



# Levasil FO1440

## colloidal silica for fiber bonding

### Why Levasil FO1440?

- **Good high-temperature bonds** - Colloidal silica bonds withstand temperatures up to 2300°F with low shrinkage.
- **Saves money** - Economical 40% concentration reduces freight and package costs over lower concentration sols.
- **Flocs with cationic starch** - Negative surface charge flocs cationic starch and refractory fibers together to form a three dimensional floc for good product strength.
- **Rigidizes effectively** - Can be used diluted or full strength for sealing or rigidizing of fiber bonded shapes.

### Typical Properties

Appearance	Clear liquid
Specific Gravity	1.30
Surface Area, m <sup>2</sup> /g	250
Particle size, nm (calc)	11
Silica, wt%	40
Na <sub>2</sub> O, wt.%	0.50
pH @ 25°C	10.4
Viscosity @ 25°C, cPs	15
Toxicity	Non-Toxic. See SDS

### Storage, Handling and Safety

Prolonged exposure to temperatures of 0°C (32°F) or below should be avoided as the silica will precipitate irreversibly.

### Packaging

4,000 gal. for bulk tanks; 275 gal. IBC totes; plastic 55 gal. drums; 1 & 5 gal. pails.

**Levasil FO1440** is the most commonly used colloidal silica for bonding refractory fibers and rigidizing refractory fiber shapes and boards. **LEVASIL FO1440** is an economical 40% concentration silica sol of 11 nanometer diameter amorphous silica spheres. The particles carry a slightly negative surface charge with a high surface area to weight ratio for good floccing with cationic starch.

### How to Use Levasil FO1440

**LEVASIL FO1440** should be flocced with cationic corn starch, like Westar+ or Westar+3, starting with a ratio of 5% starch based on weight of total solids.

#### Typical Formulation:

		with filler		with filler
Water, Gallons	50	50	50	50
Refractory Fiber, lbs	8	8	8	8
Mullite 100 filler, lbs	----	4	----	4
Westar+ Starch, lbs.	0.4	0.6	----	----
Westar+3 Starch, lbs.	----	----	0.4	0.6
<b>Levasil FO1440</b> , lbs	0.8	1.2	1.2	1.8

Follow above order of addition. Add starch flakes dry and mix for 10 minutes to allow hydration and swelling of starch before adding colloidal silica; mix another 5 minutes to complete floccing before vacuum forming. Dry at 250°F.

Note proper use: For best results, always add starch to slurry before the colloidal silica; the cationic starch serves to give a cationic charge to the fibers for efficient exhaustion of the negatively-charged silica particles on fibers.

For a price quote and valuable information on how we can help you improve your vacuum formed products call

**WESBOND**  
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