

Product Data Sheet

Microsilica (Silica Fume) 92D — Densified Grade

Description

Description	Microsilica 92D (Densified Silica Fume) is a high-purity densified grade of amorphous silicon dioxide with a minimum SiO ₂ content of 92%. Produced by agglomerating ultra-fine silica fume particles into larger granules, it offers reduced dustiness and improved handling ease. The 92D grade bridges the gap between standard concrete-grade (85D) and premium refractory-grade microsilica, making it suitable for demanding concrete applications as well as select refractory and grout formulations.
Applications	High-performance concrete (HPC), high-strength concrete (HSC), ultra-high-performance concrete (UHPC), precast and prestressed concrete, grouts, self-compacting concrete (SCC), shotcrete, marine and offshore structures, bridge decks, low cement castables (where densified form is preferred for handling).
Grade	92D – Densified
HS Code	28112200

Key Benefits

1. Higher SiO₂ purity (min. 92%) – stronger pozzolanic reaction and superior strength gain vs. 85D
2. Densified form – reduced dustiness, easier batching, compatible with standard concrete plant equipment
3. Significant compressive strength gain – enables concrete above 80 MPa and UHPC formulations
4. Greatly reduced permeability – lower chloride ion diffusion, ideal for aggressive and marine environments
5. Lower impurity burden vs. 85D – tighter Fe₂O₃, CaO and alkali limits
6. Enhanced durability – resistance to sulphate attack, ASR, and carbonation
7. Dual-application grade – suitable for both concrete and select refractory uses

Chemical Analysis & Physical Data

Chemical Composition (Weight %)

Parameter	Unit	Specification*
SiO ₂	wt%	Min. 92.0

C (Carbon)	wt%	Max. 3.0
Fe ₂ O ₃	wt%	Max. 1.0
CaO	wt%	Max. 1.0
MgO	wt%	Max. 1.0
K ₂ O	wt%	Max. 1.5
Na ₂ O	wt%	Max. 0.8
H ₂ O (when packed)	wt%	Max. 3.0

Physical Properties

Property	Unit	Specification*
Loss on Ignition (LOI)	%	Max. 3.5
Coarse Particles (>45µm)	%	Max. 8.0
pH-value	—	5.0 – 9.0
Bulk Density – Densified (when packed)	kg/m ³	500 – 700
Specific Surface Area (BET)	m ² /g	15 – 25 (typical)
Activity Index (7-day)	%	Min. 90
Activity Index (28-day)	%	Min. 100

* Specifications conform to IS 15388:2003, ASTM C1240, and EN 13263-1. Test methods available on request. HS Code: 28112200

Concrete Application Guide

Application	Typical Dosage (% by wt. of cement)	Primary Benefit
High-performance concrete (HPC)	8 – 12%	Strength >60 MPa, low permeability
High-strength concrete (HSC)	10 – 15%	Strength >80 MPa
Ultra-high-performance concrete (UHPC)	15 – 25%	Strength >120 MPa
Precast / prestressed concrete	8 – 12%	Early strength, surface finish
Marine / aggressive environments	8 – 12%	Chloride and sulphate resistance
Self-compacting concrete (SCC)	5 – 10%	Flow, stability, reduced bleeding
Shotcrete / sprayed concrete	5 – 10%	Cohesion, reduced rebound

Dosage rates are indicative. Optimal dosage should be determined by trial mixes. Microsilica may partially replace cement (up to 15%) for cost optimisation and sustainability benefits.

Standards Compliance

Indian Standard IS 15388:2003 – Silica Fume – Specification

ASTM ASTM C1240 – Standard Specification for Silica Fume Used in Cementitious Mixtures

European EN 13263-1 – Silica Fume for Concrete – Definitions, Requirements and Conformity

Packaging

Packaging 1000 kg Jumbo Bags (FIBC / Big Bags)
25 kg Small Bags (multi-wall paper / PE-lined)
Custom packaging available on request.

Storage & Handling

8. Avoid dust generation – use appropriate PPE when handling
9. Store material properly, protected from moisture and contamination
10. Keep bags sealed until point of use
11. Store in a dry, covered area away from direct sunlight

Disclaimer: The information provided in this document is based on our current knowledge and is intended as a general guide. Ochnology Solution Pvt. Ltd. reserves the right to modify specifications without prior notice. Buyers are advised to conduct their own testing for specific applications.

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