

ROOM-TEMPERATURE-CURING ADHESIVES

AD-29 ADHESIVE

Features: Extremely high room-temperature strength and toughness, excellent durability and processability, and a broad range of applications.

AD-29 is a two-component, room-temperature-curing epoxy adhesive offering high mechanical performance, excellent adhesion, good processability, durability and environmental resistance. It is suitable for aluminum honeycomb-to-aluminum sheet and aluminum sheet-to-sheet bonding, and may also bond other metals, stone, wood, ceramics, foams and certain rigid plastics. Long-term service temperature: -55 to 70°C.

1. MECHANICAL PROPERTIES

Component A is a pale-yellow or milky-white paste; Component B is a milky-white paste. Mix A:B = 5:2 by weight. Typical mechanical properties are listed in Table 1.

Table 1. Typical mechanical properties of AD-29

Test item / method	Substrate	Surface treatment	Cure, min/°C Pressure 0.05 MPa	Typical
Lap shear at R.T., MPa	Al	Phosphoric acid anodizing	120/60	37.3
Lap shear at 70°C, MPa	Al	Phosphoric acid anodizing	120/60	19.6
Floating-roller peel, kN/m	Al	Phosphoric acid anodizing	120/60	9.1
Honeycomb climbing-drum peel, N-mm/mm Adhesive spread: 480 g/m ²	Al	Phosphoric acid anodizing	120/60	Upper 100 Lower 96.5
Honeycomb climbing-drum peel, N-mm/mm Adhesive spread: 480 g/m ²	Al	Chemical conversion coating	120/60	Upper 105 Lower 100

2. PROCESSING PROPERTIES

2.1 Surface preparation

Aluminum specimens may be treated by phosphoric acid anodizing or chemical conversion coating.

2.2 Mixing

Measure the required amounts at the specified ratio and mix uniformly (stir each component thoroughly before dispensing). If using a complete kit, scrape all of Component B into Component A and mix thoroughly. Pot life at 20°C is 1.5 h.

2.3 Application and cure

Spread the mixed adhesive evenly over the prepared bonding surfaces with a spatula. Assemble within the pot life, then cure under heat and pressure. Required cure times are shown below.

Cure temperature	25°C	60°C
Cure time	3 days	1-4 h

3. PACKAGING, STORAGE AND TRANSPORT

3.1 Components A and B are packaged separately in plastic bottles or pails.

3.2 Store tightly sealed in a cool, dry place. Prevent moisture uptake and prolonged open exposure. Shelf life at room temperature: 1 year.

3.3 AD-29 contains no volatile solvents and may be transported as a nonflammable, nonexplosive chemical product.