

# SAUEREISEN

## INSA-LUTE™ ADHESIVE CEMENT NO. 1 PASTE & P-1 POWDER

The original Sauereisen inorganic adhesive for:

**Appliances  
Assembling  
Ceramics  
Thermal Conductivity**

**Insulating  
Metals  
Sealing**

Sauereisen Insa-Lute™ Adhesive Cement No. 1 is specified throughout the automotive, appliance and assembly industries for bonding, insulating, and encapsulating applications. A thermally conductive and electrically insulating cement paste, the material bonds well to metal, ceramics and glass. Upon curing, the cement resembles a durable ceramic and will resist high temperatures. No. 1 is also used to replace sealing wax, bolts, nuts, screws and mica because of its ability to readily adhere to practically any clean, non-plastic surface.

Insa-Lute™ Adhesive Cement is also available in powder form known as Sauereisen Cement No. P-1. When mixed with water at the proper ratio, No. P-1 has the same characteristics as the No. 1 Paste.

Working properties of the cement exhibit a virtually unlimited pot life prior to exposure to air. This feature makes Nos. 1 & P-1 ideal for automated applications using dispensing equipment. Due to its inorganic composition, Insa-Lute™ Adhesive Cement is very stable and will neither outgas, nor cause skin irritations like many other adhesives.

### PHYSICAL PROPERTIES

Coefficient of thermal expansion	6.2 x 10 <sup>-6</sup> /F° (11.1 x 10 <sup>-6</sup> /C°)
Color	Off white
Compressive strength @ 7 days	3,900 psi (274 kg/cm <sup>2</sup> )
Dielectric constant	3.5 - 6.0
Dielectric strength	
@ 70°F (21°C)	12.5 to 51.0 Volts/mil (490 to 2,000 Volts/mm)
@ 750°F (399°C)	≤ 15.0 Volts/mil (588 Volts/mm)
@ 1,475°F (801°C)	≤ 1.3 Volts/mil (51 Volts/mm)
Maximum service temperature	1,800°F (982°C)
Modulus of rupture	460 psi (32 kg/cm <sup>2</sup> )
Shear strength	710 psi (49 kg/cm <sup>2</sup> )
Tensile strength	410 psi (28 kg/cm <sup>2</sup> )
Volume resistivity	
@ 70°F (21°C)	10 <sup>8</sup> -10 <sup>9</sup> ohm-cm
@ 700°F (21°C)	10 <sup>4</sup> -10 <sup>5</sup> ohm-cm
@ 1,475°F (21°C)	10 <sup>2</sup> -10 <sup>3</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.

### CHARACTERISTICS

- Heat conductive and thermal shock resistant.
- Safely insulates electricity.
- Withstands temperatures to 1,800°F (982°C).
- Resists oil, solvents and most acids.
- Non-toxic and odorless.
- Adheres to metal, ceramics, glass and other surfaces.
- Good mechanical bond.
- Available in paste or powder form.

### INSTRUCTIONS

#### Mixing

No. 1 should be thoroughly remixed to a smooth, uniform consistency prior to use. If necessary, Thinning Liquid No. 14 can be used where the cement is required in a more fluid consistency. Minimal amounts of extra liquid should be used as excess liquid will reduce mechanical strength, increase shrinkage and delay set time.

The mixing ratio of No. P-1 should include 75-80% Powder and 20-25% water, by weight. Mixing may be done with a slow-speed mixer or by hand with a spatula.

#### Application

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.

Sauereisen Insa-Lute™ Adhesive Cement Nos. 1 & P-1 are air-setting and should be used in thin applications. Avoid applying in a thicknesses greater than 1/4 inch. If necessary, multiple coats may be applied to build thickness. Placement of the cement may be done by brushing, dipping or spraying.

## SETTING/CURING

Nos. 1 & P-1 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 that may approach or briefly exceed the recommended service limits, contact Sauereisen for appropriate drying schedule recommendations.

A heat cure is also suggested where humidity resistance is required. In addition, a moisture-resistant lacquer or silicone coating may be applied to the exposed surfaces.

## PACKAGING

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

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

## SHELF LIFE

When stored in unopened, tightly sealed containers in a dry location at 70°F, Sauereisen No. 1 Paste has a shelf life of six (6) months and No. P-1 Powder has a shelf life of one year. If there is doubt as to the quality of the material, consult Sauereisen.

## CLEAN-UP

All equipment should be cleaned with soap and water before Nos. 1 or P-1 cure. If removal is required after cure, a low concentration of sodium hydroxide may dissolve the cement. Consult Sauereisen for other recommendations.

## CAUTION

Consult Material Safety Data Sheets and container label Caution Statements for any hazards in handling this material.

## COMPLIANCE STATEMENTS

Insa-Lute™ Adhesive Cement is fully compliant with the following regulations and directives as published by the European Union:

- RoHS** - Restriction of Hazardous Waste
- WEE** - Waste Electrical and Electronic Equipment
- REACH** - Registration, Evaluation and Authorization of Chemicals

## 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

160 Gamma Drive  
Pittsburgh, PA 15238-2989 USA  
Phone 412/963-0303 Fax 412/963-7620  
www.sauereisen.com