Fiberglass cloth is exactly what the name says - glass. Fine fibers are spun from molten glass marbles, gathered into yarn and woven into a strong, supple glass fabric. It can be folded, rolled or draped, like any other loosely woven fabric - but it can be chemically transformed into solid sheets of tremendous strength. All the fiberglass fabrics listed below are volan treated for maximum strength and resistance to moisture and abrasion. They feature a weave that is tight enough for high strength, yet open enough for thorough wetting by resins.

### STANDARD E-GLASS FIBERGLASS CLOTH

- **1.45 oz./sq. yd. Lightweight Industrial Cloth used in Osprey and other designs.** Widely used by model builders, known as “Deck Cloth”, Thread Count 60 x 47. 
  #1080 (P/N 1080-50) 50" Width $6.80 yd

- **3.16 oz./sq. yd. Lightweight Industrial Cloth with aerospace applications.** Excellent for model building. Only .004” thick. Crowfoot weave, which contours nicely. Thread Count 60 x 58. Breaking Strength 125 x 120 lb./in. Finished Weight 3.08 oz./sq. yd. 
  #120 (P/N 120-38) 38" Width $9.55 yd

- **3.74 oz./sq. yd. Light weight Boat or Tooling Cloth.** Tight plain weave. Thread Count 24 x 22. Breaking Strength 160 x 135 lb./in. Finished Weight 3.60 oz./sq. yd. 
  #1522 (P/N 1522-50) 50" Width $8.75 yd

- **5.79 oz./sq. yd. Lightweight Boat Cloth.** Flat weave, not twisted. Thread Count 18 x 18. Breaking Strength 250 x 225 lb./in. Finished Weight 5.85 oz./sq. yd. 
  #3733 (P/N 3733-60) 60" Width $6.65 yd

### S-GLASS

The chemical formulation of S-glass differs from that of standard E-glass. Examples of E-glass are found in the Standard Fiberglass Cloth section of this catalog. S-glass is 30% stronger and 15% stiffer than E-glass and retains these properties up to 1500° F. S-glass is also considerably tougher than an equivalent E-glass. Other styles are available on request. Sold by the yard.

### NOMEX HONEYCOMB

**AHN 7800** is a Commercial Grade Nomex honeycomb particularly suited for use where resistance to corrosive attack and moisture are important. This material exhibits good strength characteristics and is fire resistant. It is available in a variety of cell sizes and densities to suit most purposes. Typical applications include lightweight non-structural bulkheadings for ships, joiner panels, shelters, antennas, and auto body panels. This material is not intended for aircraft or aerospace applications. This material also exhibits good thermal insulation properties and also has good dielectric properties. This honeycomb is easily machined, formed, and shaped and well suited to adhesive bonding.

### GLASS MAT

100% fiberglass in a non-woven state. It is used for bulk “build-up” in molding and fabricating components. Also useful for filling holes and badly damaged parts. 1.5 Oz. Weight. 38” Width. 
P/N 01-06500 $3.50/Yd

### KNITTED E-GLASS FABRIC

Knitted fabrics are a relatively new format in composites. The performance of the glass is greatly enhanced by removing the interstices of the woven fabric and the cramped condition. E-glass in woven goods normally has 22,000 psi tensile strength. Layered nonwoven goods give 27,000 psi which is about a 20% improvement. Knitted glass offers greater ease of fabric orientation and saves time over multi-layered wet-lays-up.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight/sq yd</th>
<th>Width</th>
<th>Ply Thickness</th>
<th>Price/yard</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-00640</td>
<td>17.6 oz.</td>
<td>50&quot;</td>
<td>1.70 mm</td>
<td>$12.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-00650</td>
<td>13.4 oz.</td>
<td>50&quot;</td>
<td>.021 mm</td>
<td>$5.99</td>
</tr>
</tbody>
</table>

Prices Subject to Change Without Notice
THE MOST BASIC STRUCTURAL MATERIAL IN BUILDING A COMPOSITE AIRCRAFT IS GLASS CLOTH. THE USE OF GLASS IN AIRCRAFT STRUCTURES, PARTICULARLY STRUCTURAL SANDWICH COMPOSITES, IS A RECENT DEVELOPMENT. GLASS CLOTH IS AVAILABLE COMMERCIALLY IN HUNDREDS OF DIFFERENT WEIGHTS, WEAVES, STRENGTHS AND WORKING PROPERTIES.

VARIETY OF FIBERGLASS CLOTHS

RUTAN FIBERGLASS CLOths

Kevlar® 49 aramid fiber was introduced commercially in 1972 and is the Du Pont registered trademark for its new high strength, high modulus organic fiber. It combines high tensile strength (43,000 PSI) and high modulus (19 million PSI) with light weight and toughness superior to other reinforcing fibers for plastics. It is available in yarns and rovings which meet all FAA requirements for flammability. It shows no degradation in jet fuel, lubricating oils, water, salt water or high humidity. At cryogenic temperatures (-320°F), performance is excellent with essentially no embrittlement or degradation of fiber properties. Kevlar 49 can offer both a significant weight saving and improved stiffness versus glass in addition to superior vibration damping and good impact resistance. A kayak made with Kevlar 49, for example, weighs about 18 pounds while the weight of a comparable boat made with glass would be over 30 pounds. The advantages over glass in small aircraft are similar - weight savings and improved impact resistance. Kevlar 49 is used in a number of parts on the Lockheed-L-1011 because of weight savings of up to 30% compared to similar parts made of glass. One unusual benefit of Kevlar is its "quietness". A cowling made of Kevlar will be quieter and less sensitive to engine vibrations than its glass or graphite counterpart. Although all of the processes used in combining resins with glass fiber are adaptable to Kevlar 49 with little or no modification, the vinyl ester system is compatible, but the use of polyesters is not recommended because of poor bonding with Kevlar. The epoxy resin systems featured in this catalog are compatible with Kevlar 49 and have good wetting characteristics.

Kevlar® 49 is stocked in three different fabric styles. Kevlar® #120 is a very light weight fabric, while #281 and #285 are identical except for the weaving pattern. Other weights and weaves of Kevlar® are available on a special order basis. Be sure to specify the Kevlar® style when ordering.

<table>
<thead>
<tr>
<th>Style</th>
<th>Part No.</th>
<th>Oz./Sq.Yd</th>
<th>Weight Width</th>
<th>Thickness</th>
<th>Weave</th>
<th>Breaking Strength Lbs/inch</th>
<th>Price Per Lineal Yd</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>01-38100</td>
<td>1.8</td>
<td>38&quot;</td>
<td>.0035&quot;</td>
<td>34 x 34</td>
<td>Plain</td>
<td>$29.85</td>
</tr>
<tr>
<td>281</td>
<td>281-38</td>
<td>5.0</td>
<td>38&quot;</td>
<td>.010&quot;</td>
<td>17 x 17</td>
<td>Plain</td>
<td>$79.50</td>
</tr>
<tr>
<td>4 Harness Satin</td>
<td>01-01653</td>
<td>5.0</td>
<td>38&quot;</td>
<td>.010&quot;</td>
<td>17 x 38</td>
<td>Satin</td>
<td>$19.98</td>
</tr>
</tbody>
</table>

Quantity Discount: 10% on 25-50 Yds.; 15% on 50-100 Yds.; 20% on over 100 Yds.

PRECISION SCISSORS

Straight-edge blades easily slide through the fabric and are sharpened to the tip for smaller applications. Grabs the fabric and cuts cleanly, with no material folding over the blades - even when cutting left-handed. Blades fully extend into the handles for durability and better cutting stability and pressure distribution. Exceptional accuracy and retains smooth blade movement, even in heavy-use environments. Straight blades made of stainless steel (Blades are not serrated). Good for cutting stitchwork, thread, cloth, leather, fabrics, films, sign and graphics material, vehicle wraps, and more.

P/N 01-01868 ..................$19.90

INDUSTRIAL FABRIC SHEARS

Wiss No. 20W heavy-duty shears, ideal for cutting fiberglass cloth and all fabrics. Hot drop-forged steel.

Right Hand Shears ..................P/N 01-00397 ...............$36.50
Left Hand Shears ..................P/N 01-00398 ...............$36.50

FEATHERWEIGHT SCISSORS

Lightweight, durable, and reliable GINGHER® Scissors are lightweight, extremely sharp and comfortable. These 2-1/2 oz. scissors are perfect for use during the lay-up for a variety of purposes and can be soaked in acetone for easy clean up. We recommend saving one pair for only cutting Kevlar® and keeping a second pair for general use.

P/N 01-00342 ..................$47.85

OFFSET KEVLAR CUTTING SHEARS

Although Kevlar® has many advantages over conventional fiberglass weaves, it is very difficult to cut. Special scissors have been developed to facilitate cutting. These scissors have a wear resistant coating which is metallurgically bonded to the steel substrate. The coating will not chip or peel off and can be sharpened. Model WR-10E-4 Shears.

P/N 01-00341 ..................$58.75

COMPOSITE MATERIALS

WWW.AIRCRAFTSPRUCE.COM

Prices Subject to Change Without Notice
BIDIRECTIONAL WOVEN CARBON GRAPHITE

Woven graphite is a fabric introduced in recent years which has become an excellent alternative to fiberglass and Kevlar - only mills thick with great strength. In addition to its great strength, graphite fabric also has very low density and is very stiff. Although it is quite costly, the material saving is appreciable since only one course of graphite is required for 3 or 4 of fiberglass. It cuts considerably easier than Kevlar. Graphite fabric is stocked in the three different styles shown below. Other weights and weaves of graphite are available on a special order basis. Be sure to specify the graphite style when ordering. These carbon graphite cloths are not pre-preg fabrics. 

Other weights and weaves of graphite are available on a special order basis. Be sure to specify the graphite style when ordering. These carbon graphite cloths are not pre-preg fabrics.

* Warning folding for shipment can damage the filaments in the fabric. Folding will be done at customers' risk and request only.

CARBON FIBER

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>282 01-00971</td>
<td>5.8</td>
<td>50</td>
<td>.007</td>
<td>12X12</td>
<td>675</td>
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<tr>
<td>282 01-28260</td>
<td>5.8</td>
<td>60</td>
<td>.007</td>
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<td>675</td>
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</table>

TWILL 2 X 2 WEAVE

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>284 01-00602</td>
<td>5.7</td>
<td>50</td>
<td>.007</td>
<td>12X12</td>
<td>2/2 Twill 3K</td>
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<td>.007</td>
<td>12X12</td>
<td>2/2 Twill 3K</td>
<td>$35.50</td>
</tr>
</tbody>
</table>

STANDARD E-GLASS & FIBERGLASS TAPES

Tapes are woven from tough, abrasion resistant threads, .012" thick, into narrow widths with non-raveling selvage. Perfect for glassing narrow pieces and as a backup for fiberglass. E-glass tapes are compatible with epoxies but not with vinyl ester or polyester resins. Fiberglass tapes are compatible with epoxies but not with vinyl ester or polyester resins.

<table>
<thead>
<tr>
<th>Style Part No.</th>
<th>Width (in.)</th>
<th>Length (ft)</th>
<th>Part No.</th>
<th>Price/Spool</th>
</tr>
</thead>
<tbody>
<tr>
<td>702</td>
<td>1.5</td>
<td>12</td>
<td>01-00238</td>
<td>$59.85</td>
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<tr>
<td>703</td>
<td>3</td>
<td>12</td>
<td>01-00240</td>
<td>$76.56</td>
</tr>
<tr>
<td>703</td>
<td>3</td>
<td>50</td>
<td>01-00241</td>
<td>$206.40</td>
</tr>
</tbody>
</table>

UNIDIRECTIONAL CARBON TAPES

These carbon fiber tapes are used to add stiffness and tensile strength in one direction without adding significant thickness or weight. These West System tapes have 12 carbon fiber bundles per inch of tape width. The bundles are held together with a polyester fill thread making the tape easy to handle. These tapes are compatible with epoxies but not with vinyl ester or polyester resins. #702 tape is 1.5" wide and #703 tape is 3" wide.

<table>
<thead>
<tr>
<th>Style No.</th>
<th>Width (in.)</th>
<th>Length (ft)</th>
<th>Part No.</th>
<th>Price/roll</th>
</tr>
</thead>
<tbody>
<tr>
<td>702</td>
<td>1.5</td>
<td>12</td>
<td>01-00238</td>
<td>$59.85</td>
</tr>
<tr>
<td>703</td>
<td>3</td>
<td>12</td>
<td>01-00240</td>
<td>$76.56</td>
</tr>
<tr>
<td>703</td>
<td>3</td>
<td>50</td>
<td>01-00241</td>
<td>$206.40</td>
</tr>
</tbody>
</table>

CARBON FIBER TUBING

Aircraft Spruce offers structural tubing and structural torsion tubing, engineered and built to meet your exact specifications and tolerances. Structural Torsion Tubing, in continuous lengths up to 40', is manufactured with the computer-controlled, fully-automated Helical Winding Process. We offer a broad array of Fiber Options and tubing wall thickness and diameter is determined on a case-by-case basis to suit your application. Special Order Sold in 10 ft. lengths only (can cut for UPS shipment).

