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## Glassbond Sauereisen Electrical Insulating Cement No. 12

### Characteristics

- High dielectric strength
- Heat conductive and thermal shock resistant
- Withstands temperatures to 2,200°F (1,204°C)
- Oil and solvent resistant
- Chemical set
- Developed for potting and encapsulation
- Excellent bond strength
- Extremely hard surface upon setting
- Excellent abrasion resistance
- Odourless

### Recommended For

- Embedding
- Resistors
- Assembling
- Resistors
- Encapsulating
- Elements
- Potting

### Description

Sauereisen Electrical Insulating Cement N° 12 is an inorganic cement used for applications requiring high dielectric strength and volume resistivity through 2200°F. N° 12 offers low shrinkage and coefficient of thermal expansion making it an excellent cement for bonding or potting high alumina ceramics. The material is supplied in powder form and mixes with N° 12 liquid to form a cement paste.

### Physical Properties

Colour	Off white
Coefficient of thermal expansion	3.1 x 10 <sup>-6</sup> / °F (5.58 x 10 <sup>-6</sup> /°C)
Compressive strength	4000 psi (281 kg/cm <sup>2</sup> )
Density	180 pcf (2.88 gm/cm <sup>3</sup> )
Modulus of rupture	510 psi (35 Kg/cm <sup>2</sup> )
Dielectric strength @ 70°F (21°C)	76-80 Volts/mil
Maximum service temperature	2200°F (1204°C)
Shrinkage	<0.8%
Thermal conductivity	9.8-7.3 Btu.in/ft <sup>2</sup> .hr.°F (3.3 – 2.46 x 10 <sup>-3</sup> Cal.cm/cm <sup>2</sup> .sec.°C)
Tensile strength	290 psi (20Kg/cm <sup>2</sup> )
Volume resistivity @ 70°F (21°C)	10 <sup>8</sup> x 10 <sup>10</sup> ohm-cm

**Physical properties were determined on specimens prepared under laboratory conditions using applicable ASTM procedures. Actual field conditions may vary and yield different results; therefore, data are subject to reasonable deviation. Data should not be used for specification purposes.**

### Application/Instructions

MIXING - The cement powder should be thoroughly mixed before using. Weigh approximately 75% of powder into a clean mixing container and add 25% of N° 12 liquid. Place liquid in a clean mixing container and gradually add powder while mixing. Continue mixing until a smooth, uniform consistency is obtained. Mixing may be done with a slow-speed mixer or by hand with a spatula.

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Nº 12 may be mixed to a thinner consistency by regulating the amount of liquid used; however, the use of excess liquid will reduce mechanical strength, increase shrinkage and delay set time.

APPLICATION - Porous substrates may require dampening with Nº 12 liquid prior to cement application. Failure of cement to adhere indicates setting has begun -discard cement. Do not attempt to re-temper by adding more water.

## **Setting/Curing**

Cement Nº 12 hardens with an internal chemical-setting action after 18-24 hours at ambient temperature. Working time of Cement Nº 12 when Powder is mixed with water is approximately 30 minutes at 70°F (21°C). If it is desired to accelerate the cure, low temperature oven drying at 180°F (82°C) can be used. Avoid steaming while drying. Proper curing of Nº 12 is critical to developing maximum strengths. If the cement will be exposed to elevated temperatures, constant water immersion or steam environments, consult Sauereisen for an appropriate drying schedule recommendation.

For higher humidity resistance where it is impractical to fire the cement, a moisture resistant lacquer or silicone coating should be applied to the exposed surfaces.

## **Cleaning**

All equipment should be cleaned with soap and water before Nº 10 cures. If removal is required after cure, consult Glassbond for recommendations.

## **Packaging**

This material is supplied in various types and sizes of containers. Please contact Glassbond Sales for further details.

## **Shelf Life**

Cement Nº 12 powder has a shelf life of twelve (12) months when stored in un-opened, tightly sealed containers in a dry location at 70°F (21°C). If there is doubt as to the quality of the material, contact Glassbond.

## **Caution**

Consult the Material Safety Data Sheets and container label caution statements for any hazards in handling this material.

## **Warranty**

We warrant that our goods will conform to the description contained in the order and that we have good title to all goods sold. WE GIVE NO WARRANTY, WHETHER OF MERCHANTABILITY, FITNESS FOR PURPOSE OR OTHERWISE, EXPRESS OR IMPLIED, OTHER THAN AS EXPRESSLY SET FORTH HEREIN. Users shall determine the suitability of the product for intended application before using.

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