



**BOARDS & PASTES**

**QUICK SETTING PU**

**PU ELASTOMERS**

**RAPID PROTOTYPING**

**EPOXY SYSTEMS**

PARIS FRANKFURT LONDON MILANO BARCELONA BRATISLAVA SHANGHAI NAGOYA DUBAI PUNE DETROIT MEXICO CITY

**DESIGN**

**MODELING**

**TOOLING**

# MACHINABLE PRODUCTS

## MACHINABLE BOARDS

| Product  | Description   | Color      | Application   | Density<br>lb/ft <sup>3</sup> (g/cc) | Hardness<br>(Shore D)                | CTE<br>x10 <sup>-6</sup> /<br>(in <sup>-1</sup> F) | Tg<br>(°F) | Dimensions<br>(inches)          |                    |                                      |                             |
|--|---|------------|---|--------------------------------------|--------------------------------------|--|------------|---------------------------------|--------------------|--------------------------------------|-----------------------------|
| <i>Medium density boards for models and patterns</i> |   |            |   |                                      |                                      |  |            |                                 |                    |                                      |                             |
| Prolab 65  | Polyurethane, CNC machinable, good surface finish, high dimensional stability |            | Models, patterns, vacuum forming, accepts paint, hand finishing     | 42 (0.65)                            | 63                                   | 42   | 185        | 20" x 60" x 2", 3" and 4" thick |                    |                                      |                             |
| Lab 1151   | Polyurethane, high dimensional stability, easily CNC machined                 |            | Light weight board ideal for creation of checking fixtures          | 51 (0.82)                            | 76                                   | 27   | 158        |                                 |                    |                                      |                             |
| Lab 1188   | Polyurethane, high dimensional stability, easily CNC machined                 |            | Ideal for room temperature laminates and machining fixtures         | 54 (0.86)                            | 80                                   | 18   | 212        |                                 |                    |                                      |                             |
| <i>High density boards for tooling</i>               |   |            |   |                                      |                                      |  |            |                                 |                    |                                      |                             |
| Lab 850  | Abrasion resistant board, thermoplastic-like finish                           |            | Foundry patterns, stretch forming tools, vacuum forming, core boxes | 74 (1.18)                            | 80                                   | 60   | 176        | 20" & 24" x 60" 2", 3" and 4"   |                    |                                      |                             |
| Lab 1000   | High compressive strength, high dimensional stability                         |            | Stamping, pressing tools, hammer forming and injection molds        | 104 (1.67)                           | 89                                   | 28   | 198        | 24" x 36" 2", 3", 4" and 6"     |                    |                                      |                             |
| <i>Adhesive recommendations for boards</i>           |   |            |   |                                      |                                      |  |            |                                 |                    |                                      |                             |
| Product  | Preferred Adhesive <sup>1</sup>   | Tg °F (°C) | Viscosity   | Pot life (minutes)                   | Time to Machine (Hours) <sup>2</sup> | Alternative Adhesive <sup>3</sup>                  | Tg °F (°C) | Viscosity                       | Pot life (minutes) | Time to Machine (Hours) <sup>2</sup> | Other Products <sup>4</sup> |
| Prolab 65  | AL 2108   | 154 (68)   | Medium-Thin   | 25                                   | 8 - 10                               | Ax-Bond Epoxy 1                                    | 113 (45)   | Medium                          | 7                  | 3 - 4                                | F16, F19                    |
| Lab 1151   | AL 2108   | 154 (68)   | Medium-Thin   | 25                                   | 8 - 10                               | Ax-Bond Epoxy 1                                    | 113 (45)   | Medium                          | 7                  | 3 - 4                                | AS 2020                     |
| Lab 1188   | AL 2108   | 154 (68)   | Medium-Thin   | 25                                   | 8 - 10                               | H9951  | 140 (60)   | Medium                          | 50                 | 8 - 10                               | Ax-Bond Epoxy 1             |
| Lab 850  | Ax-Bond Epoxy 1   | 113 (45)   | Medium  | 7                                    | 3 - 4                                | H9951  | 140 (60)   | Medium                          | 50                 | 8 - 10                               | AL 2108                     |
| Lab 1000   | AS 2020   | 302 (150)  | Paste   | 60                                   | 16 - 24                              | H9951  | 140 (60)   | Medium                          | 50                 | 8 - 10                               | AL 2108                     |

<sup>1</sup>Best all around adhesive for the board in terms of matching board properties.

<sup>2</sup>Times based on 77°F (25°C) ambient temperature conditions, cool temperatures (<75°F (24°C)) give longer times.

<sup>3</sup>Popular alternate adhesives, suitable for many applications.

<sup>4</sup>Adhesives that may offer advantages in some applications.