<table>
<thead>
<tr>
<th>D of Tube</th>
<th>Wall Thickness</th>
<th>Length</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5&quot;</td>
<td>.100</td>
<td>10'</td>
<td>03-00171</td>
<td>$458.00</td>
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<tr>
<td>0.75&quot;</td>
<td>.100</td>
<td>10'</td>
<td>03-00172</td>
<td>$458.00</td>
</tr>
<tr>
<td>1.00&quot;</td>
<td>.120</td>
<td>10'</td>
<td>03-00173</td>
<td>$357.95</td>
</tr>
<tr>
<td>1.25&quot;</td>
<td>.120</td>
<td>10'</td>
<td>03-00174</td>
<td>$515.00</td>
</tr>
<tr>
<td>1.5&quot;</td>
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<td>10'</td>
<td>03-00175</td>
<td>$414.95</td>
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<tr>
<td>1.75&quot;</td>
<td>.120</td>
<td>10'</td>
<td>03-00176</td>
<td>$565.00</td>
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<td>2&quot;</td>
<td>.120</td>
<td>10'</td>
<td>03-00177</td>
<td>$464.95</td>
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<td>2.5&quot;</td>
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<td>10'</td>
<td>03-00178</td>
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<td>3&quot;</td>
<td>.120</td>
<td>10'</td>
<td>03-00179</td>
<td>$689.99</td>
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</tbody>
</table>

CARBON GRAPHITE YARN TOW

High strength (470,000 PSI) carbon fibers are used as reinforcement in high performance structural composites for aircraft applications, recreational and industrial products. Carbon fiber filaments are finer than a human hair. These filaments are bundled together to make a fiber of 3,000, 6,000 or 12,000 filaments which is called a “tow”. The tow is sized with an epoxy compatible material to improve the handling characteristics. It is then wound on a cardboard core holding from 4 to 6 pounds of fiber. 1 Lb. spool.

<table>
<thead>
<tr>
<th>Actual Size</th>
<th>Part No.</th>
<th>Approx. Yield</th>
<th>Roll Size</th>
<th>Price/Spool</th>
</tr>
</thead>
<tbody>
<tr>
<td>3K Tow</td>
<td>01-00343</td>
<td>2470 Yd./Lb.</td>
<td>4 Lb.</td>
<td>$394.00</td>
</tr>
<tr>
<td>6K Tow</td>
<td>01-00307</td>
<td>1229 Yd./Lb.</td>
<td>1 Lb.</td>
<td>$79.65</td>
</tr>
<tr>
<td>12K Tow</td>
<td>01-00004</td>
<td>621 Yd./Lb.</td>
<td>2 Lb.</td>
<td>$149.95</td>
</tr>
<tr>
<td>12K Tow</td>
<td>01-00345</td>
<td>621 Yd./Lb.</td>
<td>4 Lb.</td>
<td>$298.95</td>
</tr>
</tbody>
</table>

It appears that the 6K tow will prove most practical for homebuilding applications. This size will be available in the small units shown. The 3K and 12K sizes are offered in full spools only. The 3K tow is used primarily by weavers. The 12K is difficult to wet out but can be done by diligent brushing.
UNIDIRECTIONAL CAP FIBERGLASS TAPE
This 54 Yard roll of woven unidirectional tape consists of a plain weave construction with at least 80% of the fabric weight in the 0° or Warp direction. This unidirectional tape can be used instead of unidirectional fabric for spar caps, wings and elevators. Contours well and cuts building time considerably. May be used with either polyester or epoxy systems. Used on Pollowanig, Long-EZ, Cozy, Adventure and applicable to all composites.
Fiber: E-Glass Fiberglass
Product Type: Woven Tape
Construction: Unidirectional
Density: 850 g/m²
Width: 3” (75 mm)
Length: 54 Yards
Finish: Silane
P/N 01-01651
$89.00

UNIDIRECTIONAL ARAMID - TWARON ROVING
Material: 1500 denier Twaron (aramid), 5 ends (7500 denier total). Type: 1000. Yield: 567 yards/pound (0.588 lbs/1000ft). Elongation: 3.5%* (each end). Break: 79 lb. + 6.25%* (each end) Packaging. Tube length: 5.25”. Inner diameter: 5/8”. Yards/package: 300 300 Ft. Roll $46.50
P/N 968

SYSTEM THREE QUIKFAIR EPOXY FAIRING PUTTY
Lightweight, micro balloon filled, fast curing 2-part epoxy fairing putty with excellent moisture resistance. Use on both fiberglass and wood epoxy structures above or below the waterline. At 70° F it is sufficiently cured to be hand sanded in 3 hours or machine sanded in 4 hours. This allows you to apply 3 coats in a standard 8 hour shift or 6 in a round the clock basis. Complete a fairing or filling job in a day rather than 3 or 4 days. NOTE: QuikFairs warm butter-like consistency makes it easy to measure by weight. Use care when measuring by volume as QuikFair does not self-level and may trap air pockets. As QuikFair is fast curing the working time is short. Mix no more than can be applied within 10 minutes.
24 oz. Kit P/N 01-00404 $34.50
1-1/2 qt. Kit P/N 01-00405 $48.50

EPOXY PREMIUM PIGMENTS
These Premium Pigments are a paste to tint polyester, vinyl ester, epoxy resin, and polylethylene. Add about 6% to 8% of pigment by weight or 1/2 pint of pigment per gal. of resin.
White - 1 oz. P/N 01-45308 $5.95
White - 8 oz. P/N 01-45501 $19.95
Black - 1 oz. P/N 01-45319 $6.50
Black - 8 oz. P/N 01-45512 $20.50

IMPACT RESISTANT LAMINATING EPOXY
DLRH-3212 is an unfilled, clean epoxy resin system with a long pot life. DLRH-3212 is a tough, strong, impact resistant resin with chemical resistance. It has excellent wetting quality on kevlar, carbon graphite and fiberglass cloth. Used extensively in construction of aircraft, race cars, motorcycles, helmets and sports equipment. Mixing Ratio by Wt: 100:30; Pot Life (200 Gm MASS) 60 Min; Tensile Strength @ 25 C 12,500; Flexural Modulus @ 25 C 40,900; Heat Deflection 325 F. Thermal Shock 72°F–125°F; Shore “D” 80; Density: Resin 9.7, Hardener 7.9; Mixed: 9.1; Shelf Life: Resin/ Hardener 1 Year.
Quart Kit P/N 01-00430 $61.85
Gallon Kit P/N 01-00431 $169.95
5 Gallon Kit P/N 01-00432 $835.00

JEFFCO EPOXY LAMINATING SYSTEM
1307 Low Viscosity Resin / 3102 Fast Hardener - 100% solids 2-component laminating sys- tem with excellent wet out, low viscosity and high strength. Very low odor and toxicity. Easy to use, 4:1 weight or volumetric mixing, safe, fast curing products for a variety of use applications. Used for fast curing, penetrating wood coatings, adhesives and sealers, fiberglass laminating and microsphere filled fairing compounds. Excellent cold tempera- ture cure down to 40°F. No solvents or VOC’s. Non-hazardous, non-corrosive hardener.
Low Viscosity Laminating Resin
1307 LV, Pail (40 lbs) P/N 01-07917 $348.75
1307 LV, Gallon (8 lbs) P/N 01-07914 $69.75
Fast Hardener
3102, Pail (40 lbs) P/N 01-07920 $433.00
3102, Gallon (8 lbs) P/N 01-07918 $92.75
3102, Quart (2 lbs) P/N 07915 $25.25
Medium Hardener
3176, Pail (40 lbs) P/N 01-07921 $399.00
3176, Gallon (8 lbs) P/N 01-07922 $86.85
3176, Quart (2 lbs) P/N 01-07923 $23.50
KITS - Jeffco Epoxy, 1 gal. kit, fast... P/N 01-07916 $95.00
Jeffco Epoxy, 5 gal. kit, fast... P/N 01-07919 $465.95
Jeffco Epoxy, 1 gal. kit, medium... P/N 01-07924 $93.25
Jeffco Epoxy, 5 gal. kit, medium.. P/N 01-07925 $458.95

AEROPOXY PT2712 VACUUM INFUSION EPOXY
PT2712 is a low viscosity epoxy system designed for the fabrication of parts and structures by the resin infusion method. This system flows extremely well, and produces dense, void-free components. The cured properties of this system are very high, so it produces items with good strength and toughness with excellent long-term stability. Three hardeners are available for use with this resin, which provide a range of working times. The hardeners have gel times of approximately 1 hour, 2 hours and 3 hours, so, by proper selection between the three, it is possible to easily infuse any size structure. The three hardeners are identical except for reaction time, so no matter which hardener is chosen, the user can expect the same high performance properties. The mixed viscosity with all three hardeners is just over 300 centipoise, so the material flows very well, even in thin walled areas. It penetrates heavy fabric sections and wets out quickly for further ease of production.

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Pot Life</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT2712 with Part B</td>
<td>1 Gallon</td>
<td>70 Minutes</td>
<td>01-1587</td>
<td>$149.85</td>
</tr>
<tr>
<td>PT2712 with Part B</td>
<td>5 Gallons</td>
<td>70 Minutes</td>
<td>01-1590</td>
<td>$488.00</td>
</tr>
<tr>
<td>PT2712 with Part B1</td>
<td>1 Gallon</td>
<td>122 Minutes</td>
<td>01-1588</td>
<td>$149.85</td>
</tr>
<tr>
<td>PT2712 with Part B1</td>
<td>5 Gallons</td>
<td>122 Minutes</td>
<td>01-1591</td>
<td>$475.00</td>
</tr>
<tr>
<td>PT2712 with Part B2</td>
<td>1 Gallon</td>
<td>175 Minutes</td>
<td>01-1589</td>
<td>$149.95</td>
</tr>
<tr>
<td>PT2712 with Part B2</td>
<td>5 Gallons</td>
<td>175 Minutes</td>
<td>01-1592</td>
<td>$475.00</td>
</tr>
<tr>
<td>PT2712 with Part B3</td>
<td>1 Gallon</td>
<td>40 Minutes</td>
<td>01-1593</td>
<td>$136.85</td>
</tr>
<tr>
<td>PT2712 with Part B3</td>
<td>5 Gallons</td>
<td>40 Minutes</td>
<td>01-1594</td>
<td>$475.00</td>
</tr>
</tbody>
</table>

FIRE RETARDANT LAMINATING EPOXY KITS
The epoxy systems in this group are highly engi- neered products designed to meet or exceed the requirements of the various flame retardant speci- fications for which they were developed. They are filled laminating compounds that have good han- dling characteristics and provide very high physical properties in addition to their excellent fire retardant capabilities. They are well suited to a wide variety of com- position and tooling applications where the requirements of very good physical properties and outstanding flame retardant abilities will provide durable parts and tools. PT2475 is a filled, off-white epoxy laminating system designed for use in constructing fire retardant laminates for parts or reinforcements. PT2475 meets the requirements of the FAR 25.853 Specification. This system has a 1 hour pot life at normal ambient temperatures, which will allow the construction of larger laminated than would be possible with a faster material. The system cures well at room temperature, and the cure can be accelerated with the addition of mild heat if desired.
Gallon P/N 01-01517 $179.75
5 Gallon P/N 01-01518 $743.00
POLY EPOXY TECHNICAL DATA

<table>
<thead>
<tr>
<th>Mechanical Properties</th>
<th>w/Post Cure</th>
<th>w/o Post Cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength, PSI</td>
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<td>8800</td>
</tr>
<tr>
<td>Elongation at Break, %</td>
<td>7.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Tensile Modulus, PSI</td>
<td>470,000</td>
<td>460,000</td>
</tr>
<tr>
<td>Flexural Strength, PSI</td>
<td>19,000</td>
<td>14,500</td>
</tr>
<tr>
<td>Flexural Modulus, PSI</td>
<td>515,000</td>
<td>600,000</td>
</tr>
<tr>
<td>Compressive Strength, PSI</td>
<td>32,000</td>
<td>33,000</td>
</tr>
<tr>
<td>Shore D Hardness</td>
<td>82</td>
<td>70</td>
</tr>
<tr>
<td>Glass Transition Temp., °C</td>
<td>72</td>
<td>62</td>
</tr>
<tr>
<td>Heat Distortion Temp., °C</td>
<td>64</td>
<td>50</td>
</tr>
<tr>
<td>Water Immersion Weight Gain, (% @ 140°F, 30 days)</td>
<td>2.8</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Rheology: Mixing Ratio: 3 parts Resin to 1 part Converter by Volume

Available exclusively from aircraft spruce

ALPHA POXY
NON-STRUCTURAL EPOXY SYSTEM

AlphaPoxy is a low-cost flexible epoxy system that is ideal for laying up non-structural parts like wheel pants, or fairings. Because it is flexible, we don’t recommend it for structural applications, such as fabricating load-bearing structural aircraft parts. Use PolyEpoxy for these applications. This is a low- viscosity system specifically formulated for filling with microballoons, cotton floc, or milled glass fibers to make slurries. It was designed for maximum sandability; when cured, it is soft enough to be easily cut with sandpaper smoothing a breeze. AlphaPoxy is also excellent when used as a final filler resin over structural parts when an epoxy gel coat is not required. You can use it in place of polyester resin for a much more durable part at a very attractive price. AlphaPoxy Kit, 1-1/4 gallon.................P/N 01-07911 ..........................$87.00

Available exclusively from aircraft spruce

AEREOPOXY PT1105 EPOXY SURFACE COAT

PT1105 is a white, general purpose room temperature epoxy surface coat resin. The creamy smooth consistency of the mixed material allows easy application to the model surface with minimum drag. The thixotropic properties of PT1105 permits good coverage on points and sharp cor ners, and application to vertical surfaces without sagging. Due to the non-galling nature of PT1105, it will give good service in a variety of metal forming applications. When used with Part B hardener, the PT1105 system will cure quickly, and can be sanded or filed in 10 to 12 hours. The cured material is tough, with good chip resistance on edges and sharp details. PT1105 works very well in the fabrication of plastic faced plaster patterns when used with Part B1 hardener.

