

INDUSTRIAL  
CHEMICALS  
DIVISION



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PQ Corporation is a leading producer of silicate, zeolite, and other performance materials serving the detergent, pulp and paper, chemical, petroleum, catalyst, water treatment, construction, and beverage markets. It is a global enterprise, operating in 19 countries on five continents, and along with its chemical businesses, includes Potters Industries, a wholly owned subsidiary, which is a leading producer of engineered glass materials serving the highway safety, polymer additive, metal finishing, and conductive particle markets.

Bulletin 17-110

# Lithium Silicates

## PRODUCTS

### LITHISIL® 25

Lithium Silicate  
2.5% Li<sub>2</sub>O, 20.5% SiO<sub>2</sub>  
% Solids = 23.0%  
Weight Ratio = 8.2  
Molar Ratio = 4.1  
pH = 10.8  
Specific gravity = 1.20  
Density = 24.2°Bé  
Viscosity = 20 cp

### LITHISIL® 829

Potassium/Lithium Silicate  
8.2% K<sub>2</sub>O, 1.0% Li<sub>2</sub>O, 20.5% SiO<sub>2</sub>  
% Solids = 29.7%  
Weight Ratio = 2.5  
Molar Ratio = 3.9  
pH = 11.7  
Specific gravity = 1.26  
Density = 30°Bé  
Viscosity = 34 cp

## FEATURES & BENEFITS

- Lithium Silicate forms a stable high ratio, low viscosity solution.
- Once dried, Lithium Silicate is relatively insoluble compared to Potassium and Sodium Silicates.
- Efflorescence Scale: Li < K < Na
- Refractoriness: Lithium Silicates have higher melting points and may change the refractory properties of Sodium and Potassium Silicates.
- Adhesion: Addition of Lithium Silicate to Sodium or Potassium Silicates may improve the adhesion to various different surfaces.

## POTENTIAL APPLICATIONS

- Concrete surface treatment
- Concrete admixture
- Coatings, usually as part of the binder system
- Welding rod binder additive
- Refractory applications
- Flame retardant
- Ceramics, glazes



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