

SAUEREISEN

ELECTRIC RESISTOR CEMENT NO. 78 PASTE & P-78 POWDER

Electrical refractory for:

Elements
Heaters
Hot Plates

Irons
Ovens
Resistors

Sauereisen Electric Resistor Cement No. 78 is an ideal electrical refractory cement for coating resistors, coils, electric heating elements, furnaces, and embedding resistance wire. It replaces insulating varnish, enamel, mica, etc.

The cement is also available in powder form known as Sauereisen Electric Resistor Cement No. P-78. When mixed with water to the proper consistency, No. P-78 has the same characteristics as the No. 78 Paste.

Working properties of the cement exhibit a virtually unlimited pot life prior to exposure to air. This feature makes Nos. 78 & P-78 ideal for automated applications using dispensing equipment. Due to its inorganic composition, Electric Resistor Cement is very stable and will neither outgas, nor cause skin irritations like many other adhesives.

CHARACTERISTICS

- Heat conductive and thermal shock resistant.
- Safely insulates electricity.
- Withstands temperatures to 2600°F (1427°C).
- Resists oil, solvents and most acids (except hydrofluoric).
- Safe to use/non-toxic.
- Adheres to metal, ceramics, glass and other surfaces.
- Odorless.
- Available in powder and paste forms.

PHYSICAL PROPERTIES

Coefficient of thermal expansion No. 78 Paste	10.8 x10 ⁻⁶ /F° (6.0 x 10 ⁻⁶ /C°)
Coefficient of thermal expansion No. P-78 Powder	7.15 x10 ⁻⁶ /F° (3.97 x 10 ⁻⁶ /C)
Color	Tan to Gray
Compressive strength @ 7 days	3,300 psi (232 kg/cm ²)
Dielectric constant	3.4 - 4.5
Dielectric strength	
@ 70°F (21°C)	12.5 to 51.0 Volts/mil (490 to 2000 Volts/mm)
@ 750°F (399°C)	≤ 15.0 Volts/mil (588 Volts/mm)
@ 1475°F (801°C)	≤ 1.3 Volts/mil (51 Volts/mm)
Maximum service temperature	2600°F (1427°C)
Shear strength	375 psi (26.4 kg/cm ²)
Tensile strength	325 psi (22.8 kg/cm ²)
Thermal Conductivity	6.8-7.8 BTU·in./ft. ² ·hr·°F
Volume resistivity	
@ 70°F (21°C)	10 ⁶ -10 ⁸ ohm-cm
@ 700°F (21°C)	10 ⁵ -10 ⁶ ohm-cm
@ 1475°F (21°C)	10 ³ -10 ⁴ 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.

APPLICATION

Mixing - Sauereisen No. 78 is supplied as a ready-mixed paste. No. 78 should be thoroughly remixed to a smooth, uniform consistency prior to use.

The powder version of the product, Sauereisen No. P-78, is mixed with water at the ratio of 75-80% powder to 20-25% water, by weight.

If necessary, use Sauereisen Thinning Liquid No. 14 to thin the cements further when a more fluid consistency is required. Minimum amounts of liquid should be used, however, because excess liquid will reduce mechanical strength, increase shrinkage and delay set time.

Assembly - Sauereisen Electric Resistor Cement may be applied by brushing, dipping or spraying. Nos. 78 & P-78 are suitable for use on production lines with mechanical dispensers because the cement will not harden in the equipment during normal operation.

Surfaces to receive the cement should be clean and free of grease and dirt. Porous substrates should be dampened slightly with Sauereisen Thinning Liquid No. 14 prior to application of Nos. 78 & P-78.

As an air-setting adhesive, the cement should be used in thin applications. Avoid applying in a thickness greater than 1/4 inch.

SETTING/CURING

Nos. 78 & P-78 cure by air drying at room temperature. Drying time depends on the consistency and thickness of the application. Normally 18-24 hours drying at ambient temperature is sufficient.

When the cement has limited exposure to air, or if it is desired to accelerate the cure, low temperature oven drying at 180°F can be used. Avoid steaming while drying. If the cement will be exposed to elevated temperatures, contact Sauereisen for appropriate drying schedule recommendations.

If high humidity resistance is required and it is impractical to fire cement, a moisture-resistant lacquer or silicone coating should be applied to the exposed surfaces.

PACKAGING

No. 78: 1-quart and 1-gallon cans;
5-gallon pails.

No. P-78: 1-quart and 1-gallon cans;
50-lb. bags on stretchwrapped
pallets.

CLEAN-UP

All equipment should be cleaned with soap and water before Nos. 78 or P-78 cure. If removal is required after cure, consult Sauereisen for recommendations.

SHELF LIFE

When stored in unopened, tightly sealed containers in a dry location at 70°F, Sauereisen No. 78 Paste has a shelf life of six (6) months and No. P-78 Powder has a shelf life of one year. If there is a doubt as to the quality of the material, consult Sauereisen.

CAUTION

Consult 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. We are glad to offer suggestions or to refer you to customers using Sauereisen cements and compounds for a similar application. Users shall determine the suitability of the product for intended application before using, and users assume all risk and liability whatsoever in connection therewith regardless of any suggestions as to application or construction. In no event shall we be liable hereunder or otherwise for incidental or consequential damages. Our liability and your exclusive remedy hereunder or otherwise, in law or in equity, shall be expressly limited to our replacement of nonconforming goods at our factory or, at our sole option, to repayment of the purchase price of nonconforming goods.

Information concerning government safety regulations available upon request.

Sauereisen also manufactures products for corrosion resistance, electrostatic discharge protection and machinery grouting.

SAUEREISEN ...since 1899

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