Quart Kit ..................................P/N 09-05263 .............................................$44.85
Gallon Kit ..................................P/N 09-05264 .............................................$147.75
Gallon Pail Kit..............................P/N 09-05265 .............................................$563.00

E-Z POXY
EPOXY LAMINATING SYSTEMS

In early 1996, Composite Design Co. developed E-Z Poxy to provide a replacement epoxy system for Epoxine (Safe-T-Poxy) which is no longer produced by Hexcel. The E-Z Poxy series of laminating systems utilizes one resin and your choice of three hardeners for varying pot life and viscosity requirements.

The E-Z Poxy systems offer the same handling and physical properties as the discontinued Epoxine systems including ease of use, long pot life, rapid cure for demold or process continuation, and superior room temperature curing properties. Excellent for use in sport aviation, marine, and industrial applications.

E-Z 83 hardener is equivalent to Safe-T-Poxy standard hardener, E-Z 84 is equivalent to Safe-T-Poxy II hardener, and E-Z 87 is equivalent to Safe-T-Poxy slow hardener. E-Z Poxy products should not be mixed with materials produced by other epoxy manufacturers.

E-Z POXY PRICE LIST

<table>
<thead>
<tr>
<th>Description</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Z Poxy 1-1/2 gal. kit* EZ 83 Hardener</td>
<td>01-07850</td>
<td>$222.95</td>
</tr>
<tr>
<td>E-Z Poxy 5 gal. kit** EZ 83 Hardener</td>
<td>01-07950</td>
<td>$1,006.00</td>
</tr>
<tr>
<td>E-Z Poxy 1-1/2 qt. kit EZ 83 Hardener</td>
<td>01-08050</td>
<td>$64.75</td>
</tr>
<tr>
<td>E-Z Poxy II 1-1/2 gal. kit* EZ 84 Hardener</td>
<td>01-08850</td>
<td>$192.95</td>
</tr>
<tr>
<td>E-Z Poxy II 5 gal. kit** EZ 84 Hardener</td>
<td>01-08950</td>
<td>$796.00</td>
</tr>
<tr>
<td>E-Z Poxy 1 gal. resin</td>
<td>01-00245</td>
<td>$109.75</td>
</tr>
<tr>
<td>E-Z Poxy 5 gal. resin</td>
<td>01-00246</td>
<td>$439.00</td>
</tr>
<tr>
<td>E-Z Poxy 1/2 gal. Hardener</td>
<td>01-00247</td>
<td>$113.75</td>
</tr>
<tr>
<td>E-Z Poxy II 1/2 gal. Hardener</td>
<td>01-00248</td>
<td>$96.75</td>
</tr>
<tr>
<td>E-Z Poxy 2-1/2 gal. Hardener</td>
<td>01-00249</td>
<td>$413.00</td>
</tr>
<tr>
<td>E-Z Poxy slow 1/2 gal. Hardener</td>
<td>01-00253</td>
<td>$111.75</td>
</tr>
</tbody>
</table>

* 8 lbs. resin, 3.5 lbs hardener  ** 40 lbs. resin, 18 lbs. hardener

E-Z POXY TECHNICAL DATA

E-Z POXY RESIN SYSTEMS FROM COMPOSITE POLYMER DESIGN

E-Z 10 Epoxy Resin
E-Z 84 Aromatic Amine Hardener
E-Z 83 Aromatic Amine Hardener
E-Z 10 Resin (Viscosity) 1500 cps @ 77°F with:

Hardener
EZ 83 | EZ 84 | EZ 87

Mixed Properties:
Mixed Viscosity cps @ 77°F | 1300 | 800 | 1500
Viscosity Hardener cps @ 77°F | 410 | 140 | 830
Pot Life @ 77°F | 2 hrs. | 2 hrs. | 5 hrs.
Tack Free @ 77°F | 4 hrs. | 8 hrs. | 8 hrs.
Cure Time @ 77°F | 24 hrs. | 3 days | 3 days
Mix Ratio by Volume | 100/47 | 100/47 | 100/47
Mix Ratio by Weight | 100/44 | 100/44 | 100/44

Physical Properties Tg (F):
R/T | 151 | 151 | 142
P/C* | 196 | 196 | 196
Elongation % | 3.5 | 3.5 | 3.9
Specific Gravity | 1.14 | 1.13 | 1.14
Linear Shrinkage @ 23°C (4 days %) | .10 | .10 | .10
Tensile Strength PSI | 100/47 | 8,200 | 8,100 | 8,400
P/C | 142/50 | 24 hrs. | 24 hrs. | 24 hrs.
Tensile Modulus (PSI x 10^-5) | 4.8 | 4.2 | 4.0

* Viscosity may vary +/- 10%

*Post Cure for 2 hrs. @ 150°F

E-Z Poxy systems provide excellent room temperature curing systems for hand layup of composite parts and tooling. The systems are designed to provide ample working time with the varied pot life options while providing a rapid finish cure. Post curing these systems will increase their physical properties as designated in the above data, however, post cure is not required.
EPOXY LAMINATING SYSTEMS

POLYESTER RESINS

Polyester resins are hygroscopic (they draw moisture from the air). There are two types of resin, and one or both types may be required, depending on the application. Type “A” resin has a small amount of wax in it, which allows it to go into the surface and forms a barrier against moisture. This permits the resin to cure completely and the surface is hard and easily sanded. Bond Coat “B” resin does not have any wax content. As a result, the surface stays a little tacky, as the surface cure is being inhibited by moisture. This tacky surface provides excellent adhesion between coats. Bond Coat resin is therefore recommended for the first coat of resin to fill the weave of the glass cloth, for bonding fiberglass cloth to plywood or other surfaces and for multi-layers of glass cloth.

**TYPE “A” RESIN - #1520-5 is a general purpose ortho surfacing resin intended for the finishing coat applied over the Bond Coat #1063-5, or for single coat application. A second coat may be applied after full cure and thorough sanding but is not recommended.**

Polyester #692 Quart ..........................P/N 01-00346 ..........$31.50
1 Gal. #1520-5 with 1 Oz. Catalyst ..........P/N 01-00347 ..........$37.70
5 Gal. #1520-5 with 4 Oz. Catalyst ..........P/N 01-00348 ..........$318.95
Additional catalyst may be required. 1 Oz. P/N 01-06900 ..........$5.45

**SURFACE CURING AGENT** is used in polyester resin to improve sanding properties. Added to #1063-5 Bond Coat or #8050-5 isophthalic, it will provide same sanding properties as in Type “A” Surfacing Resin. Use in proportions of 2 oz. per gallon of resin. Surface Curing Agent is used in addition to catalyst.

4 Oz. in Polyethylene Dispenser Bottle ..........P/N 01-07100 ..........$15.65
Pint (16 Oz.) in Polyethylene Dispenser Bottle ..........P/N 01-07200 ..........$13.90
Gallon (128 Oz.) ..........P/N 01-07300 ..........$61.75

**MEKP NORAC CATALYST** is the catalyst added to polyester resins and vinyl ester resins. As the catalyst mixes with the resin, a chemical reaction occurs, creating heat which cures the resin. Use approximately 1/2 oz. per quart of resin. We recommend the use of our MEKP Catalyst Dispenser for accurate measuring and pouring of catalyst.

2 oz. ..........P/N 01-01119 ..........$4.95
5 oz. ..........P/N 01-01120 ..........$9.65
10 oz. ..........P/N 01-01121 ..........$15.35
25 oz. ..........P/N 01-01122 ..........$32.05
50 oz. ..........P/N 01-01123 ..........$58.80
1 gal. ..........P/N 01-01124 ..........$116.75

**VINYL ESTER RESIN**

“**Note: 3 month shell life from date of manufacture. We suggest ordering when you are ready to use.**”

Dow Chemical's DERAKANE 411-350 PA Vinyl Ester Resin is an epoxy-based Vinyl ester designed to provide superior toughness and high corrosion resistance. Many leading kit aircraft manufacturers use vinyl ester resins extensively due to its quality and ease of fabrication. We furnish medium "promoted" Vinyl ester 411-350 PA resin which includes CONAP, DMA the resin is cured by adding the MEKP which is furnished with the kit. Gel times vary according to the amount of MEKP added and the ambient temperature. Shell life of promoted vinyl ester resin is short at only a few months.

**MEKP Clear Catalyst 1oz.** ..........P/N 01-01110 ..........$2.85
**MEKP NORAC Catalyst Only (4 oz.)** ..........P/N 01-07305 ..........$5.95
**Vinyl Ester Resin 411-350PA - Quart Kit** ..........P/N 01-01109 ..........$59.75
**Vinyl Ester 1-Gal. Kit (Resin & Catalyst)** ..........P/N 01-07355 ..........$86.70

**GALAXY LARGE QUANTITY CHART**

<table>
<thead>
<tr>
<th>System 285</th>
<th>(Max. Tg 105 C - 110 C; 195 F - 230 F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixing ratio</td>
<td>Resin/Hdnr</td>
</tr>
<tr>
<td>H285 by volume</td>
<td>H285-F</td>
</tr>
<tr>
<td>100-40 by weight</td>
<td>H285-3</td>
</tr>
<tr>
<td>1/10 oz.</td>
<td>H285-1</td>
</tr>
<tr>
<td>1/50 oz.</td>
<td>H285-2</td>
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</tbody>
</table>

**SYSTEM 335**

<table>
<thead>
<tr>
<th>System 335</th>
<th>(Max. Tg 75 C - 80 C; 160 F - 180 F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixing ratio</td>
<td>Resin/Hdnr</td>
</tr>
<tr>
<td>H335 by volume</td>
<td>H335-F</td>
</tr>
<tr>
<td>100-38 by weight</td>
<td>H335-S</td>
</tr>
<tr>
<td>1/5 oz.</td>
<td>H335-1</td>
</tr>
<tr>
<td>1/10 oz.</td>
<td>H335-2</td>
</tr>
</tbody>
</table>

**CATHALYST SMALL QUANTITY CHART**

<table>
<thead>
<tr>
<th>Catalyst</th>
<th>Quart</th>
<th>Gallon</th>
<th>5 Gallon</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 oz.</td>
<td>2 oz.</td>
<td>3 oz.</td>
<td>3 oz.</td>
</tr>
<tr>
<td>1 oz.</td>
<td>1 oz.</td>
<td>1 oz.</td>
<td>1 oz.</td>
</tr>
</tbody>
</table>

**MEDIAN PROMOTED**: Includes CONAP, DMA, and other additives. Add MEKP for complete cure:

<table>
<thead>
<tr>
<th>Catalyst</th>
<th>Quart</th>
<th>Gallon</th>
<th>5 Gallon</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16 oz.</td>
<td>1 oz.</td>
<td>5 oz.</td>
<td>5 oz.</td>
</tr>
</tbody>
</table>

**WARNING**: MEKP Catalyst is very dangerous to the eyes. Always wear full protective gear and have running water at hand when working with MEKP.