## EXTRUDABLE PASTES

| Product                                      | Description   | Color | Application   | Density<br>(g/cc) | Hardness<br>(Shore D) | CTE<br>x10 <sup>-6</sup> /<br>(in <sup>-1</sup> F) | Tg<br>(°F)         | Mix ratio<br>by<br>Volume | Time before<br>machining |
|--|---|-------|---|-------------------|-----------------------|--|--------------------|---------------------------|--------------------------|
| <i>Epoxy low density pastes for modeling</i> |   |       |   |                   |                       |  |                    |                           |                          |
| SC175  | Can be applied to any core or substrate, easy to machine, very good surface finish. |       | Styling exercises, patterns, composite parts and molds, infusion molds, | 0.63              | 53                    | 39   | 181                | 100:100                   | 1 day                    |
| SC390  | Low cte, high Tg paste for tooling, high dimensional stability                      |       | Low temperature prepreg (150°F) in autoclave                            | 1.06              | 75 <sup>(1)</sup>     | 29 <sup>(1)</sup>                                  | 190 <sup>(1)</sup> | 100:100                   | 1 day                    |
| <i>Epoxy high density paste for tooling</i>  |   |       |   |                   |                       |  |                    |                           |                          |
| SC300  | Strong, high dimensional stability good heat resistance                             |       | Stamping tools, prepreps, vacuum forming, RIM and cold drawing          | 1.58              | 87                    | 24   | 190                | 100:60                    | 1 day                    |
| <i>Repair pastes</i>                         |   |       |   |                   |                       |  |                    |                           |                          |
| <b>New!</b> M175/M10                         | Repair for SC175 extrudable paste   |       | Repair of voids and damage to tools and models made with SC175 paste.   | 0.62              | 57                    | -  | 136                | 100:100                   | 4 hours                  |
| <b>New!</b> M390/M10                         | Repair for SC390 extrudable paste   |       | Repair of voids and damage to tools and models made with SC390 paste.   | 0.91              | 69                    | -  | 181 <sup>(1)</sup> | 100:58                    | 4 hours                  |

<sup>(1)</sup>Elevated temperature post cure recommended, see TDS for details

# SURFACE COATS & POLYESTERS

## EPOXY SURFACE COATS

| Product                          | Description   | Color | Applications   | Pot Life (min) | Hardness Shore | Density (g/cc) | Mix Ratio by weight Resin:Hard | Demold Time | Viscosity (mPa.s.) | T <sub>g</sub> <sup>(1)</sup> (°F) |
|----------------------------------|---|-------|--|----------------|----------------|----------------|--------------------------------|-------------|--------------------|------------------------------------|
| <i>Can be polished or sanded</i> |   |       |  |                |                |                |                                |             |                    |                                    |
| AS 2003-1                        | Excellent edge coverage, no sag on vertical surfaces, easy to apply                             |       | Master models, trim fixtures, Keller models, patterns and core boxes     | 25             | 83D            | 1.19           | 100:16                         | 12 h        | 40,000             | 164                                |
| AS 2005                          | For plastic faced plaster tooling, color cure indicator, thixotropic with good vertical hang up |       | PPF tooling, master models, duplication splashes, ceramics               | 25             | 88D            | 1.75           | 100:10                         | 10 h        | 300,000            | 185                                |
| S11 Blue                         | Bonds to wet plaster or concrete, heat resistant, high gloss finish                             |       | Plastic-faced plaster, thermoplastic sheet forming molds, spotting racks | 15             | 88D            | 1.22           | 100:16                         | 8 h         | Thixotropic        | 200                                |
| S20                              | Chemical resistant, applies easily, excellent finish, high Shore hardness                       |       | Surface coating of molds requiring chemical and heat resistance          | 35             | 90D            | 1.46           | 100:16                         | 16 h        | Thixotropic        | 275                                |
| AS 2020                          | Excellent temperature resistance, no sag on vertical surfaces                                   |       | Fillets and reinforcements, laminating in production of molds            | 60             | 92D            | 1.52           | 100:11                         | 12 h        | Thixotropic        | 310                                |

<sup>(1)</sup>After elevated temperature post cure, see TDS for details.

## POLYESTER FILLERS AND GEL COATS

| Product                                   | Description  | Color | Application   | Density g/cc (lb./gal.) | Hardness (Shore D) | Service Temp (°F) | Cure Time (min.) | Mix ratio by weight Resin:Cat. | Pot life (min.) |  |
|---|--|-------|---|-------------------------|--------------------|-------------------|------------------|--------------------------------|-----------------|--|
| <i>High performance polyester fillers</i> |  |       |   |                         |                    |                   |                  |                                |                 |  |
| APF 77/1                                  | Flame-retardant, self-extinguishing meets FAR 25.853                                       |       | Repair honeycomb panels/substrates, finish surface of composite panels      | 1.00 (8.34)             | 73                 | 185               | 20               | 100:2                          | 11              |  |
| APF 4                                     | Low shrinkage, excellent bond properties for metals, plastics and wood                     |       | Versatile repair paste, fill voids, bond inserts, fiberglass repair         | 1.81 (15.10)            | 89                 | 285               | 20               | 100:2                          | 6               |  |
| APF 6 Orange                              | No styrene, chemical resistant, can withstand 400°F  |       | Repair nicks, FRP molds, high temperature repairs, holes, cracks            | 1.35 (11.30)            | 88                 | 400               | 30               | 100:2                          | 10              |  |
| APF 7                                     | Styrene free, service temperature up to 400°F, chemical and water resistant                |       | Repair wind blades, FRP molds exposed to high heat, underwater applications | 1.70 (14.20)            | 88                 | 400               | 15               | 100:2                          | 5               |  |
| <i>Sprayable polyester gel coats</i>      |  |       |   |                         |                    |                   |                  |                                |                 |  |
| APF 1700 S                                | Sprayable, rapid layer build up when applied in thin coats, impact resistant, styrene free |       | Master mold surfacing, preparation or surface repair of molds               | 1.33 (11.1)             | 88D                | 400               | 60               | 100:1                          | 27              |  |
| APG 1750 S                                | Sprayable high temperature gel coat, high gloss finish, styrene free                       |       | Creation of high gloss mold surfaces, high heat and impact resistance       | 1.28 (10.7)             | 88D                | 400               | 90               | 100:2                          | 18              |  |

