



TECHNICAL INFORMATION

KALEX[®] 49417/59417 (formerly KALEX[®] 19417) Filter and Permeator Bonding Adhesive System

PRODUCT DESCRIPTION

KALEX 49417/59417 is a two-component polyurethane system designed for reverse osmosis production (RO). The adhesive binds and seals the filaments in ultra filtration, nano filtration and RO filters.

KALEX adhesive systems offer the flexibility of room temperature processing. This system is hydrophobic and features both excellent membrane wetting and sag resistance.

KALEX 49417/59417 is a hydrophobic polyurethane designed for both wet and dry RO filters. It has a convenient 1:1 mix ratio. All the components are listed in FDA 175.105 or 175.300 and 170.39 (reference 99-015).

MIXING AND CURING SCHEDULE

The production of the desired polyurethane requires accurate measurement of the two components and adequate mixing. In general, hand-mixing small production runs is easily accomplished by weighing the two components. Machine mixing utilizes the volumetric ratio. Most machines are calibrated by weighing the components and adjusting the volume ratio. Larger volume hand mixing is easily controlled by filling pre-measured buckets to the indicated heights. The mix ratios are shown below.

<u>Ratio</u>	<u>49417</u>	<u>59417</u>
By weight	115	100
By volume	100	100

The gel time and work-life vary with the mass and the ambient temperature. Larger masses and higher temperatures reduce the work-life. Lower temperatures extend the work life.

The cure schedule is dependent upon the temperature. The recommended cure schedule will vary with the desired properties. The recommended schedule to achieve the typical properties are shown below:

Cure 3-7 days at @ 25 °C (77°F)

TYPICAL UNCURED PROPERTIES

	<u>49417</u>	<u>59417</u>	<u>Mixed</u>
Color	Light Brown	Translucent White	Pale Yellow
Viscosity @ 25 °C, cps	24,500	20,000	21,000
Weight per gal., lbs.	8.75	7.70	8.23
Specific gravity @ 25°C	1.05	0.92	0.99
Gel time, minutes 100 gm mass @ 25°C	-----	-----	40
Shelf Life (in separate sealed containers), months	6	6	-----

TYPICAL CURED PROPERTIES

<u>Test</u>	<u>Schedule 1</u>	<u>Schedule 2</u>
Hardness, Shore A	80	90
Tensile Strength, psi	1,817	2,033
Elongation, %	337	206

Schedule 1: cured 18 hours at 25°C plus 4 hours at 90°C

Schedule 2: post cured 20 hours at 90°C

STORAGE AND HANDLING

These materials should be stored in a dry environment within a moderate temperature range. Extended exposure to temperatures above 35°C begins to degrade the 49417. Avoid exposing either component to moisture.

Moisture reacts with the 49417 to create minor levels of by products. Low levels will not degrade the final polyurethane. Moisture contamination of the 59417 will cause some gas bubbles in the cast polyurethane. Purge the container with nitrogen or dry air before closing to maintain the storage life.

When using meter-mixed dispense equipment (MMD) machines, reservoir should be blanketed with nitrogen or dry air to avoid moisture and other contamination.

Avoid contamination with oxidized metals (such as copper, brass, or mild steel), and rust or other metal oxides. The stability of the product is greatly reduced by materials such as strong acids or bases, sulfur compounds, amines, or reducing agents of any type.



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SAFETY

These materials are intended for industrial use only and the practices of good housekeeping, safety and cleanliness should be followed before, during and after use.

Although the system contains low volatility materials, nevertheless, care should be taken in handling. Adequate ventilation of work place and ovens is essential.

These materials may cause dermatitis in susceptible individuals. Keep off skin and out of eyes. In case of accidental skin contact, wash thoroughly with soap and water. In case of eye contact, flush eyes thoroughly with water and consult a physician immediately.

Refer to Material Safety Data Sheets for additional information.

ADDITIONAL INFORMATION

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NOTE

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