**COMPARISON OF SYSTEMS**

<table>
<thead>
<tr>
<th>Property</th>
<th>DERAKANE 411-350PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength, psi</td>
<td>..................11-12,000</td>
</tr>
<tr>
<td>Tensile Modulus, units 105 psi</td>
<td>..................7.9</td>
</tr>
<tr>
<td>Elongation, %</td>
<td>..................5-6</td>
</tr>
</tbody>
</table>

(DERAKANE 411-350) (7-8)

<table>
<thead>
<tr>
<th>Property</th>
<th>Flexural Strength, psi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexural Modulus, units 105 psi</td>
<td>..................16-18,000</td>
</tr>
<tr>
<td>Compressive Strength, psi</td>
<td>..................4.5</td>
</tr>
<tr>
<td>Compressive Modulus, units 105 psi</td>
<td>..................16-17,000</td>
</tr>
<tr>
<td>Compressive Deformation at Yield, %</td>
<td>..................3.5</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>..................1.12</td>
</tr>
<tr>
<td>Heat Distortion Temp., °F</td>
<td>..................210-230</td>
</tr>
</tbody>
</table>

Barcol Hardness | ..................35
PR-2032 is a medium viscosity, unfilled, light amber laminating resin that is designed for structural production applications. 3 hardeners are available for use with PR-2032. PH-3660, has a 1-hour pot life. When used with either of these hardeners, the system gives excellent wet out of fiberglass, carbon and aramid fibers.  

AEROPOXY contains no MDA (a known liver toxin and carcinogen) and meets or exceeds current OSHA requirements for safe use. Hardeners PH-3665 has a longer pot life than PH-3660, 2 hours, that is useful for vacuum bagging larger parts before the resin has gelled. Hardeners PH-3630 is intended for smaller laminates, fast repairs or where a transparent appearance is needed. PH-3660 is a standard production hardener for fabricating composite parts. PH-3663 a 90 minute working time provides more time for construction. This hardener provides similar mixed viscosities, so handling will be basically the same, except for the different working times.

### WEST SYSTEM EPOXY

WEST SYSTEM brand resins and hardeners, form a two-part epoxy system developed by Gougeon Brothers specifically for wood and composite boat construction. Rutan Aircraft Factory now recommends WEST SYSTEM epoxy for certain homebuilt aircraft applications, particularly where a moisture resistant epoxy is desired. 105 Resin is the base material on which all of the WEST SYSTEM epoxy systems are built. The resin is a clear, light amber, low-viscosity liquid. It is designed specifically to wet out wood fiber. With roller applications, it possesses excellent thin film characteristics in flowing out and is self-leveling without fish-eyeing. It’s relatively high flash point makes it safer to work with than polyesters. It can be cured in a wide temperature range, thus bonded and shaped. It cures quite clear so that the natural finish shines through. 205 Fast Hardener, when mixed with the 105 Resin in a ratio of 5 parts Resin to 1 part Hardener, yields a high-strength, rigid solid with excellent cohesive properties and provides an excellent moisture vapor barrier. The 105 Resin/205 Fast Hardener has a pot life of 10-15 minutes at 70°F. It is also recommended in coating applications where natural finishing is desired. Partial cure time at 70°F is 5-7 hours. Slow Hardener is a low-viscosity mixture of polyamines. The 105 Resin/206 Slow Hardener has a pot life of 30-40 minutes at 70°F. It is normally used when extended time is needed for large coating and bonding applications. It is especially well suited to working in warmer climates. Partial cure time is 9 hours at 70°F.

#### WEST EPOXY KITS

<table>
<thead>
<tr>
<th>Kit No.</th>
<th>Kit Size</th>
<th>Part No.</th>
<th>#105 Resin</th>
<th>Hardener</th>
<th>Kit Price</th>
<th>Resin</th>
<th>Fast Hardener</th>
<th>Slow Hardener</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>1.2 Qt</td>
<td>01-08100</td>
<td>32 Oz</td>
<td>7 Oz</td>
<td>$63.00</td>
<td>01-00353</td>
<td>$44.22</td>
<td>$23.75</td>
</tr>
<tr>
<td>A-2</td>
<td>1.2 Qt</td>
<td>01-08200</td>
<td>32 Oz</td>
<td>7 Oz</td>
<td>$63.75</td>
<td>01-00352</td>
<td>$44.22</td>
<td>$23.75</td>
</tr>
<tr>
<td>B-1</td>
<td>1.2 Gal</td>
<td>01-08300</td>
<td>126 Oz</td>
<td>27 Oz</td>
<td>$142.95</td>
<td>01-00354</td>
<td>$100.51</td>
<td>$48.95</td>
</tr>
<tr>
<td>C-1</td>
<td>2.5 Gal</td>
<td>01-08500</td>
<td>43.5 Gal</td>
<td>121 Oz</td>
<td>$540.00</td>
<td>01-00355</td>
<td>$374.00</td>
<td>$167.75</td>
</tr>
<tr>
<td>C-2</td>
<td>2.5 Gal</td>
<td>01-08600</td>
<td>43.5 Gal</td>
<td>121 Oz</td>
<td>$540.00</td>
<td>01-00356</td>
<td>$374.00</td>
<td>$167.75</td>
</tr>
</tbody>
</table>

#### WEST COMPONENTS

ORDER 301/303 PUMP PACKS SEPARATELY.

207 SPECIAL COATING HARDENER

This hardener is used where a very clear, moisture resistant natural wood finish is needed. Can be used to laminate veneers where joint details will be left exposed to sunlight. Improved sun resistance. Pot life: 20 min., cure solid in 24 hours, and maximum strength in 5-9 days.

209 TROPICAL HARDENER

This hardener is used for bonding armies in warm or humid weather or when extended time is needed. Provides twice the working time as 206 hardener. Forms a clear, amber solid when cured. Pot life is 40 minutes, solid state in 24 hours, and maximum strength in 5-9 days.

WEST SYSTEM ACCESSORY PRODUCTS

West System User Manual ................................................. P/N 01-08750 ................................ FREE
West System 101 Handy Repair Pack - Contains 105 resin & 205 hardener plus accessories needed for small repairs .................................................. P/N 01-08760 ............................................. $15.90
West System 501 White Pigment - use this epoxy based pigment to provide a neutral white base for the final coloring system. Mix at ratio of 1 teaspoon to 8 oz. of epoxy. 8 oz. can ............................................. P/N 01-08775 ............................................. $20.19
West System 410 Microlight an excellent filler which provides easy workability for a variety of applications. Easy to sand and cures to a neutral tan color. 1.7 oz ............................................. P/N 01-08780 ............................................. $18.46
4.3 oz ............................................. P/N 01-08785 ............................................. $38.72

PRO-SET 125 RESIN & 229 HARDENER


PRO-SET 135 RESIN & 226/237 HARDENER

135 Resin: LAM-135 Medium Laminating Resin.  

226 Hardener: LAM-226 Medium Laminating Hardener. Medium viscosiy for good wet out of all synthetic composite fabrics and core materials. Medium cure speed hardener provides 2 to 3 hours of working time at 70°F (25°C). A typical laminate will be gelled in 12 to 14 hours.  

237 Hardener: LAM-237 Extra Slow Laminating Hardener. Medium viscosity for good wet out of all synthetic composite fabrics and core materials. Extra Slow cure speed hardener provides 7 to 8 hours of working time at 77°F (25°C). A typical laminate will be gelled in 12 to 14 hours.  

PRO-SET 238 PRO-SET 135 RESIN & 226/237 HARDENERS
ECOPOXY UVPOXY

EcoPoxy UVPoxy Kit is high performance two part system that is commonly used for table tops, bars, wood finishes, see-through clear casting, art work, layup, and other applications requiring a clear, strong coating. It cures to a crystal clear, high build, long lasting, glass like finish, and will not blur or sweat under high humidity conditions. UVPoxy is designed to resist yellowing caused by the sun and other ultra violet light sources.

Specifications:
- Color: Clear (Visual)
- Mix Ratio: 1:1
- Pot Life: 25-30 Minutes

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoPoxy UVPoxy Kit</td>
<td>500 mL / 1 Pt</td>
<td>09-04095</td>
<td>$42.55</td>
</tr>
<tr>
<td>EcoPoxy UVPoxy Kit</td>
<td>1 L / 1 Qt</td>
<td>09-04096</td>
<td>$58.95</td>
</tr>
<tr>
<td>EcoPoxy UVPoxy Kit</td>
<td>2 L / 2 Qt</td>
<td>09-04097</td>
<td>$89.96</td>
</tr>
<tr>
<td>EcoPoxy UVPoxy Kit</td>
<td>4 L / 1 Gal</td>
<td>09-04098</td>
<td>$146.75</td>
</tr>
</tbody>
</table>

ECOPOXY CLEAR

EcoPoxy Clear Kits are ideal for sealing / clear-coating surfaces such as concrete and wood, as well as for wetting fabric that requires a clear, waterproof finish. Odorous and non-toxic. It can be applied indoors or outdoors without masks or ventilation. This self-leveling kit is applies at approximately 10 mils finish thickness. It provides a durable, light reflective floor with excellent adhesion qualities. It’s easily roller applied.

Specifications:
- Color: Clear (Visual)
- Mix Ratio: 2:1
- Pot Life: 15-20 Minutes

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>750 mL / 1.6 Pt</td>
<td>09-04099</td>
<td>$47.95</td>
</tr>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>1.5 L / 1.6 Qt</td>
<td>09-04101</td>
<td>$79.75</td>
</tr>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>3 L / 3.2 Qt</td>
<td>09-04102</td>
<td>$140.75</td>
</tr>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>6 L / 1.6 Gal</td>
<td>09-04103</td>
<td>$244.95</td>
</tr>
</tbody>
</table>

ECOPOXY SLOW

Slow Kit is typically used to fabricate larger, more complicated composite parts. It has a longer 2.5 - 3.5 hour working time, and can be used for vacuum bagging larger parts before the resin has gelled.* It can also be used for and for repairs or additions to a primary structure. It is compatible with most fabrication techniques, such as lay-up and filament winding. It features excellent wet-out and chemical adhesion of fiberglass, carbon and aramid fibers.

Specifications:
- Color: Yellow (Visual)
- Mix Ratio: 2:1
- Pot Life: 2.5-3.5 hours

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoPoxy Slow Kit</td>
<td>3 L / 3.2 Qt</td>
<td>09-04109</td>
<td>$133.75</td>
</tr>
<tr>
<td>EcoPoxy Slow Kit</td>
<td>6 L / 1.6 Gal</td>
<td>09-04110</td>
<td>$227.95</td>
</tr>
</tbody>
</table>

ECOPOXY MEDIUM

Our Medium Kit is typically used to fabricate high performance composite parts. It has a 20 minute working time and can be used for all sizes of parts, and for repairs or additions to a primary structure. The vacuum bagging technique can be used for smaller parts*. It is compatible with most fabrication techniques, such as lay-up and filament winding. It features excellent wet-out and chemical adhesion of fiberglass, carbon and aramid fibers.

Specifications:
- Color: Yellow (Visual)
- Mix Ratio: 4:1
- Pot Life: 15-20 Minutes

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoPoxy Medium Kit</td>
<td>1.25 L / 1.33 Qt</td>
<td>09-04108</td>
<td>$62.75</td>
</tr>
<tr>
<td>EcoPoxy Medium Kit</td>
<td>2.5 L / 2.65 Qt</td>
<td>09-04109</td>
<td>$109.85</td>
</tr>
<tr>
<td>EcoPoxy Medium Kit</td>
<td>5 L / 1.32 Gal</td>
<td>09-04110</td>
<td>$184.90</td>
</tr>
</tbody>
</table>

ECOPOXY FAST

Our Fast Kit is most commonly used as an adhesive or in an injection box for putrulsion. It has a pot time of just 2-3 minutes, and features a high-strength, waterproof bond to a variety of materials including wood, fiberglass, metal, glass, tile, and more.

Specifications:
- Color: Yellow (Visual)
- Mix Ratio: 2:1
- Pot Life: 2.5-3 Minutes

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoPoxy Fast Kit</td>
<td>750 mL / 1.6 Pt</td>
<td>09-04113</td>
<td>$47.50</td>
</tr>
<tr>
<td>EcoPoxy Fast Kit</td>
<td>1.5 L / 1.6 Qt</td>
<td>09-04114</td>
<td>$83.75</td>
</tr>
<tr>
<td>EcoPoxy Fast Kit</td>
<td>3 L / 3.2 Qt</td>
<td>09-04115</td>
<td>$129.56</td>
</tr>
<tr>
<td>EcoPoxy Fast Kit</td>
<td>6 L / 1.6 Gal</td>
<td>09-04116</td>
<td>$215.96</td>
</tr>
</tbody>
</table>

ECOPOXY LIQUID PLASTIC KIT

The Liquid Plastic kit cures to a clear, UV resistant, plastic-like finish that resists scratching and yellowing. This product will not blur or sweat under high humidity conditions. EcoPoxy® is a Plant based, 100% solid, waterproof, non-toxic, non-conductive, epoxy system that is Certified “GREEN”. P/N 09-04567 $43.52

ECOPOXY ECOTROWEL MULTI-PACKS

EcoTrowel is a high performance epoxy filler and profiling product formulated for surface repair and preparation. It is easy to mix and spread, and has a peanut butter like consistency (contains no peanuts!). EcoTrowel is lightweight and suitable for an infinite variety of composite, architectural, industrial and art-related applications. It can be applied to wood, concrete - even canvas - to a thickness of 1/2" without sagging or slumping. It can be easily sanded, shaped, drilled, tapped, machined, routed & remains durable for life.

