 450.0 to 600.0 kg/m³ or even to 600.0 to 900.0 kg/m³.

4. Hygiene and Health Aspects

Hygiene and health aspects are in full detail included in the Product Safety Data Sheet on CaSi Fume namely in Chapter 11 Toxicological Effects on health, Chapter 8 Personal Protective Equipment for ensuring health & safety and Chapter 4 First-aid Measures. Avoid generating of dust while handling the product due to its high level of dispersivity. Use suitable PPEs such as overall, gloves, goggles and respirators. With using appropriate PPEs and adhering to intended use, proper handling and storing in accordance with Technical Data Sheet and Product Safety Data Sheet for CaSi Fume, the product does not pose a threat to human health.

5. Control

The manufacturer is in charge of a system control. The procedures for analyzing and control of CaSi fume are included in the work procedures LAB-05/2007 - XRF Assays of Ferroalloys and Other Materials, LAB-06/2007 - Determining the Carbon and Sulphur Content in Ferroalloys and Other Materials, LAB-17/2006 - Testing Methods for Chemical Assays of MICROSILICA – SIOXID, CaSi Fume and Si Fume, PVS-08/2010 - Inspection & Control of Shipments and PVS-09/2010 - Determining the Physical Properties of Products, Raw Materials and By-products.

5.1 Properties, Testing Methods, and Minimum Testing Frequency under In-house Inspections:

Parameter	Testing Methods	Minimum Testing Frequency
SiO ₂	LAB-05/2007	Once a week
Al ₂ O ₃	LAB-05/2007	Once a week
CaO	LAB-05/2007	Once a week
Na ₂ O	LAB-05/2007	Once a week
K ₂ O	LAB-05/2007	Once a week
MgO	LAB-05/2007	Once a week
SO ₃	LAB-06/2007	Once a week
FeO	LAB-05/2007	Once a week
Loss on Ignition	LAB-17/2006	Once a month
Moisture	LAB-17/2006	Once a week
Radiologic Parameters - Mass Activity Index	Determined by gamma spectroscopic detector HPGe	Once a year - externally
Bulk Density	PVS-09/2010	Once a week

6. Storing

Store the product in the closed coverings such as big-bags, bags, barrels, silos, closed containers and covered warehouses.

7. Packaging & Delivery

CaSi fume is delivered in bulk (in the original form or densified) in cisterns, containers or on covered trucks, railway cars, cisterns, or in big bags according to the work procedure PVP-02/2018. CaSi fume can also be delivered in the form of briquettes upon customer`s request.

8. Labeling

A delivery shall also include the product labeling according to delivery note or labeling on the cover which shall include the following:

- name of the manufacturer;
- production site;
- sort of material: CaSi fume;
- form of material when delivered;
- rec. no.;
- tonnage [kg, t] ;
- stamp and signature of the final inspection.

9. Intended Use

The uses of CaSi fume can include the following:

- as a secondary raw material for the ferroalloy production (original undensified, partially densified, densified or briquettes);
- as a secondary raw material for ferrous and non-ferrous metal manufacturing;
- as a secondary raw material in its dust form or processed into briquettes that can be reused for the ferroalloy production;
- as an additive into casting powders LP 31.K/ LP 32.BA
- for backfilling and reconstruction of a fall zone;
- for clinker baking.