## MOLD RELEASES

| Product                           | Description   | Applications   |
|-----------------------------------|---|--|
| Mold Release 100 (Paste Wax)      | Hydrocarbon naphtha and wax blend in a convenient paste form, silicone free   | Mold break-in, base wax, or primary release agent for polyurethanes, polyesters or epoxies, at temperatures up to 175°F  |
| Mold Release 101 (Liquid Wax)     | Specialized blend of parting agents in easy to apply liquid form, silicone free   | General purpose mold release, suitable for sealed wood, composite or metal surfaces, with temperatures to 175°F  |
| Mold Release 102 (Aerosol Can)    | Semi-permanent, dry-film fluorocarbon release agent with no waxes or silicone. Does not transfer to parts.                        | Suitable for epoxies, polyurethanes, and polyesters. Temperature range to 250°F. Can be used as a dry lubricant as well.   |
| Mold Release 103 (Aerosol Can)    | Blend of silicones and other parting agents for excellent release of urethanes  | Suitable for epoxies, polyurethanes, and polyesters. Temperature range to 400°F.   |
| Mold Release 870 NA (Aerosol Can) | Wax based mold release in a hydrocarbon carrier, particularly well suited for RIM process using polyurethanes. Contains silicone. | This mold release is useful for polyurethanes and suitable for sealed wood, composite or metal surfaces, with temperatures to 212°F. Not recommended for laminating systems. |

# CASTING RESINS

## EPOXY CASTING RESINS

| Product                            | Description  | Color | Applications   | Pot Life                  | Hardness Shore    | Density (g/cc) | Mix Ratio by weight Resin:Hard | Demold Time (Hours) | Viscosity (mPa.s.)         | Tg <sup>(1)</sup> (°F) |
|------------------------------------|--|-------|--|---------------------------|-------------------|----------------|--------------------------------|---------------------|----------------------------|------------------------|
| AC 2310 Fast<br>AC 2310            | Excellent abrasion resistance, Low viscosity               |       | Surface casting on all types of metal dies for wear resistance | 35m<br>4h                 | 93D               | 2.00           | 100:10                         | 16h<br>24h          | 10,000                     | 160                    |
| AC2320-1<br>Slow<br>Medium<br>Fast | High temperature resistance, low settling, aluminum filled |       | Dimensionally stable, high temperature tools                   | 3h 15m<br>2h 15m<br>1h 5m | 95D<br>84D<br>84D | 1.68           | 100:8<br>100:5<br>100:7        | 72h<br>36h<br>24h   | 22,000<br>27,000<br>25,000 | 264<br>306<br>253      |

<sup>(1)</sup>After elevated temperature post cure, see TDS for details.

## FAST CAST POLYURETHANE RESINS

| Product                           | Description  | Color | Applications  | Pot Life (min) | Hardness Shore | Density (g/cc) | Mix Ratio by weight Iso:Polyol | Demold Time (min) | Viscosity (cps) | Tg (°F) |
|-----------------------------------|--|-------|---|----------------|----------------|----------------|--------------------------------|-------------------|-----------------|---------|
| <i>Filled</i>                     |  |       |   |                |                |                |                                |                   |                 |         |
| F100 Grey<br>F100 Med<br>F100 LPL | Low shrinkage even when very thick, fine grain                     |       | Up to 70mm thick, foundry patterns, negatives, vacuum forming tools               | 5<br>9<br>14   | 82D            | 1.68           | 100:100                        | 30m<br>45m<br>1h  | 2,200           | 225     |
| <i>Unfilled</i>                   |  |       |   |                |                |                |                                |                   |                 |         |
| F132                              | Fast setting, unfilled polyurethane, not brittle at demold         |       | Prototype parts, miniatures   | 2m 15s         | 72D            | 1.05           | 100:100                        | 20m               | 85              | 219     |
| F16                               | Low viscosity, heat resistant                                      |       | Small to medium scale series, stamping tools, dimensional checking fixtures       | 2m 20s         | 72D            | 1.05           | 100:100                        | 30m               | 100             | 212     |
| F18                               | Low viscosity, can use additional fillers for thermal conductivity |       | Negatives, molds, masters   | 3m 30s         | 70D            | 1.08           | 100:100                        | 45m               | 60              | 176     |
| F23                               | Filled sandable, polishable fast cast system                       |       | Decorative items such as statuettes, figurines, bas-reliefs, prototypes, fixtures | 5              | 80D            | 1.57           | 20:100                         | 30m               | 1,700           | 194     |
| F19                               | Low shrinkage, long potlife, heat resistant                        |       | Core boxes, foundry models, model plates, ceramics                                | 7              | 72D            | 1.07           | 100:100                        | 1h 30m            | 78              | 212     |
| F50                               | Works well in thicknesses up to 15 inches with fillers added       |       | Foundry patterns, negatives, vacuum forming tools                                 | 40             | 83D            | 1.30           | 50:100                         | 12h               | 350             | 150     |