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>100g</td>
<td>09-05353</td>
<td>$47.95</td>
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<tr>
<td>EcoTrowel Multi-Packs</td>
<td>25g</td>
<td>09-05354</td>
<td>$96.85</td>
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</tbody>
</table>

ECOPOXY GLOPOXY KITS

GloPoxy is a glow-in-the-dark epoxy made with high-grade photo luminescents ingredients to maximize glow brightness and duration. The formula absorbs bright light as energy and releases the absorbed energy when placed in the dark. This charge cycle can be performed endlessly and with any light source. GloPoxy is formulated to glow-in-the-dark for hours and contains no fillers or impurities to interfere with the glow. GloPoxy is durable, UV stable, and chemical, water & abrasion resistant. It can be used indoor and outdoor, and can be applied to virtually any surface. It’s a perfect solution for both safety and novelty applications.

Specifications:
- Color: Blue (Visual)
- Mix Ratio: 2:1
- Pot Life: 2-3 Hours

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>60ml</td>
<td>09-05348</td>
<td>$40.50</td>
</tr>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>120ml</td>
<td>09-05349</td>
<td>$82.76</td>
</tr>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>240ml</td>
<td>09-05351</td>
<td>$212.36</td>
</tr>
</tbody>
</table>

ECOPOXY PIGMENT COLOR SETS

Add some color to your epoxies. These pigments are used to tint epoxy resins used as coatings, paints, gelcoats, laminating, casting or self-leveling resins. EcoPoxy epoxy concentrated pigment consists of pigments suspended in epoxy resin which allows them to blend thoroughly into epoxy resins to make very uniform colors. They are used to tint epoxy resins used as coatings, paints, gelcoats, laminating, casting or self-leveling resins. The high tinting properties enable the use of little quantities of pigment. The quantity to be used depends on the color chosen as some colors cover better than others (yellow for example need higher quantities than other colors). ECOPOXY color pigments mix easily.

<table>
<thead>
<tr>
<th>Description</th>
<th>Color</th>
<th>Part No.</th>
<th>Pint</th>
<th>Price</th>
<th>Part No.</th>
<th>Quart</th>
<th>Price</th>
<th>Part No.</th>
<th>Gallon</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>Blue</td>
<td>09-01666</td>
<td>$43.50</td>
<td>$43.52</td>
<td>09-01671</td>
<td>$2.81</td>
<td>$2.81</td>
<td>09-01675</td>
<td>$114.75</td>
<td>$43.52</td>
</tr>
<tr>
<td>EcoPoxy Clear Kit</td>
<td>Red</td>
<td>09-01673</td>
<td>$67.75</td>
<td>$68.75</td>
<td>09-01674</td>
<td>$8.75</td>
<td>$8.75</td>
<td>09-01676</td>
<td>$86.75</td>
<td>$68.75</td>
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<tr>
<td>EcoPoxy Clear Kit</td>
<td>Green</td>
<td>09-01678</td>
<td>$43.50</td>
<td>$43.52</td>
<td>09-01680</td>
<td>$8.80</td>
<td>$8.80</td>
<td>09-01681</td>
<td>$130.80</td>
<td>$43.52</td>
</tr>
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V-NOTCHED EPOXY SPREADER

The perfect tool for evenly spreading EcoPoxy on large, flat surfaces. This tool gives you 3 V-notched spreading options and a flat side for scraping and cleaning. P/N 09-05355 $1.35

POLYESTER GEL COATS

These polyester gel coats can be used as the surface of new fiberglass parts layed up in molds or used in the repair of gel coat surfaces on fiberglass parts. On surface repairs, the gel coat must be sealed to fully cure. PVA can be used to seal the gel coat.

Specifications:
- Color: Black
- V-Notch
- Pint: $21.65
- Quart: $71.75
- Gallon: $215.96

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Prices Subject To Change Without Notice
### FOAM

#### STYROFOAM – SMALL CELL

<table>
<thead>
<tr>
<th>Foam Type</th>
<th>Density</th>
<th>Thickness</th>
<th>Sheet Size</th>
<th>Part No.</th>
<th>Price/Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Styrofoam</td>
<td>2 Lb/Ft²</td>
<td>1/2&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-09400</td>
<td>$10.90</td>
</tr>
<tr>
<td>Blue Small Cell</td>
<td></td>
<td>2/3&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-09650</td>
<td>$21.80</td>
</tr>
<tr>
<td>(Blue)</td>
<td></td>
<td>1&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-09600</td>
<td>$24.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-1/2&quot;</td>
<td>24&quot; x 96&quot;</td>
<td>01-09800</td>
<td>$33.95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-10000</td>
<td>$42.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>24&quot; x 96&quot;</td>
<td>01-10100</td>
<td>$84.85</td>
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<tr>
<td></td>
<td></td>
<td>4&quot;</td>
<td>24&quot; x 96&quot;</td>
<td>01-10200</td>
<td>$66.75</td>
</tr>
</tbody>
</table>

#### POLYSTYRENE – LARGE CELL

This blue large cell expanded foam is 2 lb. per cubic feet density and cuts easily using a hot wire to airfoil shapes. Compatible with most adhesives, but should be used only with epoxies, not polyester resins. Will dissolve in fuels and solvents. Cuts smoothly with hot wire and airfoil shapes. Used in the construction of VariEze, Long-EZ, Cozy, and other composite aircraft.

<table>
<thead>
<tr>
<th>Foam Type</th>
<th>Density</th>
<th>Thickness</th>
<th>Sheet Size</th>
<th>Part No.</th>
<th>Price/Sheet</th>
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</thead>
<tbody>
<tr>
<td>Styrofoam FB</td>
<td>2 Lb/Ft²</td>
<td>8&quot;</td>
<td>16&quot; x 4&quot;</td>
<td>01-37600</td>
<td>$10.50</td>
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<tr>
<td>Blue Large Cell</td>
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<td>8&quot;</td>
<td>16&quot; x 25&quot;</td>
<td>01-01166</td>
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<td></td>
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<td>8&quot;</td>
<td>16&quot; x 42&quot;</td>
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<td>$96.75</td>
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<tr>
<td></td>
<td></td>
<td>8&quot;</td>
<td>16&quot; x 67&quot;</td>
<td>01-10800</td>
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<td>8&quot;</td>
<td>16&quot; x 109&quot;</td>
<td>01-10900</td>
<td>$251.95</td>
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</table>

#### URETHANE –

This foam is easily contoured using a large knife, and then sands well to final form. Excellent for producing the fuselage, wing tips, and other curved parts. It is fuel resistant and can be used for fuel cells. Compatible with most adhesives. Do not hot wire urethane foam. Available in tan or green.

<table>
<thead>
<tr>
<th>Foam Type</th>
<th>Density</th>
<th>Thickness</th>
<th>Sheet Size</th>
<th>Part No.</th>
<th>Price/Sheet</th>
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</thead>
<tbody>
<tr>
<td>Urethane (Tan)</td>
<td>2 Lb/Ft³</td>
<td>1/2&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-11200</td>
<td>$12.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/4&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-11400</td>
<td>$22.85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-11500</td>
<td>$22.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-11900</td>
<td>$43.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>24&quot; x 96&quot;</td>
<td>01-12000</td>
<td>$84.95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>24&quot; x 96&quot;</td>
<td>01-12100</td>
<td>$143.75</td>
</tr>
</tbody>
</table>

#### DIVINYCELL FOAM

DIVINYCELL – A closed cell medium to high density foam which has high compression strength, durability, and excellent fire resistance. Can be vacuum formed to compound shapes and can be bent using heat. Compatible with polyester, vinylester, and epoxy resins.

<table>
<thead>
<tr>
<th>Foam Type</th>
<th>Density</th>
<th>Thickness</th>
<th>Sheet Size</th>
<th>Part No.</th>
<th>Price/Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divinycell PVC</td>
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<td>32&quot; x 48&quot;</td>
<td>01-00158</td>
<td>$20.80</td>
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<tr>
<td>(Tan) Type H45</td>
<td></td>
<td>1/4&quot;</td>
<td>32&quot; x 48&quot;</td>
<td>01-12300</td>
<td>$21.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/8&quot;</td>
<td>32&quot; x 48&quot;</td>
<td>01-12400</td>
<td>$41.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5/8&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-12500</td>
<td>$74.65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/4&quot;</td>
<td>15&quot; x 48&quot;</td>
<td>01-12600</td>
<td>$17.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/4&quot;</td>
<td>32&quot; x 48&quot;</td>
<td>01-12700</td>
<td>$68.75</td>
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<td></td>
<td></td>
<td>3/4&quot;</td>
<td>32&quot; x 24&quot;</td>
<td>01-11917</td>
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<tr>
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<td>32&quot; x 48&quot;</td>
<td>01-12800</td>
<td>$96.75</td>
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<tr>
<td></td>
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<td>32&quot; x 48&quot;</td>
<td>01-12900</td>
<td>$144.75</td>
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<td>48&quot; x 96&quot;</td>
<td>01-12920</td>
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<td></td>
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<td>24&quot; x 48&quot;</td>
<td>01-12910</td>
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<td>48&quot; x 96&quot;</td>
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<td>24&quot; x 48&quot;</td>
<td>01-12930</td>
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<tr>
<td>Divinycell PVC</td>
<td>6 Lb/Ft³</td>
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<tr>
<td>(Tan) Type H100</td>
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<td>01-13100</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>10&quot; x 12&quot;</td>
<td>01-13200</td>
<td>$22.85</td>
</tr>
</tbody>
</table>

#### LAST-A-FOAM

LAST-A-FOAM – Rigid. Polyether Polyurethane foam with fine closed-cell structure, light cream-yellow color. LAST-A-FOAM® is wonderfully versatile for sandwich-core applications. It cuts and shapes easily with common woodworking tools, and bonds to itself and other materials with most epoxy, polyester, or urethane-type adhesives. LAST-A-FOAM® is unaffected by water, fuels and most solvents, and paint finishes are easily applied. It is frequently used in regular molds after the gel-coat and first two layers of glass are installed; the LAST-A-FOAM® is added and another layer of glass applied for strength, light weight sandwich.

<table>
<thead>
<tr>
<th>Foam Type</th>
<th>Density</th>
<th>Thickness</th>
<th>Sheet Size</th>
<th>Part No.</th>
<th>Price/Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last-A-Foam</td>
<td>4.5 Lb/Cu. Ft.</td>
<td>10mm</td>
<td>24&quot; x 96&quot;</td>
<td>01-13400</td>
<td>$69.90</td>
</tr>
<tr>
<td>Urethane/Polyester (Yellow)</td>
<td></td>
<td>1/4&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-13550</td>
<td>$18.75</td>
</tr>
<tr>
<td></td>
<td>3/8&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-13800</td>
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<td></td>
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<td></td>
<td>1/2&quot;</td>
<td>24&quot; x 96&quot;</td>
<td>01-13700</td>
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<td>1/2&quot;</td>
<td>24&quot; x 96&quot;</td>
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<td>3/4&quot;</td>
<td>24&quot; x 48&quot;</td>
<td>01-01190</td>
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<td>3/4&quot;</td>
<td>24&quot; x 48&quot;</td>
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<td>24&quot; x 48&quot;</td>
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<td>1&quot;</td>
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<td>1&quot;</td>
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<td>01-01048</td>
<td>$42.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 Lb/Cu. Ft.</td>
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<td>12&quot; x 48&quot;</td>
<td>01-14400</td>
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<td>12&quot; x 48&quot;</td>
<td>01-14500</td>
<td>$43.50</td>
<td></td>
</tr>
</tbody>
</table>

CAUTION

DO NOT USE HOT WIRE!

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VACUUM BAGGING TECHNIQUES BOOK - P/N 01-14803

VACUUM BAGGING FILM - #7400 film is a high grade nylon 6 film. It is transparent green in color and heat stabilized for long term, 320°C cures. Film is soft & pliable and ideal for high temperature composites, metalbond, and any function requiring heat & pressure. 54” Width P/N 01-14805 $1.60/Yd. 60” Width P/N 01-14603 $2.76/Yd. 72” Width P/N 01-14604 $2.25/Yd.

