



TECHNICAL DATA SHEET

for the product

FeMn fume

Rec. No. TL-OFZ-02/19

Valid since: May 26, 2020

Replacing: TL-OFZ-02/19 dated February 1, 2019

Approved by: Ing. Milan Kelbel Director for Production and Production Services		Prepared by: Ing. Michal Balko Head of Production Services	
Issue No.:	Value Sign/Filing Term: A/10	Effective from: May 26, 2020	
Manufacturer: OFZ, a.s.	Seat: Široká 381, 027 41 Oravský Podzámok, Slovak Republic	Reg. No.: 36 389 030	

1. Introduction

FeMn fume is a finely dispersed powder material of brown color collected by the filtration units. FeMn fume is generated as a by-product during FeMn production. FeMn is alloy of iron, manganese and other admixtures used in the metallurgical industry. FeMn fume consists of a very fine spherical particles of amorphous manganese monoxide (and other elements, especially silicon) with a smooth surface and submicroscopic in diameter.

2. Production

FeMn fume is generated as a by-product during FeMn production in the electric arc furnace (EAF). Fumes of manganese oxides and other compounds are collected by bag house filters in the EAF dedusting units.

3. Technical Properties

3.1 Chemical Composition and Physical Properties

Chemical/Physical Parameter	Value
SiO ₂	0 – 20.0 [% w/w]
CaO	0 - 10.0 [% w/w]
Al ₂ O ₃	0 – 10 [% w/w]
Mn	25.0 - 55.0 [% w/w]
MgO	0 - 10.0 [% w/w]
FeO	≤ 5.0 [% w/w]
K ₂ O	≤ 25.0 [% w/w]
Na ₂ O	≤ 5.0 [% w/w]
SO ₃	≤ 5.0 [% w/w]
Zn	≤ 5.0 [% w/w]
C	≤ 5.0 [% w/w]
Radiologic Parameters - Mass Activity Index	≤ 1.0 [-]
Bulk Density	400.0 - 1,250.0 kg/m ³

3.2 Bulk Density

Bulk density of a dry FeMn fume in its original undensified form ranges from 400.0 to 900.0 kg/m³ and in its densified form ranges from 900.0 to 1,250.0 kg/m³.



4. Hygiene and Health Aspects

Hygiene and health aspects are in full detail included in the Product Safety Data Sheet on FeMn 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 FeMn 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 FeMn 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, PVS-08/2010 - Inspection & Control of Shipments and PVS-09/2010 - Determining the Physical Properties of Products and Raw Materials.

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 month
CaO	LAB-05/2007	Once a month
Al ₂ O ₃	LAB-05/2007	Once a month
Mn	LAB-05/2007	Once a month
MgO	LAB-05/2007	Once a month
FeO	LAB-05/2007	Once a month
K ₂ O	LAB-05/2007	Once a month
Na ₂ O	LAB-05/2007	Once a month
SO ₃	LAB-06/2007	Once a month
Zn	LAB-05/2007	Once a month
C	LAB-06/2007	Once a month
Radiologic Parameters - Mass Activity Index	Determined by gamma spectroscopic HPGe detector	Once a year - externally
Bulk Density	PVS-09/2010	Once a year

6. Storing

Store the product in closed warehouses, silos, containers and big bags according with PVP-01/2015 Operating the Dedusting Systems of Furnaces.

7. Packaging & Delivery

FeMn fume is delivered in bulk (in the original form or micropelletized) in non-permeable packaging in the covered trucks, railway cars, containers, cisterns or in other suitable vehicles. FeMn 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: FeMn fume;
- form of material when delivered (original undensified, micropelletized);
- rec. no.;
- tonnage [kg, t];
- stamp and signature of the final inspection.

9. Intended Use

The uses of FeMn fume can include the following:

- as a secondary raw material for the ferroalloy production (original undensified, micropelletized, briquettes);
- as a secondary raw material for ferrous and non-ferrous metal manufacturing;
- for backfilling and reconstruction of a fall zone.