

## PRC® 449FM insulating glass sealant

### Description

PRC® 449FM insulating glass sealant is a two-part, Permapol® polymer-based compound specifically developed for sealing insulating glass units against moisture, cold, heat, and contamination. PRC® 449FM is specially formulated for use on automatic sealing lines using a robot or for manual gunning of insulating glass units.

Permapol® insulating glass sealant, a patented polymer, combines the elasticity, memory, and durability of two polymer systems. The improved properties inherent in this polymer system help assure long-term unit performance in the most difficult environments.

### Use

PRC® 449FM insulating glass sealant is a high performance sealant for sealing insulating glass units. Its rapid cure rate at elevated temperatures makes it suitable for use in plants utilizing curing rooms. Its high strength properties make it ideal for use in either residential or commercial insulating glass units.

The sealant has outstanding resistance to weather, ozone, sunlight, heat, cold, and moisture.

The adhesive strength of PRC® 449FM insulating glass sealant is maintained even after long exposures to ultraviolet radiation, moisture, and vibrational stresses, as well as extremes in temperature.

PRC® 449FM insulating glass sealant is adaptable to most mixing, application, and curing conditions found in the insulating glass industry.

### Applicable standards

Insulating glass units manufactured with PRC® 449FM meet or exceed the following specifications:

|        |               |
|--------|---------------|
| USA    | ASTM E-774    |
| Canada | CAN/CGSB 12.8 |

### Limitations

PRC® 449FM insulating glass sealant is not intended for use in units manufactured for structural glazing applications. Insulating glass units made with PRC® 449FM should be fabricated and glazed in accordance with recognized industry standards. PRC® 449FM is intended for use in typical residential or commercial applications. Use of PRC® 449FM in units to be exposed to severe conditions, such as extreme heat or moisture, should be reviewed by PRC-DeSoto International Technical

Services. For specific recommendations, contact your local PRC-DeSoto International PRC® Insulating Glass Sealants sales representative.

Permapol® insulating glass sealants are compounded to be compatible with many commercial glazing materials. However, compatibility should be verified through suppliers of products or through testing programs. Glazing materials such as sealants, tapes, gaskets, and setting blocks should meet recognized industry standards such as those published by FGMA, IGMA, ASTM, or WDMA.

### Technical data

|   |                                  |
|---|----------------------------------|
| Hardness, Rex A   |                                  |
| After 16 hrs RT   | 30-40                            |
| After 7 days RT   | 38-48                            |
| Peel strength to glass (lbs/in width)                             |                                  |
| piw 100% cohesive break   | 20-30                            |
| After initial 30 days exposure to UV-moisture 100% cohesive break | 20-30                            |
| Lap shear strength, 100% cohesive failure (glass to glass)        | 150 psi                          |
| Moisture vapor permeance (ASTM E-398)                             | 0.36 metric perms                |
| Film thickness  | 60 mils                          |
| Relative humidity difference                                      | 100%                             |
| Temperature   | 100°F                            |
| Color   | Part A - Black<br>Part B - White |
| Service temperature, maximum                                      | 170°F                            |
| Mixing ratio  | Part B:Part A                    |
| By weight   | 100:8.6                          |
| By volume   | 100:8.0                          |
| Consistency   | Nonsag                           |
| Extrusion rate at 70 psi, g/min                                   | 150-300                          |
| Application life at 75°F, 50% RH                                  | 20-40 minutes                    |
| Cut apart time at 75°F, 50% RH                                    | 3-6 hours                        |
| At 100°F  | 1 hour                           |

### Surface preparation

**Glass:** To obtain good adhesion, the surface of the glass should be cleaned thoroughly using standard glass washing equipment with a detergent-based cleaner and hot water. The panels should be flushed thoroughly with softened or deionized water to remove all traces of **deterMetal:** To obtain good adhesion, the surfaces should be cleaned with an oil-free solvent.

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**Nylon:** To obtain good adhesion to nylon corners, the joint and immediately blown dry with oil-free high pressure air.

**Metal:** To obtain good adhesion, the surfaces should be cleaned with an oil-free solvent.

**Nylon:** To obtain good adhesion to nylon corners, the surface should be primed with PRC® Primer 51. This can be accomplished by immersing the corners in a one-quart can of primer. After the corners have been coated, remove them from the can and let dry for 30 minutes on screening or absorbent paper.

## Mixing instructions

Note: Proper mixing and correct proportions are extremely important if optimum results are to be obtained. Mixing by experienced personnel at a central location is recommended.

Various types of mechanical mixers can be used for mixing and dispensing PRC® 449FM insulating glass sealant. Continuous flow type mixers such as the Graco Hydra-Mate can be used to mix and dispense PRC® 449FM. When using these mechanical mixers, automatic metering devices must be adjusted to deliver base compound with accelerator in a ratio of 100:8.0 by volume (100:8.6 by weight).

**Caution:** Mechanical mixing machines must be individually adjusted and mixing schedules worked out to give the best results for each operator. Mechanical mixing machines should be checked periodically during service to assure proper calibration and adjustments.

## Application properties

Application life is the period of time that the compound remains at a consistency suitable for application.

Application life is based on standard conditions at 75°F and 50% relative humidity. For every 18°F rise, the application life is reduced by half; for every 18°F drop, it is doubled. High humidity at the time of mixing also shortens the tack-free time and cure rate.

The length of the cure period depends upon the application life, temperature, and relative humidity.

The time/temperature relationship is approximately the same as it is for the application life. Low humidities will extend the cure time. Cure may be accelerated by applying heat up to 120°F.

## Curing characteristics

PRC® 449FM cure properties are such that units can be

handled 1 1/2 to 3 hours after fabrication at a room temperature of 75°F. Cure is further hastened by temperatures above 100°F. Temperatures above 120°F are not recommended.

## Maintenance

Repair to damaged areas or remedial work on sealant (gas filling) requires cutting back to fresh material (if existing sealant is more than 24 hours old) and applying new material. For specific recommendations contact your local sales office.

## Technical services

Additional technical information and literature are available from your PRC-DeSoto International PRC® Insulating Glass Sealants sales office.

## Health precautions

PRC® 449FM insulating glass sealant is believed to be a safe material to handle when reasonable care is observed. Avoid repeated or prolonged contact with the skin (especially contact with open breaks in the skin) and ingestion. Always wash hands before eating or smoking. If accelerator contacts the skin, flush area with warm water. Obtain medical attention in cases of extreme exposure or ingestion. For additional information, please consult the Material Safety Data Sheet which is available upon request.

## Availability

When ordering this product, designate PRC® 449FM insulating glass sealant.

|                              |                     |
|------------------------------|---------------------|
| Packages                     | 55 gallon unit      |
| Total contents and container | 55 gallon unit      |
| Quantity                     | 12,705 cubic inches |

Note: The unit number designates the total contents of accelerator and base compound. Standard units are furnished with a premeasured quantity of base compound and accelerator individually packaged and assembled for mixing by the customer.

## Shelf life

The shelf life of PRC® 449FM insulating glass sealant is at least six months when stored at temperatures below 80°F in the original, unopened containers. Slight changes in the application properties may occur in storage, but these changes should not affect the performance properties of the cured material.

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