4.5 OZ. BREATH/BLEEDER PLY - 4 oz./sq. yd. (140 grams/sq. meter) non-woven polyester breather system used for even volatile evacuation from vacuum bags. It can be used at pressures up to 85 psi, volatile evacuation up to 152°C (305°F). Multi-directional conformability makes it a very efficient breather. This breather does not contain any binders which could seal the air flow. Width: 60”. Sold per yard P/N 01-14810 $1.95/Lin.Yd.

STRETCH VACUUM BAG FILM 60” - Stretchable urethane film with incision for release. Can be reused up to 500°F. 1.52m x 62m (5’ x 200’). Maximum temperature use 250°F (122°C). 120” wide (3.04m). Perfect for compaction. Not affected by low humidity, always stays soft with no cracking. Can be heat sealed to custom shapes. Width: 60” P/N 01-14820 $8.95/Lin.Yd.

10 OZ. BREATH/BLEEDER PLY - #3100 is a 10 oz./sq. yd. nonwoven polyester breather system used for even volatile evacuation from vacuum bags. It can be used at pressures up to 200 PSI (13.8 bars). Multi-directional conformability makes it a very efficient breather. This breather does not contain any binders which could seal-off of air flow. Width: 60”. Sold per yard P/N 01-14815 $4.90/Lin.Yd.

2 OZ. NYLON RELEASE PLY - #5201 SRB is a smooth nylon fabric which has been scoured and heat set so that it is contaminate free and will not shrink during the laminate curing cycle. It is then coated with a special release blend. The peel ply may be used for composite manufacturing and metal bonding, but is not recommended for use with resin systems containing phenolic. Thickness: .005”. Color: Blue. Width: 60”. P/N 01-14820 $8.95/Lin.Yd.

3 OZ. POLYESTER RELEASE PLY - #5252SRB is a medium coarse weave polyester peel ply that leaves a surface with a rougher texture. It has been scoured and heat set to eliminate shrinkage during use and then coated with a special release blend. It can be used on all composite and metal bonding systems and is not affected by resin systems containing phenolic. #5252 provides protection of the laminate surface between primary & secondary processing. Thickness: .006”. Color: Blue. Width: 60”. P/N 01-14925 $10.50/Lin.Yd.

PORCUPINE ROLLER - E2760 - E 2760 is a red tinted, co-polymer, high elongation, low temperature release film with excellent conformability. An excellent release film for use on highly contoured parts for film sealants, pressure sensitive adhesives, and for use in the curing temperature range where release films are required. The colored film provides for easy identification and removal from parts. Color: Red Width: 37.5” 1-1/4” x 100 yards P/N 01-14835 $6.55/Lin.Yd.

2410 RELEASE FILM - Release Film - 2410 material is the most economical release film available that can be used at temperatures over 350°F. The film has handling qualities similar to the lowest priced halogenated film. 54” wide .002” thick. Blue. P/N 01-01427 $3.40/roll

NON-POROUS TFELOM COATED RELEASE FABRIC - #7039 is a light weight extra smooth TFE coated glass fabric. Will leave little or no fabric imprint on most composite lay-ups. It is used extensively in the aerospace industry for parts up to 250°F. E 2760 offers good release properties in the curing temperature range where release films are required. There is no requirement for bleeding or breathing resin or volatiles from the composite lay-up. It is mainly used for protecting caul sheets from resin contamination and as a release media on tool surfaces. Thickness:.003”. Color: Brown. Width: 37.5” P/N 01-14840 $14.80/Lin.Yd.

FLASH TAPE - #6045-02 is a polyester backing film with a fully cured silicone adhesive. This tape is very tough and ideal for resin or adhesive flash removal. Color: Blue Thickness: .002”. Roll size: 1” wide x 72 yds. P/N 01-14845 $16.90/roll

400°F RESISTANT SEALANT TAPE - #4401 is a grey vacuum bag sealant tape that removes cleanly from the tool surface at the completion of the cure cycle. It can be used at any temperature up to 400°F. It can be used on any tool surface now in use and has been a standard of the industry for many years. It has high initial tack and is very easy to tear. It can be used to prevent leaks between the bag and tool. It works well for composites, metalbond, or any function that requires temperature and/or pressure up to 400°F. Color: Grey. Size: 1/8” x 1/2” x 25 ft. P/N 01-14850 $7.85/roll

VACUUM VALVE - TWO PIECE - #8112 is a two-piece vacuum valve which requires one quarter turn to lock in place. Service temperature to 500°F. This valve is an industry standard. The base is anodized and is red in color. Inside Diameter: 1/4” standard. Outside Diameter: 1/2” standard. P/N 01-14855 $28.50/ea.

OVEN VACUUM HOSE - #8020 is a thick walled, flexible silicone hose. It is normally used for debubling and oven curing using vacuum only. Furnished in standard 10 foot lengths. Other lengths available on special order. Hose size: 1/4” ID. P/N 01-14860 $109.95/ea.

HIGH TEMPERATURE QUICK DISCONNECT SET - #5842 is a two-piece quick disconnect male and female for use to 500°F at pressures up to 200 psi (13.8 bars). Sold as a set of male & female connectors. P/N 01-14865 $24.85/set

SHRINK TAPE - #9010 is an oriented polyester film designed to shrink as the laminate approaches cure temperature. The applied pressure is maintained during cure. It is used extensively in the aerospace industry for parts up to 400°F. The assembly makes conventional bagging too labor-intensive. If excess resin needs to be released during cure, perforating the shrink tape after the assembly has been wrapped with a porcupine roller will reduce the resin content as well as permitting air and volatiles to escape. Thickness: .002”. Width: 1-1/4”. Roll length: 100 yds P/N 01-14870 $17.85/roll

GREENFLOW 75 - Greenflow 75 is designed to efficiently distribute resin with little waste due to the low profile, tight construction. Greenflow 75 can be used with polyester vinyl ester and epoxy resins. Color: Green. Thickness: .085”. (3.89mm) Width: 37.5” (952mm). Maximum temperature use 250°F (122°C). 120” wide (3.04m). Configuration of Net: Rhombic. P/N 01-1080 $13.40/Lin.Yd.

SEALANT TAPE ROLLER - #9050 is a plastic roller designed to assist in applying sealant tape between the bag and the tool. It assists the operator in applying maximum pressure to make a leak-proof, smooth seal. The unit is lightweight and easy to use, and the plastic roller helps prevent damage to the film. Roller width: 1-3/16”. Roller Diameter: 1-3/8”. P/N 01-14875 $24.50/ea.

PORCUPINE ROLLER - #9060 is a steel roller with a wood handle designed to perforate films to allow air, volatiles, and resin to flow through the film. The amount of resin flow can be controlled by the depth of the pin penetration. Also useful on foam to give the bonding adhesive a better grip on the foam surface. P/N 01-14880 $79.75/ea.

VACUUM GAUGE - A dial faced vacuum gauge capable of displaying vacuum from 0 to -50 Hg. It is 1/2” in diameter and can be used on the vacuum pump line, holding tank, or with a vacuum valve to determine vacuum in specific areas of a bagged assembly. Fitting size: 1/4” NPT. P/N 01-14885 $17.50/ea.

STANDARD MODEL VACUUM PUMP/AIR COMPRESSOR - Thomas Oil-less WOB-L Piston Compressor / Vacuum Pump. P/N 01-01569 $392.00

VACUUM PUMP KIT - Includes vacuum pump, gauge, valve, fittings, and hose. P/N 01-00164 $458.95

HIGH VOLUME AIR COMPRESSOR / VACUUM PUMP - Unit features rugged flexible piston cup and shafted-bole motor with high-torque start windings. Corrosion-resistant sandwich valve stops fine particles from lodging on valve seats. Aluminum cylinder heads and pistons. P/N 01-01570 $1,214.00

VACUUM RELIEF VALVE - P/N 52763 $17.75

BAGGING SUPPLIES STARTER KIT - Includes 10 yards of Vacuum Film #7400, 10 yards of 6 oz. Bleeder Bleder #81 $1.50 per foot, rejectable 4 oz. Non-woven Polyester 25 yd roll, 10 yards Dacron Fabric 1.8oz.x 60”, 10 yards 60” x .001 Perforated Release Sheet. P/N 01-14894 $126.95

ECONOMY VACUUM GENERATOR - A low cost solution to the problem of generating a vacuum for those who already own an air compressor. The generator will create 27” of Hg vacuum/pressure when coupled in-line to an air compressor capable of producing 2.2 cfm. Larger air compressors are advisable for continuous use applications. Suitable for parts up to 80 ft2. P/N 12-11148 $208.95
AIRCRAFT PLASTIC REPAIR – FILLERS

ECONOMICAL MULTI-PURPOSE SEALANT TAPE
AT-200™ is an economical multi-purpose sealant tape with high tack. It removes easily from metal or composite tools. Suitable for cure applications up to 400°F (204°C).
Specifications: • Color: Yellow • Base material: Synthetic rubber • Maximum use temperature: 400°F (204°C) • Shelf life: 12 months from date of manufacture • Storage conditions: Tape must be stored flat in original packaging at 72°F (22°C) / Do not refrigerate • Dimensions: 1/8 inch x 1/2 inch x 25 feet (3 mm x 12 mm x 7.5 m)
Benefits: • Economical vacuum tape reduces the cost of vacuum bagging. • Multi-purpose tape can be used on metal and composite tooling. • Easy clean up reduces cost of tool cleaning. P/N 01-01602 ............$6.65

1000-A SUPER CLEAN PLASTIC CLEANER (19 FL.OZ.)
Before doing any sort of plastic repair, use Super Clean plastic cleaner to maximize the durability of your repair. Super Clean removes mold release agents, wax, grease, silicone, tar, bugs, sealers and other contaminants from painted or unpainted plastic or metal surfaces. It’s simple to use, just spray it on and wipe it off with a clean, lint-free cloth. P/N 01-00533 ............$15.50

2020-T SMC HARD-SET FILLER (2-OZ. TUBES)
SMC Hard-set Filler is a 2-part epoxy system that is very rigid when fully cured. It works on ABS, SMC, fiberglass, polycarbonate and on any other repair application that requires a rigid, high impact resistant repair material. It has a working time of 3 to 4 minutes and is ready to sand in 15 minutes. P/N 01-00534 ............$24.50

2045W STAINLESS STEEL REINFORCING MESH (50 SQ.IN.-5”X10”)
Reinforcing Wire Mesh is designed to be used to reinforce any repair made with an airless plastic welder. We recommend that the mesh be used to when a tear goes to the edge of the plastic. Since it is stainless steel, it is 5 times stronger than aluminum wire screen and is virtually impervious to oxidation under normal conditions. You can also use the mesh to fabricate tabs, fill holes and provide reinforcement in any meltable plastic. P/N 01-00536 ............$6.50

POLY FILLER
POLY FILLER HT is a two component polyester filler paste system that provides the user both unique ease of handling and high performance characteristics when cured. POLY FILLER HT is formulated to provide a smooth creamy handling consistency and a dry tack-free surface when cured. A significant advantage of POLY FILLER HT over other materials of this type is its very low cured shrinkage. This feature allows faster application and repairs than with other filler pastes, which usually must be applied in several layers because of their high shrink age rate! The creamy texture of POLY FILLER HT allows for easier applying and spreading. POLY FILLER HT can be troweled to a feather edge without rolling or skipping. It can be used to fill tiny pin holes with out lifting. The dry, tack-free nature of the cured POLY FILLER HT paste provides for easier working with tools and prevents sand paper from becoming gummy. Once applied and cured, POLY FILLER HT will bond quite well to most surfaces such as aluminum, copper, fiber glass, epoxy, steel, plaster, graphite and kevlar laminates. It will also accept all types of enamel, epoxy, lacquer and paint stains as a surface finish. POLY FILLER HT utilizes an excel lent high temperature resin base, and therefore the cured paste can be subjected to service temperatures in excess of 400°F.
Black Quart .................. P/N 09-04569 .......... $29.50
Black Gallon .................. P/N 09-04571 .......... $87.95
Gray Quartz .................. P/N 09-04570 .......... $29.50
Gray Gallon .................. P/N 09-04572 .......... $99.75

PLASTIXX REPAIR KITS
Plastixx repairs virtually any rigid plastic and works exceptionally well on ABS. Repair cracks, fill gaps, reinforce repairs, rebuild broken tabs, fix stripped threads, and more. Plastixx’s most unique feature is the Flex-Mold molding band that allows you to create a mold and cast missing pieces. No other plastic repair is more versatile. The 30 gram kits are enough to complete approximately 24” of cracked plastic. The large kits will do about 24 feet.
Kit Includes: 253X Plastixx Powder 30G, 2520 Plastixx Liquid 50ML, 2542 Dropper Bottle Assembly, 2543 Power Application Cup, 2548 Transfer Pipette, 2550 Applicator Needle Qty: 2, 2560 Flexmold Molding Bar 10CC.
P/N 01-00545 ............$96.75

