

DATA SHEET

Skysil Fe Ammonio 0,8 -2,0 Chalcedonite – Filtration Medium

Skysil Fe Ammonio is a specialized filtration material obtained from the naturally occurring mineral chalcedonite. The cryptocrystalline structure of chalcedonite silica results in high porosity of the bed grains, reaching up to 30%. Its unique physicochemical properties and applications in water treatment technologies.

Technological Properties of the Chalcedonite Filtration Medium:

The chalcedonite filtration material has the following properties that distinguish it from other filter media available on the market:

- High mass capacity for contaminants, allowing for extended filtration cycles;
- High grain porosity, accelerating the biological activation of the bed for ammonium ion removal and shortening the activation time for manganese removal compared to commonly used filtration materials;
- Low bulk density, reducing the load on the filter bottom, which is especially important in pressure filters;
- Favorable hydraulic characteristics (low bed resistance even after suspended solids filtration, allowing for reduced system operating pressure);
- High filtration rates, reaching up to 15 m/h.

Table 1. Physical Properties of the Chalcedonite Filtration Medium

Parameter	Value
Grain size	0,8 – 2,0 mm
Bulk density	0,85 – 0,95 kg/dm ³
Specific density	2,62 – 2,65 kg/dm ³
Grain porosity	≤ 30 %
BET specific Surface area	5,0 - 6 m ² /g
Uniformity coefficient	≤ 1,5

Table 2. Chemical Composition of Chalcedonite Filtration Medium

Component	Content [%]
SiO ₂	97,7 – 98,9
Al ₂ O ₃ , MgO, CaO, Fe ₂ O ₃ , K ₂ O	< 2,0
Organic components	< 0,05

Table 3. Basic Operating Parameters of the Chalcedonite Filtration Medium

Parameter	Value
Filtration rate	≤ 15 m/h
Iron removal capacity	≤ 20 mg Fe/dm ³
Manganese removal capacity	≤ 1,5* mg Mn/dm ³
Ammonium ion removal capacity	≤ 2,0* mg NH₄⁺/dm³
Water pH range	6,5 – 9,5
Freeboard	40 %
Air backwash rate	13 – 17 L/s·m ²
Water backwash rate	12 – 15 L/s·m ²
Bed expansion	25 %

* after prior natural activation

The Skysil Fe Ammonio chalcedonite bed is packed in 15kg bags. Delivery or personal pickup conditions are individually arranged according to the order.