## POLYURETHANE RESINS

| Product            | Description   | Color       | Applications   | Pot Life (min) | Hardness Shore | Density (g/cc) | Elongation (%) | Mix Ratio by weight | Demold Time (hours) | Viscosity (mPa.s.) |
|--------------------|---|-------------|--|----------------|----------------|----------------|----------------|---------------------|---------------------|--------------------|
| UR5801/<br>UR5825  | Soft, low viscosity, water resistant, can be colored, self-degassing        |             | Candle molds, concrete and plaster molds, stucco molds           | 25             | 30A            | 1.16           | 800            | 8:100               | 24h                 | 1,000              |
| UR5801/<br>UR5835  | Soft, low viscosity, water resistant, can be colored, self-degassing        |             | Candle molds, concrete and plaster molds, stucco molds           | 18             | 35A            | 1.19           | 1,000          | 10:100              | 16h                 | 1,000              |
| UR5801/<br>UR5850  | Soft, low viscosity, water resistant, can be colored, self-degassing        |             | Concrete molds for texturing and forms                           | 13             | 50A            | 1.19           | 1,100          | 14:100              | 12h                 | 1,100              |
| <b>New!</b> UR3435 | Low viscosity, self-degassing, high resilience, high tear strength          |             | Casting seals, anti-vibration mounting blocks, and ceramic molds | 22             | 65A            | 1.15           | 1,000          | 100:100             | 24h                 | 1,800              |
| UR3558             | Impact resistant and resistant to peeling, fast molding, abrasion resistant | translucent | Foundry patterns, core boxes                                     | 25             | 95A            | 1.04           | 460            | 100:42              | 10h                 | 3,000              |
| UR3560             | Excellent impact and abrasion resistance, available in 3 colors.            |             | Foundry patterns, core boxes                                     | 15             | 60D            | 1.04           | 220            | 100:40              | 8h                  | 2,500              |
| UR3490             | Reduced toxicity, high impact, rapid cure                                   |             | Foundry patterns, engineering parts                              | 14             | 67D            | 1.12           | 120            | 100:50              | 16-24h              | 1,500              |

