



Technical Data Sheet:

R-E-D NSP-115+Li Nano Silica Powder

R-E-D NSP-115+Li Nano Silica Powder with Lithium is a high purity amorphous silica powder that utilizes the synergy of colloidal silica and lithium to mitigate the effects of alkali silica reaction (ASR).

Applications: Pre-mix products, repair & rehabilitation, underground/mining, shotcrete/gunite mortars, grout & mortar, underwater/marine, rapid set, specialty, self-consolidating mixes, geopolymer, oilfield, UHPC/HPC.

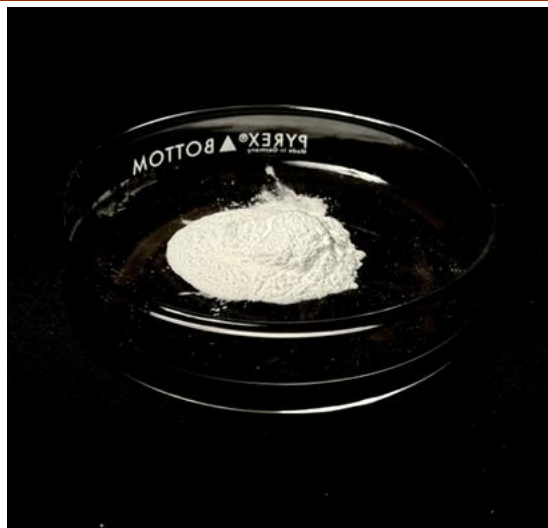
Performance Benefits:

- **Accelerate early strength:** Very-high surface area of colloidal silica particles provides nucleation sites for calcium silicate hydrate (C-S-H) formation while also facilitating a pozzolanic reaction with calcium hydroxide ($\text{Ca}(\text{OH})_2$) which can be vulnerable to chemical attack. This is useful to meet rapid strength requirements and strip forms faster.
- **Enhances Durability & Resists Harsh Environments:** Improves C-S-H density, fills voids and refines pore structure. This boosts densification of the binder matrix and reduces permeability to resist chemically and mechanically harsh environments (for example: chemical attack, freeze-thaw and abrasion).
- **Mitigates Alkali Silica Reaction:** Lithium stabilized colloidal silica can be a cost-effective alternative to lithium nitrate. Colloidal silica reduces permeability and refines pore structure so that free alkalis are bound and water ingress is limited. A small addition of well dispersed lithium reacts with any reactive silica in aggregates to form a non-expansive lithium-silicate gel instead of an expansive alkali-silicate gel. The synergistic properties of colloidal silica and nano sized lithium particles work together to mitigate ASR.
- **Improves Workability:** Enhances mix cohesion and reduces segregation or bleeding. This paired with the spherical particle shape performs well in high flow or self-consolidating concrete.

Packaging: 40lb pails, 90lb cardboard drums w/liner, 1,500lb super sacks.

Storage: Store in a dry location.

Safety: Safety data sheet available upon request.



Physical & Chemical Characteristics

TECHNICAL PROPERTIES	
Appearance	White Powder
Bulk Density (g/cc)	0.85
Mean Size (μm)	10-20
Surface Area (m^2/g)	500
SiO_2 (%)	86
Li_2O (%)	<1
10% Slurry pH	10.5
LOD 105C	12.6
Color (L)	91

Contact R-E-D:

Mike Hopkins
Senior Product Manager
mhopkins@redindustrialproducts.com
(330) 461-1633

Lacey Ryan
Customer Service / Inside Sales Manager
lfrantz@redindustrialproducts.com
(724) 815-3363

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