WEST SYSTEM 406 SILICA FILLER
406 Colloidal Silica is a thickening additive used to control the viscosity of West System Epoxies and prevent epoxy runoff in vertical and overhead joints. 406 is a very strong filler that creates a smooth mixture, ideal for general bonding and filleting. It is also the most versatile filler. Often used in combination with other fillers, it can be used to improve strength, abrasion resistance, and consistency of fairing compounds, resulting in a tougher, smoother surface. Off-white. 5.5 ounces......... P/N 406-7 ............$30.56

WEST SYSTEMS FIBERGLASS REPAIR KITS
Here is everything you need to complete small repairs around the boat, shop or home.
contains: • #101 Handy Repair Pack - Convenient kit contains enough material to complete one repair. • Two 16g. packets of #105 Resin • Two 3.2g. packets of #205 Hardener • 3.5g. High Density Filler • 1 application brush • Ground Shipping Only • This kit is large enough to tackle a multitude of repair jobs. P/N 01-08760 ............$17.19

2303-3 INSTA-WELD ACTIVATOR (2FL.OZ. W/SPRAYER)
This quick spray Activator causes instant curing of all Insta-Weld adhesives and other cyanoacrylate adhesives. The activator may be used before or after the adhesive is applied. This 2 fl. oz. (59 mL) plastic bottle comes with a sprayer. P/N 01-00550 ............$12.50

CS100 CLEAN SHEETS
Clean Sheets are great to have around the shop. They allow you to keep your epoxy mix clean and smooth while saving time by always having a clean surface to mix on. No more cutting cardboard to mix epoxy. 100 sheets per board. P/N 01-00551 ............$32.50

2043-U UNI-CLOTH FIBERGLASS CLOTH (9 SQ.FT.)
Uni-Cloth is a quality fiberglass cloth that is well suited for reinforcing plastic repairs as well as any other application requiring fiberglass reinforcement. P/N 01-00535 ............$17.50

Plastics Repair Instructional Book .......... P/N 01-00554 ............$29.60

WWW.AIRCRAFTSPRUCE.COM
FILLERS

GLASS BUBBLES

These bubbles are actually hollow glass spheres. Because the high-quality glass is very crush resistant, the foam is much stronger, stiffer and water-resistant than any foam made by chemical foaming. These foams displace 4-8 times their weight in most resins and improve the handling characteristics of the base resin. They have a low bulk density and are nontoxic. Mix resin and hardener as directed, then fold in the glass bubbles. Upon cure, a strong, low-density product results which is easy to sand and file. May be shaped to form compound angles and curves. The term “micro” was applied to the mixture of microspheres and epoxy early in the development of composite structures. Although microspheres have been replaced by glass fibers, the word “micro” is still commonly used to reference the mixture. “Micro” is used to fill voids and low areas, to glue foam blocks together and as a bond between foams and glass cloth. Micro is used in three consistencies - (1) a “slurry” which is a one-to-one by volume mix of epoxy and glass bubbles, (2) “wet micro” which is about two to four parts glass bubbles by volume to one part epoxy, and (3) “dry micro” which is a mix of epoxy with enough glass bubbles to obtain a paste which will not sag or run (about five parts to one by volume). In all instances glass bubbles are added to completely mixed epoxy resin and hardener. Wet micro is used to join foam blocks and is much thicker than slurry (it has the consistency of honey) but can be brushed. Dry micro is used to fill low spots and voids and is mixed so that it is a dry paste and will not sag. Apply with a putty knife. Never use micro between glass layers.

CAUTION - When mixing epoxy and glass bubbles, wear a dust mask and keep your face away from the balloons that may float up into the air. Although glass balloons are inert, they can lodge in your eyes or in your lungs and cause problems. Handle with care.

One Pound Bag (Approx. 1 Gal.) P/N 01-14600 $9.25

Five Pound Bag (Approx. 5 Gal.) P/N 01-14700 $46.00

DISPOSABLE ICING BAGS

These 12” disposable icing bags are ideal for applying beads of any size of micro epoxy or floc epoxy to all surfaces. Great for close-outs and are real time savers. Simply fill, cut end to desired bead size and squeeze. Never breaks down from epoxy. Sold in packs of 100 icy bags. Pack of 100 bags P/N 01-14710 $13.50

CAB-O-SIL

Cab-O-Sil is a fumed lightweight silica thickeners used to reduce the flow of epoxies on vertical surfaces, as well as filling pinholes with its smooth texture.

1 gallon bag P/N 01-04711 $14.50

FLOCKED COTTON FIBER

A structural resin filler. The mixture of cotton fiber and epoxy is referred to as “flox”. The mix is used in structural joints and in areas where a very hard, durable buildup is required. Flox is mixed in much the same way as dry micro but only about two parts floc to one part epoxy is required. Mix in just enough floc to make the mixture stand up. If “wet floc” is called out, mix it so it will sag or run. Floc is often used to reinforce a sharp corner. Paint a light coat of pure epoxy inside the corner, trowel floc in to make a triangular support. The flox corner is done just before one glass surface is applied for a wet bond to one surface.

1 Lb. Bag P/N 01-14800 $4.45

5 Lb. Bag P/N 01-14900 $22.00

MILLED GLASS FIBERS

As the name implies, this material is made by milling fiberglass into a very thin consistency. This material is used in preparing a structural filler. This material is used in fillers that require structural integrity. Milled fiber fillers have higher strength than cotton floc but have fine particles of fiberglass that can penetrate the skin.

1 Lb. Bag P/N 01-14780 $4.30

PELOUZE DYM O DIGITAL SCALE


P/N 12-01580 $44.50

PUTTY FLEX FILLER

Urethane Supply Company’s 1047 Putty Flex is a polyester finishing glaze that provides superior adhesion with excellent flexibility on plastics. Putty Flex produces excellent feather edge results on plastic, metal, SMC, fiberglass, cured primer and paint. Use to fill pinholes, dings, scrapes, sanding scratches and more! Putty Flex sands easily and resists clogging sandpaper.

P/N 01-00961 $28.95

DISPOSABLE ICING BAGS

These 12” disposable icing bags are ideal for applying beads of any size of micro epoxy or floc epoxy to all surfaces. Great for close-outs and are real time savers. Simply fill, cut end to desired bead size and squeeze. Never breaks down from epoxy. Sold in packs of 100 icy bags. Pack of 100 bags P/N 01-14710 $13.50

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P/N 01-00961 $28.95

ECONOMY DIGITAL SCALE

LCD display that shows ounces, pounds or grams. “Tare” feature lets you “zero-out” container's weight. Sealed buttons prevent damage from spills. Maximum capacity of 176 ounces (11 lbs. or 5000 grams) Automatic 5000 grams) 40 second shutoff saves batteries. Not for commercial use. Uses four AA batteries, not included. Overall dimensions: 9-1/2" L x 6-3/4" W x 1-1/2" H

P/N 12-02585 $34.75

3M™ #77 SPRAY ADHESIVE

This aerosol spray adhesive works well to laminate styrofoam sheets together. Laminations cut well with a hot wire. Net wt. 15.75 oz.

24 fl. oz. Aerosol Spray Can P/N 09-28330 $16.55

HI BUILD POLYESTER

SANDING PRIMERS

• Quick Build Primer • Quickly fills uneven surfaces, and major imperfections • Easy sanding prep for surface primer, top coats • Low VOC product • Perfect Primer for prestec topcoats or any other surface coatings desired • Fairly Hi-Build to 120mil

Requires Catalyst P/N 01-01119.

DYNALITE

A formulation of polyester resin, talcs and Microspheres used as a lightweight filler on metal and fiberglass. Works easily, sands faster. Only 7.5 lbs. per gallon as compared to 12 lbs. per gallon for conventional fillers.

494 Gallon P/N 01-00368 $28.99

452 Quart P/N 01-01072 $15.50

FIX-IT

A universal repair compound. It is excellent for rebuilding or fabricating parts and as an all purpose adhesive for wood, metal, ceramic, glass, and many plastics. Fix-it can be tapped or drilled, sanded, filed or painted. Patch holes and cracks and seals leaks. Sets rock hard overnight. Fix-It Metal is the same as standard Fix-it except it is loaded with aluminum metal to match the strength, weight, and use for each project. Fix-It is nontoxic, non-hazardous, and impervious to fuels and liquids.

Fix-It 1/4 Lb kit P/N 01-14770 $12.95

Fix-It 1 Lb kit P/N 01-14775 $24.95

Fix-It Metal 1/4 Lb kit P/N 01-14790 $12.95

Fix-It Metal 1 Lb kit P/N 01-14795 $24.95
**FILLERS – PRIMERS**

**SUPERFIL BY POLY-FIBER**

1 Quart Kit (20oz. Resin/10oz. Hldr)........P/N 09-28250........$35.50
3 Gal Kit (2 gal.Resin/1 gal. Hldr)........P/N 09-28250........$299.50

**TR MOLD RELEASE SEALER & WAXES**
On new or reconditioned tooling, suggest use of the sealer glaze TR-301 prior to waxing for added release, gloss and mold life. Apply wax with sponge applicator in thin even circular motion to the mold surface. Allow to haze dry (approx. 5-10 min) and polish wipe to gloss finish. For new or reconditioned molds apply a minimum of 6 coats of paste wax, waiting approx. 30-60 minutes between applications for the wax to harden after the polish wipe.

**FILL BOND PUTTY**
Fill Bond aerospace putty from Sherwin-Williams Aerospace Coatings has been created specifically for aerospace use. Designed to fill rivets, seams and small spot-repair areas on the exterior of aircraft fuselage and wings, this high-build body filler is now available in a convenient epoxy version. Fill Bond putty is extremely flexible, offers direct-to-metal adhesion (with properly pretreated aluminum), provides excellent spread ability and offers a long, workable pot life to give users the amount of time to apply material on a variety of aircraft surfaces, including aluminum and composites. The epoxy putty dries quickly for a fast sand - in just two to six hours. A specially-designed Fill Bond dispensing gun enables users to apply putty exactly where it is needed without requiring additional tools. There’s minimal waste following application. Users apply only as much product as they need and then can put the cap back on the convenient cartridge containers for later user, saving on material and disposal costs.

Fill Bond Cartridge 750ML........P/N 01-01124........$147.75
Fill Bond Cartridge 375ML........P/N 01-01125........$118.75
Manual Dispensing Gun 370ML........P/N 01-01126........$194.75
Manual Dispensing Gun 750ML........P/N 01-01127........$256.95
Static Mixer Element........P/N 01-01128........$10.95

**UV SMOOTH PRIME FILLER/PRIMER**
The pinhole killer! Waterborne polyurethane primer plus UV blocker applied with a foam roller or spray gun. Fills pinholes in layups or molded parts. White color. Once UV Smooth Prime has dried for 7 days, spray white two-part catalyzed Epoxy Primer to seal the surface and provide moisture and chemical resistance prior to spraying top coat paint. Dry sand for a smooth, pinhole-free surface. Dries in 20 minutes, sand in two hours. Clean up with water. Use Poly-Fiber Gun Cleaner to clean your spray gun after each day’s spraying.

NON-HAZMAT. Three gallons required for most composite aircraft.

**CROSSLINKING NO LONGER REQUIRED.**
Quart.................P/N 09-28280........$64.00
Gallon.................P/N 09-28290........$211.95

**RUST DEFENDER SANDABLE FILLER**
A one step finishing material from bare metal, body filler plastic, wood, aluminum, or fiberglass to a surface ready to accept any type of paint without concern about penetration of solvents or moisture. Provides fast build-up and fill, is non-shrinking, easy sanding, wet sandable and waterproof, and self-etching. Can be sprayed or brushed on and can be built up like Bondo or Featherfill. Ready to sand in one hour, and it does not clog up your sandpaper. Pot life and cure time are about one hour at 70 degrees Fahrenheit. Versatile polyester filler.

Quart.................P/N 01-00558........$75.65
Gallon.................P/N 01-00559........$189.75

**LITE WEIGHT FILLER**
Lite Weight autobody filler is a very versatile filler which is excellent for holding jig blocks in place during composite construction. Applies evenly and allows easy sanding within minutes. Cures well even in humid climates. Creme hardener is included.

Quart.................P/N 01-00243........$19.90
Gallon.................P/N 01-00244........$34.75

**WEST SYSTEM 403 MICROFIBERS ADHESIVE FILLER**
403 Microfibers Adhesive Fillers, a fine fiber blend, is used as a thickening additive with WEST SYSTEM Epoxy to create a multi-purpose adhesive, especially for bonding wood. Epoxy thickened with microfibers has good gap-filling qualities while retaining excellent wetting/penetrating capability. Off-white, 20 ounces. .................P/N 01-01650........$28.50

**WEST SYSTEM 410 MICROLIGHT**
An excellent filler which provides easy workability for a variety of applications. Easy to sand and cures to a neutral tan color.

