AVANTI
Stop leaks. Stabilize soil.
Control groundwater. Permanently.

TECHNICAL DATA SHEET

Ultrafine SD™
Cementitious Grout

US GROUT

Ultrafine SD is tested and certified by NSF International as complying with NSF/ANSI 61 and all applicable requirements.

NSF
Certified to NSF/ANSI/CAN 61

Description
Ultrafine SD™ Cementitious Grouts from US Grout are composed of a finely ground mixture of Portland cement, pumice pozzolan, and dispersant. Ultrafine SD has an average particle size of three microns, in stark contrast to typical particle sizes of 60 to 70 microns in conventional cements. Ultrafine SD grout is formulated with a naphthalene sulfonate-based superplasticizer for a fool proof system with minimal bleed and high compressive strengths in both rock fracture and soil stabilization applications.

Applications
- Stabilizing weak soils
- Sealing seepage in mines, dams, and tunnels
- Low permeability grout curtaining
- Hazardous waste containment
- Oil well squeeze cementing

Features & Benefits
- NSF/ANSI/CAN 61 Drinking Water Systems Component Certified
- Smaller particle size will penetrate smaller fractures and finer soils
- Ready to use – no additives required
- Stable North American source of supply – meets BABA requirements
- Composed of non-hazardous materials
- Lower permeability means reduced hydraulic conductivity and extended longevity when compared to ordinary Portland cement.
- Multiple grouting techniques including Tube-A-Manchette (TAM), and probe and curtain grouting

How Ultrafine SD Works
The chemical synergy created by combining finely ground ordinary Portland cement (OPC) with highly reactive natural pumice pozzolan and naphthalene sulfonate-based superplasticizer allows for a confident design with minimal bleed and high compressive strengths.

Optional Additives
- Additional Polynaphthalene-based additives may be used based on contractor field tests and project parameters.

Packaging – product is packaged by weight and is based on specific gravity (net wt.)
- Bags – 44 lbs. (20 kg)
- Super Sacks – 2,000 lbs. (900 kg)

Physical Properties*

DRY		
Superplasticizer**	0.9% by weight	
Color	Cement gray	Visual
Particle Size	90% < 8 microns, Avg. 3 microns	SediGraph 5100
Surface Area	15,110 cm^2/gram	ASTM C-204
Loose Unit Weight	0.497 grams/cc	
Specific Gravity	2.70 grams/cm^3	Accupyc 1330
Dry Weight/Wet Volume	1.01 kg/liter	
Blaine Fineness	1200 – 1400 m2/kg	
WET		
Water/Dry Grout**	0.8/1 by weight	
Specific Gravity*	1.54 grams/cc	API RP 13B-1

Rev. 05.2026

Initial Viscosity*	35 ~ 60 seconds	API RP 13B-1
Internal Cohesion*	1.22 Pascals	Lombardi Plate
Initial Gelation*	2.5 ~ 5.0 hours	Wally Baker Shear Vane
Final Gelation*	4.5 ~ 7.0 hours	Wally Baker Shear Vane
Initial Vicat Needle Set*	9.33 hours	ASTM C-191
Final Vicat Needle Set*	9.83 hours	ASTM C-191
Period of Workability*	2.5 ~ 5.0 hours	
Shrinkage*	-0.0260%	ASTM C-490, C-596, C-157
Bleeding*	0.50%	ASTM C-940
Hydrational Heat*	31°C	Adiabatic Chamber
Pressure Filtration*	0.100 ~ 0.103 $min^{-1/2}$	API Filter Press
Sulfate Resistant	Resistant to attack	Type V Cement
Permeability*	1x10E^{-14} cm/sec	Custom Equipment of Atomic Energy of Canada

**Varies with water/cement ratio and superplasticizer content*
***Recommended starting mix*

Mix Guidelines - See Mixing Guidelines available 24/7 at avantigrout.com
These precise mixing instructions must be followed for best results:

1. The mixer should be a high-shear “colloidal” mixer.
2. Recommended water/dry grout ratio is 0.8/1 by weight.
3. Add water to mixer and set unit on high speed.
4. Slowly add dry Ultrafine SD to mixer.*
5. Mix at high speed for desired time limit

*If additional USG Super SD Polynaphthalene is required, it should be premixed with the measured amount of mix water prior to adding Ultrafine SD.

IMPORTANT: Only use USG Super SD Polynaphthalene with Ultrafine SD.
USG Super VX Polycarboxylate is NOT compatible with Ultrafine SD and will negatively affect the set time and strength of the cement.

Performance
Ultrafine SD is thixotropic which means it will become stiff if allowed to remain at rest. This is true of all ultrafine cement grouts. The material will re-liquefy when a pressure slightly more than the material’s internal cohesion is applied. In practice, the grout is kept in motion using a continuous loop grouting setup.

Cleaning
Use water with light detergent.

Storage
Store in sealed bags only. Partially used or open bags will take on ambient moisture. Product should be stored in a covered, dry area to avoid exposure to moisture. There are no specific ambient temperature restrictions for storage, however, sudden dramatic changes in temperature that may promote moisture condensation should be strictly avoided.

Safety
Always use OSHA-approved personal protective equipment (PPE). Refer to the SDS for complete safety precautions. The SDS is available by request or via download at avantigrout.com.

Shipping – Motor Freight available

- Motor class 55
- Non-hazardous
- Air freight not available

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Notice

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