# LAMINATING RESINS

## EPOXY LAMINATING RESINS

| Product  | Description  | Color       | Applications   | Pot Life (min)          | Hardness Shore    | Density (g/cc)       | Mix Ratio by weight Resin: Hardener | Demold Time (Hours) | Viscosity (cps)   | Tg <sup>(1)</sup> (°F) |
|--|--|-------------|--|-------------------------|-------------------|----------------------|-------------------------------------|---------------------|-------------------|------------------------|
| <b>Filled Resins for Hand Layup and Vacuum bagging</b>   |  |             |  |                         |                   |                      |                                     |                     |                   |                        |
| AL2103/2103<br>AL2103/2103LPL                            | Low/No vertical sag, room temperature cure, low toxicity, dimensionally stable   | White       | Use with glass or organic fabrics, laminating and bonding, LPL=longer pot life     | 25m<br>75m              | 85D<br>95D        | 1.33<br>1.26         | 100:16                              | 12h<br>24h          | 3,000<br>2,000    | 132<br>146             |
| Epolam 2500/2500<br>Epolam 2500/2501                     | Self-extinguishing, FAR25.853 qualified, fast and slow hardeners available   | Off white   | Fire resistant composites for aircraft interiors                                   | 1h 20<br>25m            | 88D<br>89D        | 1.20                 | 100:22<br>100:18                    | 16h<br>4h           | 3,500<br>1,800    | 212<br>199             |
| AL2120   | Aluminum filled, high temperature laminating system for tooling  | Gray        | Vacuum form tools, autoclave tools, high temperature bonding fixtures              | 60m                     | 82D               | 1.27                 | 100:16                              | 24h                 | 5,500             | 248                    |
| <b>Unfilled Resins for Hand Layup and Vacuum bagging</b> |  |             |  |                         |                   |                      |                                     |                     |                   |                        |
| AL2108   | Thin film cure, clear, fast wetting  | Clear       | Master models, duplication splashes, patterns, core boxes                          | 25m                     | 85D               | 1.10                 | 100:25                              | 10h                 | 1,000             | 154                    |
| Epolam 2020  | Curing time controlled by adding accelerators, low viscosity, good wetting   | Clear       | Very best composite parts, wet lay-up, resin transfer molds                        | 2h 15m                  | 85D               | 1.10                 | 100:34                              | 48h                 | 500               | 176                    |
| RSF 816  | Transparent, fast setting, low viscosity laminating system with UV resistance  | Clear       | Designed for any transparent top-coating laminate by wet lay-up methods            | 25m                     | 82D               | 1.15                 | 100:40                              | 16h                 | 500               | 176                    |
| AL2017/2019  | Laminating system for vacuum bagging with heated cure, long open time, quick demold  | Clear       | Composite automotive bodies by vacuum bagging, resin transfer molding              | 3h 35m                  | 84D               | 1.14                 | 100:32                              | 24h                 | 1,080             | 178                    |
| Epolam 2015/2014<br>Epolam 2015/2015<br>Epolam 2015/2016 | Designed for production of composite structures by wet layup methods. Lloyd's Certified  | Clear       | Wood impregnation, vacuum bagging, filament winding, resin transfer molding        | 60m<br>140m<br>400m     | 83D<br>82D<br>84D | 1.12<br>1.08<br>1.14 | 100:32                              | 24h<br>30h<br>48h   | 650<br>550<br>450 | 196<br>190<br>178      |
| Epolam 2022  | Heat resistant unfilled laminating system  | Clear       | Vacuum bagging, filament winding, resin transfer molding, resin infusion           | 60m                     | 85D               | 1.10                 | 100:40                              | 24h                 | 500               | 212                    |
| Epolam 2025/2025<br>Epolam 2025/2025L                    | Heat resistant unfilled laminating system well suited for thick sections   | Translucent | Vacuum bagging, filament winding, resin transfer molding, composite tooling        | 70m<br>110m             | 87D<br>87D        | 1.12<br>1.16         | 100:28<br>100:33                    | 24h<br>24h          | 1,300<br>1,800    | 275<br>275             |
| <b>New!</b> AL2201                                       | High temperature system for hand layup and infusion.   | Clear       | Vacuum bagging, resin transfer molding, resin infusion                             | 5h 30m                  | 87D               | 1.10                 | 100:35                              | 48h                 | 650               | 320                    |
| <b>Infusion Resins</b>                                   |  |             |  |                         |                   |                      |                                     |                     |                   |                        |
| Epolam 5015/5014<br>Epolam 5015/5015<br>Epolam 5015/5016 | Infusion systems, very low viscosity, excellent wetting properties   | Clear       | Production of large parts, boat hulls, wind turbine blades                         | 45m<br>2h 15m<br>3h 45m | 82D<br>84D<br>83D | 1.12<br>1.10<br>1.12 | 100:34                              | 18h<br>24h<br>48h   | 225<br>210<br>225 | 176<br>180<br>179      |
| Epolam 2035/2025<br>Epolam 2035/2025L                    | Intermediate elevated temperature infusion system with 2 different set times   | Clear       | Production of composite tooling by infusion for temperatures to 265°F              | 105m<br>165m            | 83D<br>83D        | 1.12<br>1.12         | 100:27<br>100:31                    | 24h<br>48h          | 400<br>500        | 266<br>266             |
| <b>New!</b> Epolam 2070                                  | High temperature infusion or wet-lay up system   | Clear       | Parts requiring temperature resistance, high temperature tooling                   | 180m                    | 88D               | 1.13                 | 100:31                              | 12h <sup>(2)</sup>  | 500               | 320                    |
| Epolam 2090/2026   | Low viscosity system designed for the production of high temperature tooling by infusion   | Translucent | Production of very large tools for high heat applications - 360°F at 90 psi        | 25h                     | 90D               | 1.14                 | 100:53                              | 12h <sup>(2)</sup>  | 650               | 400                    |
| <b>Laminating Pastes</b>                                 |  |             |  |                         |                   |                      |                                     |                     |                   |                        |
| Epopast 400  | Low shrinkage, low odor, easy to mix and apply   |             | Large negatives, inspection jigs, ceramics tooling, foundry core box covers        | 2h                      | 80D               | 0.91                 | 100:14                              | 24h                 | Paste             | 158                    |
| Epopast 402/400  | Low shrinkage, low odor, easy to mix and apply   |             | Large negatives, inspection jigs, ceramics tooling, less abrasive than Epopast 400 | 2h                      | 81D               | 0.76                 | 100:14                              | 24h                 | Paste             | 158                    |
| Epopast 206  | Heat resistant, dimensionally stable, low density  |             | Large negatives, tooling for composites and vacuum castings                        | 1h 25m                  | 70D               | 0.91                 | 100:12                              | 20-24h              | Paste             | 258                    |
| <b>Coupling Layer Kits for Laminating Pastes</b>         |  |             |  |                         |                   |                      |                                     |                     |                   |                        |
| Epopast 400 Coupling Layer Kit                           | A combination of a room temperature laminating system with chopped glass strand and thixotropic filler in one package developed as an intermediate layer between the surface coat and Epopast 400 or Epopast 402. Reduces defects in tool construction. Complete instructions for use are included in the kit. |             |  |                         |                   |                      |                                     |                     |                   |                        |
| Epopast 206 Coupling Layer Kit                           | A combination of a heat-resistant laminating system with chopped glass strand and thixotropic filler in one package developed as an intermediate layer between the surface coat and Epopast 206. Reduces defects in tool construction. Complete instructions for use are included in the kit.                  |             |  |                         |                   |                      |                                     |                     |                   |                        |

<sup>(1)</sup>After elevated temperature post cure, see TDS for details.

