

**PACER**<sup>®</sup>  
**TECHNOLOGY**

INDUSTRIAL • PRIVATE LABEL



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**E Series Cyanoacrylate Adhesives**

Pacer Technology General Purpose Grade E Series Cyanoacrylates are part of the original family of instant adhesives formulated to quickly bond plastics, rubber, metal and ceramic. These adhesives offer excellent strength characteristics and are available in five viscosities, from water-thin to a honey-like consistency, suitable for dispensing from the bottle or through automatic equipment.

| <b>LIQUID STATE</b>                             | E-5  | E-40        | E-100       | E-1500      | E-2500      |
|---|--|-------------|-------------|-------------|-------------|
| Base Chemical                                   | Ethyl Cyanoacrylate                            |             |             |             |             |
| Color   | Clear Transparent liquid                       |             |             |             |             |
| Flashpoint                                      | 185F / 85C                                     |             |             |             |             |
| Viscosity, cP                                   | 2-10   | 30-70       | 80-120      | 1300-1700   | 2200-2700   |
| Typical Gap, inches                             | .002   | .004        | .005        | .010        | .020        |
| Vapor Pressure, mm Hg @70C                      | 10   | 10          | 10          | 10          | 10          |
| Specific Gravity, @25F/-4C                      | 1.05   | 1.06        | 1.08        | 1.10        | 1.11        |
| Refractive Index, n <sub>20C/D</sub> +/- .03    | 1.45   | 1.45        | 1.45        | 1.45        | 1.45        |
| Solubility Parameter                            | 10.8   | 10.7        | 10.7        | 10.7        | 10.7        |
| Soluble in:                                     | Pacer X-9 Debonder, Acetone, MEK, Nitromethane |             |             |             |             |
| <b>CURED STATE</b>                              | E-5  | E-40        | E-100       | E-1500      | E-2500      |
| Boiling Point                                   | 365F/185C                                      | 365F/185C   | 365F/185C   | 365F/185C   | 365F/185C   |
| Softening Point                                 | 311F/155C                                      | 306F/153C   | 306F/153C   | 301F/150C   | 301F/150C   |
| Heat Distortion                                 | 304F/151C                                      | 250F/121C   | 250F/121C   | 240F/116C   | 240F/116C   |
| Glass Transition                                | 347F/175C                                      | 342F/172C   | 342F/172C   | 340F/171C   | 340F/171C   |
| Volume Shrinkage, %                             | 15   | 13          | 13          | 12          | 12          |
| Rockwell Hardness, M                            | 75   | 74          | 74          | 72          | 72          |
| Cured Temperature Range                         | -65F to +180F (-54C to +82C)                   |             |             |             |             |
| Outgassing, 10 <sup>-6</sup> mmHg, 72F          | 0  |             |             |             |             |
| Elongation, %                                   | <2   |             |             |             |             |
| Dielectric Constant, 1 mhz                      | 3.98   | 3.90        | 3.89        | 3.79        | 3.77        |
| Volume Resistivity, ohm-cm (x10 <sup>12</sup> ) | 8.6  | 8.5         | 8.5         | 8.4         | 8.3         |
| Strength data:                                  |  |             |             |             |             |
| Impact, ft-lbs, ASTM-950                        | 3-5  | 7-10        | 3-5         | 4-6         | 4-6         |
| Tensile, steel, psi, ASTM-D2095                 | 4000 (±10%)                                    | 4700 (±10%) | 4000 (±10%) | 4000 (±10%) | 4000 (±10%) |
| Tensile Shear, psi, ASTM-D1002                  |  |             |             |             |             |
| Steel   | 2700 (±10%)                                    | 2700 (±10%) | 2400 (±10%) | 2200 (±10%) | 2000 (±10%) |
| Aluminum  | 1600 (±10%)                                    | 1600 (±10%) | 1600 (±10%) | 1600 (±10%) | 1600 (±10%) |
| ABS   | SF*  | SF*         | SF*         | SF*         | SF*         |
| Nylon   | SF*  | SF*         | SF*         | SF*         | SF*         |
| Rigid PVC                                       | SF*  | SF*         | SF*         | SF*         | SF*         |
| SBR   | SF*  | SF*         | SF*         | SF*         | SF*         |
| EPDM  | 100 (±10%)                                     | 100 (±10%)  | 100 (±10%)  | 100 (±10%)  | 100 (±10%)  |
| Soluble in:                                     | Pacer X-9 Debonder, Acetone, Nitromethane      |             |             |             |             |

\*substrate failure (adhesive bond stronger than substrate)



**APPLICATION AND CURE CHARACTERISTICS:**

For best results, parts should be clean, free from oil and grease or other contaminants. Apply adhesive to one surface to be bonded and mate the other surface to it carefully and without delay. For best results, use a minimal amount of adhesive. In general, one free-falling drop covers one square inch of bond area. Avoid over-application, as excess adhesive is difficult to remove from unwanted areas. Fixture time occurs in 1-5 minutes with 80% of full strength developing in 15-30 minutes. Fixture time and full cure rates are dependent upon temperature, relative humidity, bondline thickness, and substrates being bonded. To speed full cure through larger gaps, Pacer accelerators for instant adhesives are compatible and can be used. Post application of accelerators to exposed adhesive may cause a white frosting (chlorosis) of the exposed adhesive onto parts, which can usually be removed using Pacer X-9 Debonder and a cotton swab. Overall cure strength can be decreased as a result of using accelerators. Testing on actual parts is recommended.

| <b>Specification Compliance</b> | <b>E-5</b> | <b>E-40</b> | <b>E-100</b> | <b>E-1500</b> | <b>E-2500</b> |
|---------------------------------|------------|-------------|--------------|---------------|---------------|
| MIL-A-46050C (Type/Class)       | II/1       | II/1        | II/2         | II/3          | II/3          |
| A-A-3097 (Commercial Spec)      | II/1       | II/1        | II/2         | II/3          | II/3          |

**STORAGE AND SHELF LIFE:**

Refrigerate unopened cyanoacrylate @ 40F (4C) for optimum results. Allow adhesive to reach room temperature before opening. Once opened, store in a cool, dry location. Stored under these conditions, a one year shelf life can be expected.

**SAFETY AND HANDLING PRECAUTIONS:**

Cyanoacrylate adhesives bond skin in seconds. In case of skin contact, flush with water. If skin becomes bonded, peel (not pull) apart after immersion in warm, soapy water. In case of eye or mouth contact, flush with water and get immediate medical attention. Use with adequate ventilation. Vapors can irritate eyes and mucous membranes. Symptoms disappear after removal of individual from vapors. For more information, refer to Material Safety Data Sheet, available upon request.

| <b>Size</b> | <b>E-5</b> | <b>E-40</b> | <b>E-100</b> | <b>E-1500</b> | <b>E-2500</b> |
|-------------|------------|-------------|--------------|---------------|---------------|
| 5 g         | FG01015    | FG01025     | FG01035      |               |               |
| 20 g        | FG01010    | FG01020     | FG01030      | FG01050       | FG01060       |
| 1 lb        | FG01013    | FG01023     | FG01033      | FG01053       | FG01063       |
| 20 kg       | FG01016    |             |              |               | FG01064       |

In case of emergency, call Pacer Technology at 800-538-3091 (outside CA only), or 909-987-0550.

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