



TECHNICAL INFORMATION

KALEX[®] 45190/56667 (formerly KALEX[®] 15190A/16667B) Urethane Adhesive System

PRODUCT DESCRIPTION

KALEX[®] 45190/56667 is a rigid, two-component, fast setting polyurethane structural adhesive system. It displays an excellent combination of shear strength and peel strength, with good impact resistance. It is highly recommended for bonding engineering thermoplastics, SMC, laminated surfaces and repair of reaction injection molded parts.

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>45190</u>	<u>56667</u>
By weight	100	100
By volume	100	75

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 is shown below:

24 hours at 25 °C (77 °F).

TYPICAL UNCURED PROPERTIES

	<u>45190</u>	<u>56667</u>	<u>Mixed</u>
Color	Straw	Black	Black
Viscosity @ 25 °C,cps	20,000	4,000	11,000
Weight per Gallon, lbs.	9.3	12.1	10.5
Specific Gravity @ 25 °C	1.11	1.45	1.26
Gel time, minutes			
4 gm mass @ 25 °C	---	---	15
Filler Type	None	Non-Abrasive	Non-Abrasive
Shelf Life (in separate sealed containers), months	6	6	---

TYPICAL CURED PROPERTIES

(Tested at 25 °C unless otherwise indicated)

<u>Test</u>	<u>Result</u>
Hardness, Shore D	80
Tensile Strength, psi	3,300
Elongation, %	80
Tear Strength, pli	800

Lap Shear Strength (Al/Al, 2024-T3 acid etched)

Cure Schedule @ 25 °C	7 days
Shear Strength, psi	3,600

Lap Shear Strength (Al/Al, 2024-T3 acid etched; cure schedule 24 hours @ 25 °C)

Test Temperature, °C	-40	25	82	149
Shear Strength, psi	4,100	4,075	485	275

T-Peel Strength (Al/Al, 2024-T3 acid etched; cure schedule 24 hours @ 25 °C)

Test Temperature, °C	-40	25	82
Peel Strength, pli	3.9	10	2.6

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 45190. Avoid exposing either component to moisture.

Moisture reacts with the 45190 to create minor levels of by products. Low levels will not degrade the final polyurethane. Moisture contamination of the 56667 will cause some gas bubbles in the mixed adhesive. Purge the container with 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



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stability of the product is greatly reduced by materials such as strong acids or bases, sulfur compounds, amines, or reducing agents of any type.

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, care should be taken in handling. Use adequate ventilation in the work area.

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 Sheet for additional information.

ADDITIONAL INFORMATION

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NOTE

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