<sup>(2)</sup>Preure needed prior to demolding, see TDS for details

# RAPID PROTOTYPING

## VACUUM CASTING RESINS

| Product                     | Description   | Color | Characteristics   | Pot Life (min) | Hardness Shore | Density (g/cc) | Flexural Modulus (PSI) | Elongation at break (%) | Mix Ratio by weight | Demold Time at 70°C | Tg <sup>(1)</sup> (°F) |
|-----------------------------|---|-------|---|----------------|----------------|----------------|------------------------|-------------------------|---------------------|---------------------|------------------------|
| <i>Rigid Casting Resins</i> |   |       |   |                |                |                |                        |                         |                     |                     |                        |
| PX245<br>PX245L             | Filled, very short demold time, very rigid                                |       | Similar to P.O.M. and filled thermoplastics                                   | 4<br>8         | 85D            | 1.22           | 652,500                | 3                       | 100:40              | 30m<br>60m          | 203                    |
| PX330 <sup>(2)</sup>        | Fire retardant, meets FAR 25.853  |       | Technical parts for aeronautics, all parts where fire certification is needed | 5              | 87D            | 1.33           | 478,500                | 2.9                     | 100:100             | 45m                 | 220                    |
| <b>New!</b> PX5214HT        | Improved formulation, optically clear casting, polishable, low viscosity  | Clear | Acrylic, glass, crystal, or polycarbonate                                     | 21             | 84D            | 1.07           | 382,000                | 10                      | 100:60              | 2h                  | 216                    |
| PX226<br>PX226L             | Very short demold time, low viscosity                                     |       | Similar to filled ABS or PA 6.6   | 4<br>7.5       | 82D            | 1.20           | 362,500                | 15                      | 100:50              | 25m<br>60m          | 221                    |
| PX223HT                     | Low viscosity, impact resistant high heat resistant                       |       | Prototype parts that require ABS similar properties and use                   | 7              | 80D            | 1.14           | 333,500                | 11                      | 100:80              | 45m                 | >248                   |
| PX521HT<br>PX522HT          | Optically clear casting, low viscosity, high heat resistance, polishable, | Clear | Polycarbonate, glass or crystal, PMMA   | 20<br>7        | 87D            | 1.06           | 304,500                | 10                      | 100:55              | 2h<br>45m           | 230                    |
| <i>Semi-Rigid</i>           |   |       |   |                |                |                |                        |                         |                     |                     |                        |
| PX100                       | Low viscosity, can be mixed by hand                                       |       | Polystyrene, polypropylene, prototype parts like H.I.P.S.                     | 15             | 74D            | 1.16           | 217,500                | 20                      | 100:100             | 4h                  | 167                    |
| PX212                       | Low viscosity, fast demold time, impact resistant                         | Clear | Polypropylene, ideal for rotomolding applications as well                     | 5              | 76D            | 1.15           | 174,000                | 25                      | 100:100             | 1h 10m              | 194                    |
| PX205                       | Unbreakable, living hinge effect  |       | Polypropylene   | 14             | 70D            | 1.08           | 72,500                 | 100                     | 100:50              | 1h                  | 203                    |
| <i>Flexible</i>             |   |       |   |                |                |                |                        |                         |                     |                     |                        |
| PX761                       | High heat resistance, long pot life                                       |       | Rubber like prototype parts   | 10             | 63A            | 1.03           | -                      | 1,000                   | 100:45              | 1h 30m              | -                      |

<sup>(1)</sup> After elevated temperature post cure, see TDS for details, <sup>(2)</sup> Meets regulation FAR 25.853 for flammability 12 seconds on 2.2 mm

