PYROTEK POURABLE INSULATION 1400

FOR HIGH-TEMPERATURE APPLICATIONS

Pyrotek Pourable Insulation 1400 is an acid-free, refractory-based pourable backup insulation designed for application temperatures up to 1400°C (2522°F). The insulation contains a unique combination of refractory ingredients which create excellent insulation and inertness against molten glass.

Pyrotek Pourable Insulation 1400 easily mixes with clean water for pouring, evenly fills tortuous or irregularly shaped spaces and provides adequate installation setting time.

COMPOSITION

Material	Approximate Percentage of Weight
Al_2O_3	43%
SiO_2	35%
CaO	14%
Fe_2O_3	<1%
TiO_2	<1%
Other	<4%

PRODUCT SELECTION

- Pourable Insulation 1400 – standard recipe intended for most application environments, where mixing water is <30°C.
- Pourable Insulation 1400 Hot Temperature Water (HTW) – alternative recipe intended for use when available mixing water is 30-55°C.

AVAILABILITY

- 2 kg bag | Use 2 gallon (8 liter) bucket for mixing
- 5 kg bag | Use 5 gallon (20 liter) bucket for mixing
- 10 kg bag | Use 8 gallon (30 liter) bucket for mixing

STORAGE & SHELF LIFE

- It is recommended to use this product within one year of its original production date.
- If stored in its original, sealed packaging and in a cool, dry location, shelf life can typically be extended up to eighteen months.

PHYSICAL PROPERTIES

Property	Value
Density–g/cm³ (lb/ft³)	0.48–0.53 (30–33)
Maximum Service Temperature	1400°C (2552°F)
Modulus of Rupture-MPa (Psi) Fired at 450°C (842°F) Fired at 850°C (1562°F) Fired at 1100 (2012°F)	 0.3-0.4 (43-58) 0.2-0.3 (29-43) 0.1-0.2 (14-29)
Cold Crushing Strength-MPa (Psi) Fired at 450°C (842°F) Fired at 850°C (1562°F) Fired at 1100 (2012°F)	 1.5-2.0 (217-290) 1.2-1.7 (174-246) 0.6-0.8 (87-116)
Linear Change– Fired at 845°C (1553°F)	 1.5-2%
Loss on Ignition (Solid powder mixture)	 2.5%
Thermal Conductivity (W/m·K) At 200°C (392°F) At 600°C (1112°F) At 1000°C (1832°F)	 0.11 - 0.12 0.14 - 0.15 0.15 - 0.16
Apparent Porosity Fired at 110°C (230°F) Fired at 450°C (842°F)	 63-65% 66-73%
Standard Mixing Ratio	1.0 kg (1.0L) water : 1.0kg dry refractory
Volume Filling	Using the standard mixing ratio, each 1kg (2.2lb) of dry refractory can fill 2.0L (0.07ft³) of insulation space
Total Pouring Time (Min.) including mixture preparation	 15 to 20
Setting Time (Min.)	40 to 55

Note: The physical and chemical properties listed represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice.

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Product Type: 106
Commodity Code: 02716

USAGE INSTRUCTIONS

Please closely follow these instructions to ensure proper mixing, pouring, and final material properties.

1. Prepare a high-energy mixing device such as a drill or auger mixer, a source of clean plant water, a suitable mixing container, and means to measure the weight (or volume) of water to be mixed.
2. Add an entire bag of powder to the chosen mixing container and gently stir to ensure ingredients are evenly distributed. **It is necessary to use an entire bag of powder for mixing, as supplied**.
3. Prepare enough clean tap water to mix powder and water in a 1.0/1.0 solids to water weight ratio (1 liter water per 1 kg powder). Water should be less than 30°C (86°F) for the standard version, and 30-55°C (86-131°F) for the HTW version.
4. Mix the powder and water for 1-2 minutes using the high-energy mixer. For 2 kg packaging, reduce stirring to 1 minute.
5. Scrape any dry material from the sides and bottom of the container using a hand tool.
6. Mix the slurry again for 1–2 minutes using the high-energy mixer. For 2kg packaging, mix for 1 minute.
7. Slowly pour the mixture into the insulation space immediately after mixing and allow it to harden.
8. Slowly preheat all parts of the backup insulation to at least 250°C (482°F) to remove any water.