Nepheline 350/N500 DS

Nepheline Syenite

Features & Benefits

Stjernøy, Norway

Nepheline 350/N500 DS glassy phase promoters are produced from nepheline syenite, a naturally occurring sodium potassium alumina silicate. The high total contribution of alumina and alkalis supplied as silicates combined with the lowest possible levels of impurities make Nepheline 350/N500 DS an efficient and cost effective means of adding alumina to the glass batch.

Nepheline 350/N500 DS is mainly used as Al2O3 source for glass applications and has much better melting properties as pure alumina oxide and alumina hydroxide minerals. Due to the formation of eutectic phases the alumina oxides dissolves easily in the glass without risk on inclusions and glass defects and less energy is required to convert the glass batch into a glass melt. Nepheline 350/N500 DS is also a carbon neutral source of alkali oxides (Na2O & K2O) in the glass melt. Nepheline 350/N500 DS is characterized by low levels of contaminations and a very stable and consistent quality. Nepheline 350/N500 DS enables glass manufactures to produce glass products without quality problems and colour variations. Nepheline 350/N500 DS is applicable in all kinds of glass types that require alkalis and alumina oxides and the most well-known examples are flat glass and container glass.

Nepheline products are high alkali ceramic fluxes, produced from nepheline syenite; a naturally occurring, silica deficient, sodium – potassium alumina silicate.

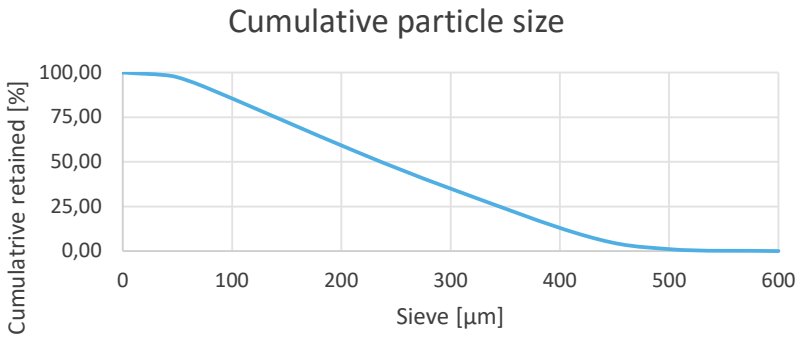
In comparison to other nepheline products, Nepheline 350/N500 DS's higher alumina content improves scratch resistance. It also means that the glaze formula needs less amounts of expensive calcined alumina, and less clay and kaolin, too much of which can adversely affect glaze slip rheology and aesthetic surface appearance. When used in place of feldspar, Nepheline 350/N-500 DS reduces the melting temperature of the glaze (thanks to high levels of sodium and potassium) thereby helping to reduce overall energy consumption. Nepheline 350/N500 DS also has a higher coefficient of thermal expansion (CoE) than a standard sodium feldspar, making the glaze CoE more compatible with the CoE of the tile body to improve the body-engobe[1]glaze fit. In terms of firing temperatures, Nepheline 350/N500 DS is extremely stable up to 1070o C whilst sintering and softening points are close to the firing temperature for glazed vitrified tiles (GVT).

Free of magnesia and with a barium oxide content of 0.4, our laboratory tests show that Nepheline 350/N500 DS enhances digital ink colour development whilst delivering a good level of matt glaze surface. It therefore outperformed other nepheline products in the tests, which either delivered good colour development but a lower matt, or a higher matt but lower colour development. Our tests also showed that GVT tiles with a glaze made with Nepheline 350/N500 DS were easier to clean than those made with other nepheline products.

All Nepheline grades are processed and sized with rigid adherence to ISO 9001 quality assurance program. The result is lower iron oxides, consistently uniform chemistries, particle size distribution, and top size controls for optimal performance.

Granulometric Data & Physical Characteristics

Mean values. These do not represent a specification.



			Comments
Melting Range		1250 to 1300 °C*	*The nepheline syenite reacts with quartz at much lower temperatures than the melting range indicates
Density		2.61 g/cm^3	
pH		10.0 – 10.3	
Bulk Density	compacted	0.9 – 1.3 g/cm^3	EN 1097-3
Bulk Density	loose	1.3 – 1.5 g/cm^3	

Chemical Analysis (XRF) %

Mean values. These do not represent a specification.

SiO_2	%	55	These oxides exist in crystalline complexes of Albite, Microcline and Nepheline. There is no free crystalline silica present.
Al_2O_3	%	24	
Na_2O	%	8	
K_2O	%	9	
CaO	%	1.7	
SrO	%	0.4	
BaO	%	0.3	
MgO	%	<0.1	
TiO_2	%	0.1	
Fe_2O_3	%	0.15	
LOI	%	1.0	

Availability

The products are available in Big bags and bulk. We deliver from warehouses centrally located around the world. Availability might vary depending on the product requested, or the point of destination.

For Product Information & Customer Service

Worldwide
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The technical data presented here is for marketing purposes only and is not contractually binding, the data herein is determined using Sibelco standard test methods. Since the product is based upon a naturally occurring material, we reserve the right to change this data when necessary. Safety information accompanying this product is available in the form of an SDS. All sales are undertaken strictly in accordance with our “General Conditions of Sale”, available upon request, or by a written sales agreement duly signed by us.

NEPHELINE_350_N500_DS_TDS_STJ_NO_JUN21_EN_3.1

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