## RIM POLYURETHANE RESINS

| Product  | Description  | Color | Characteristics  | Pot Life (sec.) | Hardness Shore | Density (g/cc) | Flexural Modulus (PSI) | Mix Ratio by weight Iso:Polyol | Demold Time | Tg <sup>(1)</sup> (°F) |
|--|--|-------|--|-----------------|----------------|----------------|------------------------|--------------------------------|-------------|------------------------|
| <i>Multi-use RIM</i>                               |  |       |  |                 |                |                |                        |                                |             |                        |
| RIM 826/902  | Very high impact resistance, easy to use                                     |       | High impact resistant, prototypes                                  | 80-100          | 73D            | 1.12           | 116,000                | 100:100                        | 25m         | 203                    |
| RIM 610  | Fire retardant, UL 94-V0, ABS-like   |       | Suitable for electrical housings                                   | 50-70           | 80D            | 1.29           | 305,000                | 100:100                        | 20m         | 221                    |
| RIM 880  | Neutral color, polycarbonate properties                                      |       | Easily tinted, sag-free post cure, fast demold                     | 60-80           | 84D            | 1.14           | 329,000                | 100:100                        | 7m          | 201                    |
| <i>Blendable Polyols for Adjustable Properties</i> |  |       |  |                 |                |                |                        |                                |             |                        |
| RIM 875 <sup>(1)</sup>                             | High impact resistance, Polyol can be mixed to obtain intermediate stiffness |       | Prototype parts, polypropylene, polyethylene appearance            | 60-80           | 75D            | 1.12           | 145,000                | 80:100                         | 15m         | 212                    |
| RIM 975 <sup>(1)</sup>                             | High impact resistance, Polyol can be mixed to obtain intermediate stiffness |       | Prototype parts, small runs, polypropylene/polyethylene appearance | 38-42           | 75D            | 1.18           | 145,000                | 75:100                         | 10m         | 302                    |
| RIM 876 <sup>(2)</sup>                             | High impact resistance, Polyol can be mixed to obtain intermediate stiffness |       | Prototype parts, ABS/polystyrene appearance                        | 60-70           | 80D            | 1.12           | 290,000                | 100:100                        | 15m         | 212                    |
| RIM 976 <sup>(2)</sup>                             | High impact resistance, Polyol can be mixed to obtain intermediate stiffness |       | Prototype parts, ABS/polystyrene appearance                        | 35-40           | 80D            | 1.18           | 290,000                | 100:100                        | 10m         | 302                    |

<sup>(1)</sup> Used with RIM 875/975 Iso <sup>(2)</sup> Used with RIM 876/976 Iso

<sup>(1)</sup> After elevated temperature post cure, see TDS for details.

# SILICONES AND ADHESIVES

## MOLD MAKING SILICONES

| Product  | Description  | Color       | Characteristics  | Pot Life (min)   | Hardness Shore    | Density (g/cc) | Elongation at break (%) | Tear Strength (ppi)   | Mix Ratio by weight Resin:Cat | Demold Time | Viscosity Mixed (cps) |
|--|--|-------------|--|--|-------------------|----------------|-------------------------|---|-------------------------------|-------------|-----------------------|
| Essil 125NA  | Standard, poly-condensation, tin catalyzed   |             | Self release soft mold for rapid prototyping   | 240  | 25A               | 1.11           | 350                     | 130   | 100:10                        | 24h         | 40,000                |
| <b>New!</b><br>Axsil 4240 Resin<br>Axsil 4225 Cat<br>Axsil 4240 Cat<br><b>New!</b><br>Axsil 4245 Cat | Tear resistant, dimensionally stable, resists polyurethane, low viscosity, platinum catalyzed, Axsil 4240 Cat available in regular and self-bleed versions | Translucent | Reproduces detail with accuracy, well suited for reproductions with optical qualities such as lenses | 180<br>120<br>120  | 23A<br>38A<br>45A | 1.08           | 300<br>340<br>205       | 85<br>120<br>130  | 100:10                        | 16h         | 40,000                |
| Essil 245/245  | Standard, poly-addition, platinum catalyzed  |             | Self release soft mold for rapid prototyping   | 100  | 45A               | 1.33           | 400                     | 150   | 100:10                        | 24h         | 40,000                |
| Essil 245/255  | Standard, poly-addition, platinum catalyzed  |             |  | 100  | 55A               | 1.33           | 400                     | 150   | 100:10                        | 24h         | 40,000                |
| Ax-sil Oil 50  | Low viscosity silicone oil to reduce viscosity and extend both poly-addition and poly-condensation cure silicones. Can be added at up to 10%               | Transparent | Low viscosity silicone oil diluent for silicone resin systems  | <b>Property</b><br>Viscosity<br>Work Time/ Pot Life<br>Hardness, Shore A<br>Tensile Strength<br>Tear Strength<br>Release |                   |                |                         | <b>Effect</b><br>Decrease<br>Increase<br>Decrease<br>Decrease<br>Decrease<br>Increase |                               |             |                       |

## ADHESIVES

| Product   | Description  | Color | Bonding Applications   | Open Time (min) | Initial Hard (min) | 50% Full Adhesion | Lap Shear (psi) | Peel Strength (pli) | Elongation (%) |
|---|--|-------|--|-----------------|--------------------|-------------------|-----------------|---------------------|----------------|
| <i>Adekit High Performance Epoxy Adhesives in Cartridges</i>        |  |       |  |                 |                    |                   |                 |                     |                |
| Adekit A130   | Fast setting liquid adhesive with excellent mechanical properties    |       | Decorative elements, stone, tile, composites                                 | 10              | 15                 | 30m               | 3,900           | 17                  | 3              |
| <i>Adekit High Performance Epoxy Adhesives in Bulk</i>              |  |       |  |                 |                    |                   |                 |                     |                |
| H9930   | Fast setting liquid adhesive with excellent mechanical properties    |       | Decorative elements, stone, tile, composites                                 | 10              | 15                 | 30m               | 3,900           | 17                  | 3              |
| <i>Adekit High Performance Polyurethane Adhesives in Cartridges</i> |  |       |  |                 |                    |                   |                 |                     |                |
| Adekit A211   | Slow setting, high elongation, FAR 25.853 self-extinguishing         |       | ABS, nylons, PVC, glass, wood, metals to ABS, polyesters                     | 40              | 5h                 | 16h               | 1,450           | 51                  | 6              |
| EasyMax   | Very fast setting polyurethane, excellent performance, easy to use   |       | Wood, nylons, PVC, glass, ABS, metals to ABS, concrete, polyesters           | 2               | 10                 | -                 | 1,450           | -                   | -              |
| Adekit A251   | Flexible adhesive for strong vibrations and low temperatures         |       | Semi-structural bonds, composites, metals, dissimilar materials, plastics    | 8               | 60                 | -                 | 1,600           | 51                  | 300            |
| Adekit A290   | Very fast setting, high mechanical and aging performance             |       | Composites, metals, plastics, dissimilar materials                           | 3               | 10                 | 30                | 2,100           | 51                  | 90             |
| <i>Adekit High Performance Polyurethane Adhesives in Bulk</i>       |  |       |  |                 |                    |                   |                 |                     |                |
| H6210   | Long potlife adhesive, non sag paste, excellent vibration resistance |       | Panel bonding, composites, dissimilar materials                              | 60              | 5h                 | 18h               | 1,450           | 28                  | 77             |
| H6211   | Slow setting, high elongation, FAR 25.853 self-extinguishing         |       | Self-extinguishing, ABS, nylons, PVC, glass, wood, metals to ABS, polyesters | 40              | 5h                 | 16h               | 1,450           | 51                  | 6              |
| H6290   | Very fast setting, high mechanical and aging performance             |       | Composites, metals, plastics, dissimilar materials                           | 3               | 10                 | 30                | 2,100           | 51                  | 90             |

## OEM APPROVED PRODUCTS

| Product                  | Main Usage   | Certification       | Company         | Approval Reference                             |
|--------------------------|--|---------------------|-----------------|--|
| <b>Core Fillers</b>      |  |                     |                 |  |
| CF 230/234               | Panel Edging   | FAR 25.853          | Airbus          | PQ 10053-040-03                                |
|                          |  |                     | Dassault/Falcon | CR 1.7.0.50                                    |
| CF 230/238               | Core Filling   | FAR 25.853          | Dassault/Falcon | CR 1.7.0.50                                    |
| CF 180                   | Core Filling   | FAR 25.853, ABD0031 | Dassault/Falcon | CR 1.7.0.50                                    |
| <b>Fillers</b>           |  |                     |                 |  |
| APF 4                    | Room temperature tool repair and patch   |                     | Boeing          | D32102-5.2                                     |
| APF 7                    | High temperature tool repair and patch   |                     | Boeing          | D32102-5.4                                     |
| <b>Adhesives</b>         |  |                     |                 |  |
| Adekit A211              | Plastic Bonding  | FAR 25.853, ABD0031 | Thales          |  |
| <b>Resins</b>            |  |                     |                 |  |
| Epolam 2500              | Wet layup laminating   | FAR 25.853          | Eurocopter      | ECS2226  |
| Epolam 2500/2501         | Aircraft interior composite repair   | FAR 25.853, ABD0031 | Airbus          | RS C-M-00260 Issue 1<br>AIMS 04-27-001 Issue 1 |
| PX330                    | Fabrication of plastic parts   | FAR 25.853          |                 |  |
| RIM 610                  | Fabrication of electrical housings   | UL 94-V0            |                 |  |
| <b>Tooling Boards</b>    |  |                     |                 |  |
| Prolab 65                | Milling/machine checking path  |                     | Boeing          | BOEING   |
| Lab 850                  | Metal forming tool   |                     | Airbus          |  |
| <b>Term explanations</b> |  |                     |                 |  |
| FAR 25.853               | Determination of self extinguishing properties, specific to the aerospace industry |                     |                 |  |
| ABD0031                  | Includes FAR 25.853, plus smoke opacity and smoke toxicity                         |                     |                 |  |

## ANCILLARY PRODUCTS

### Protectorant

Blaxygen (case of 12) used with urethanes to prolong storage stability

### Hardeners

Cream Hardener BPO for APF Fillers Available in Red, Black and White 1oz. tubes and 4 oz. tubes

### Coloring Kits for Urethanes

Coloring kits come in single colors or an assortment kit. We have a kit of 1oz assorted tubes in the colors listed. Individual colors are available in 16 oz. bottles.

CP 10 - White      CP 30 - Green  
 CP 15 - Black      CP 35 - Yellow  
 CP 20 - Blue      CP 40 - Orange  
 CP 25 - Red      CP 45 - Violet

### Static Mixing Tips

21 element,  
 0.213" dia., 5.25" length (50ml cart.) pkg 12

### Fillers

**Mineral Filler - Z30150** (Alumina trihydrate filler especially for fast cast systems, 5 gallon pail only)  
**Aluminum Powder - 3085** (Aluminum Powder filler, 5 gallon pail only)

### Mixing Guns - for Dual Syringe Cartridges

50ml manual 1:1  
 400ml manual  
 400ml pneumatic

## GLOBAL OFFERING, LOCAL AVAILABILITY

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