1.7 Oz........P/N 01-00785........$19.46
4.3 Oz........P/N 01-00785........$38.72

**PRIME COAT PRIMER / FILLER**
VHT Prime Coat™ is an excellent foundation for any enamel, acrylic or synthetic lacquer. It provides a tough, air-dry base with excellent adhesion to intermediate and top coatings. VHT Prime Coat™ is specially formulated to fill scratches or pin holes caused by sanding or body fillers to form a strong corrosion barrier. It is a multi-purpose product, and can be used on metal, fiberglass, masonry, wood and most plastic surfaces. It is ideal for automotive, marine, aviation, home, farm, and industrial use.

11 oz. can........P/N 01-00305........$16.75
LIQUID “X-30” FOAM
(TWO-COMPONENT POLYURETHANE FOAM)
This system consists of two components - “X-30” Resin and “X-30” Catalyst. When the resin and catalyst are mixed in equal volumes they expand into a rigid closed-cell foam of 2 pound density. Thorough mixing of the two components is essential. “X-30” Foam expands approximately 40 times its liquid volume. Small-batch mixes are recommended. Cured foams can be easily trimmed, cut and shaped with common woodworking tools. Use toluene or MEK for cleanup. “X-30” Foam contains a highly reactive agent and is classified as a toxic material. It is combustible, a strong skin sensitizer and eye irritant. Avoid contact with the skin. Use rubber gloves when handling. Used for: Flotation, thermal and acoustical insulation reinforcement and miscellaneous void filling. Most small pleasure boats can be made “sink-proof” with approximately two gallons of “X-30”. Data sheet available. “X-30” Foam contains a volatile fluorocarbon and should be stored at 70°F. or lower. “X-30” is used on the Osprey II bottom hull, canopy, nose cone, etc., requiring about four gallons of material (2 gallons each). Shelf life at least 6 months. Users have reported “more than 2 years shelf life.”

MOLD RELEASE AGENTS
POL-EASE ® 2300 MOLD RELEASE
Provides superior release with minimum buildup on mold surfaces for casting urethane elastomers, epoxy, polyester, and rubber compounds. Molded parts are easily cleaned for finishing operations. It is effective on aluminum, steel, epoxy, polyester, and elastomeric molds; it does not distort intricate patterns. P/N 01-31749 $24.85

MAXIMUM MOLD RELEASE WAX
Meguiar’s® Mold Release Wax is a blend of imported waxes specially formulated to provide a maximum number of releases per application. P/N 01-09415 $15.55

MOLD RELEASE WAX
High-temperature paste wax. 14 oz. P/N 01-00177 $19.50

FIBERGLASS MOLD RELEASE
Plastilease 512B, a film-forming, water soluble parting agent, assures clean release of fiberglass parts from molds. For application by brush or spray. P/N 01-30600 $31.00/Qt.

LPS MRX SILICONE MOLD RELEASE
Excellent for releasing molded parts in high temperature and extreme pressure environments. MRX Silicone Spray Mold Release provides maximum releases and superior value for the end-user. This non-staining, non-corrosive mold release is heat stable up to 500°F. It is a nonflammable product and contains no class I or II ozone depleting chemicals. Like all LPS MR-series mold releases, MRX Silicone Spray Mold Release doesn’t use Methylene Chloride. 16 oz. aerosol can P/N 09-00271 $12.95

PVA RELEASE FILM
PVA (Polyvinyl Alcohol) should be used with #1016 Wax to aid in the release of parts form a mold. It should be applied in 3 thin mist coats over nonporous, waxed mold surfaces. After the final wax coat has dried, begin by spraying a light tack coat of PVA. Typically, within 5 mins. the final heavier coats can be added. The PVA dries to form a smooth, glassy film. After part release, the residual film can be removed with water. We recommend using an inexpensive automotive siphon spray gun and 70-90 psi for application, although airbrushes will work on hobby size projects. PVA can also be sprayed over any polyester repair to provide an airless tack-free cure. For use with epoxies P/N 01-14813A $22.85/qt

ZOLATONE COCKPIT PAINT
Used to paint cockpit interiors, excellent on fiberglass. Gives a coarse, durable, professional finish. One gallon is required for Long-EZ cockpit. See instructions for proper primer use on all surfaces in question. Color chart available on request. Order Color Chart P/N 01-15815.

HI GLOSS CLEAR POLYESTER TOP COAT
Features: * Super Clear - Glass like appearance * Scratch Resistant * Buffs to a Super Hi-Gloss Finish * Refinishes to Original Hi-Gloss
Practically a Walk-A-Way Gloss Finish
Product Applications: * Exotic wood coating * Gel coat additive for air cure application * Musical instrument wood coating * Top coat over clear primers
Top coat over pigmented colors for clear depth * Automotive interior composite parts clear coating * Architectural wood crafts

Disposal of empty container may be allowed by local regulations. For detailed information including MSDS, please contact our Technical Support Department at 1-800-874-7272.

DISPOSABLE RESPIRATOR REPLACEMENT PARTS
Dusts, Mists, & Fumes Pre-Filter
P/N 01-00382 $1.65

GROOVED LAMINATING ROLLERS
These are the standard laminated rollers for wetting out woven roving and mat with polyester resin. Use with epoxy resin for applying tape into corners and for spreading thickened epoxy over large areas for gluing and fairing.

3” wide roller with stipple adhesive cover. Has excellent stippling action for working out air bubbles in layups and has no tendency to lift the cloth. Use on all major layups. Order frame and cover separately.
Roller Frame Only P/N 01-24902 $6.75
Cover Only P/N 01-24903 $4.35

EPOXY LAYUP ROLLERS
3” wide roller with stipple adhesive cover. Has excellent stippling action for working out air bubbles in layups and has no tendency to lift the cloth. Use on all major layups. Order frame and cover separately.
Roller Frame Only P/N 01-24902 $6.75
Cover Only P/N 01-24903 $4.35

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**KUT-MASTER FOAM CUTTING FRAME**

These custom-built foam cutting frames can help produce professional results in foam cutting for the amateur builder. Constructed of 1-1/8" O.D. aluminum tubing, the heli-arc welded frame is lightweight yet extremely durable. The frames come completely pre-wired and ready to attach to the voltage controls shown below, and a tensioning system maintains uniform wire tension throughout the cutting process. The frames are stocked in 3 standard lengths, and custom frames are available on request (send sketch). Cutting depth is 11". Weight- 5 lbs. KUT-Master Foam Cutting - 2 Ft. Frame ....P/N 01-15200 ........$226.95
KUT-Master Foam Cutting - 3 Ft. Frame ....P/N 01-15300 ........$249.00
KUT-Master Foam Cutting - 4 Ft. Frame ....P/N 01-15400 ........$269.00

**HOMEBUILDERS SPECIAL HOTWIRE KIT**

An excellent new hot wire system consisting of a controller and transformer. Recommended by Rutan Aircraft Factory as a good system at a very economical price.

P/N 01-15600 ........$53.00

**SAFETY WIRE**

Type 302 stainless steel safety wire, for hot wire cutter. This is superior to nichrome wire, which is brittle and breaks easily. Specify .032" or .041" diameter wire.

.032" Dia. Wire, 25 Ft. Coll .................P/N 01-15725 ........$1.25
.041" Dia. Wire, 25 Ft. Coll .................P/N 01-15825 ........$1.25
1 Lb. Spool ................................P/N 05-02687 ........$9.35

**INCONEL 600 HOT WIRE**

Does not stretch. Excellent for hotwiring polystyrene foam.

.032" Dia. Wire ..............P/N 01-15805 ........$0.35 ft.
.041" Dia. Wire ..............P/N 01-15910 ........$0.24 ft.

**MUSIC WIRE**

Music wire is high carbon steel and although very high in tensile strength, must be able to wrapping around itself without showing signs of cracking. 156 ft. of .049" dia. wire per lb., 46 ft. of .090" dia. wire, per lb. 22 Ga.

Price is per pound.

.049" Dia. (1 lbs.) ....P/N 03-49500 ........$6.50
.090" Dia.(32Ga.,1lbs.) ....P/N 03-49600 ........$4.45

**TYPE 302 STAINLESS SPRING WIRE**

.062" Dia. ..........................P/N 03-49610 ........$0.38 ft

**MICHAEL ENGINEERING EPOXY RATIO PUMPS**

This highly recommended pump, aptly called “Sticky-Stuff Dispenser”, will save about $50 in epoxy in building a VE type aircraft, plus time, mess, dermatitis, temper and risk of bad batches. Used by individual craftsmen and professionals alike, it is a practical engineering tool especially designed to eliminate the sticky, messy, costly hand proportioning of epoxy resins. It is well built and should last through the construction of dozens of aircraft. The Sticky-Stuff Dispenser assures accurate measurement of low-viscosity (under 3,500 centipoises) unfilled epoxy resin. The standard Model A dispenser pump delivers a ratio of 100 parts of resin to 44 parts of hardener.

Note: This pump is for a 2:1 ratio. 4:1 ratio is available, please request in special instructions at time of checkout.

Adjustable Ratio Pump ..................P/N 01-16010 ........$336.00
Rebuild Kit for 45:100 pump ..........P/N 01-00504 ........$82.90
Small round replacement container (qt) ....P/N 01-15920 ........$14.50
Large square replacement container (gal) ....P/N 01-15910 ........$21.55
Stainless Steel Check Valve
(Use with Jeffco epoxies) ..........P/N 01-00258 ........$65.90

**COMPOSITE MATERIALS PRACTICE KIT**

All designers highly recommend that builders who are considering a composite project purchase this practice kit. It contains the excellent 26 page 11" x 17" manual by Burt Rutan entitled MOLDLESS COMPOSITE SANDWICH HOMEBUILT/ AIRCRAFT CONSTRUCTION ($14.50) plus the assorted foams, epoxy, fiberglass, filler materials and supplies with which to work. Everything needed to practice the technique of composite building before venturing into a complete aircraft project.

Practice Kit with Manual ................P/N 01-15000 ........$118.00
Practice Kit without Manual ..........P/N 01-15100 ........$118.00
International Practice Kit with Manual ..P/N 01-15500 ........$59.00
Same as Practice kit with the manual, but excludes the epoxy for International shipping.

**COMPOSITE TOOL KIT**

This kit includes an assortment of many of the commonly required tools used in composite construction.

**“Note: not all items shown in picture”**

QTY. ................................ PART NO. ........................ DESCRIPTION
1. .................................. .01-25800 .................. Glass Shears
1 box .................................. .01-25800 .................. 500 Mixing Sticks
2 boxes .................................. .01-25700 ........... 12 oz. Mixing Cups
2 boxes .................................. .01-25710 ........... 16 oz. Mixing Cups
10 .................................. .01-24899 .................. 3" Plastic Squeegee
10 .................................. .09-21200 .................. 1" Disposable Brushes
10 .................................. .09-21300 .................. 2" Disposable Brushes
1 .................................. .01-01580 .................. Electronic Scale
2 boxes .................................. .01-36550 .................. Latex Gloves
1 .................................. GLR123D ....... 1/2" x 3" Laminating Roller
1 .................................. GLR12C .................. Composite Tool Kit
1 .................................. GLR26 ............... 2" x 6" Plastic Grooved Roller

P/N 01-00166 .......................$201.95

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COMPOSITE TOOLS

STANLEY TAPE MEASURE
This 12 foot steel tape measure, with 1/2" blade, is graduated in tenths and hundredths of inches and also in fractions of inches (32nds). Very handy for all aircraft construction. A "must" for composite construction.
No. 33-272..................P/N 33-272.............$24.85

STANLEY UTILITY KNIFE
Aluminum, die-cast in two sections - provides blade storage. Has handy hang hole. Furnished with No. 11-921 blade and blade guard.
No. 10-099..................P/N 10-099.............$7.80

KNIFE BLADE
Heavy-duty pointed razor-type utility knife blade for No. 10-099 knife and most other makes of utility knives.
No. 11-921 (Pkg. of 5 Blades) P/N 11-921..................$2.45

HOOK BLADE
For use with No. 10-099 knife and most other makes of utility knives to cut linoleum, roofing material, cartons, etc., without damage. The razor-sharp hooked ends cut to full thickness in one stroke.
No. 11-961 (Pkg. of 5 Blades) P/N 11-961..................$6.20

SINGLE-EDGE RAZOR BLADES
Used for trimming rough edges of laminates.
P/N 01-24904..................$0.15/ea.
Box of 100 30% Discount.

SPRING CLAMPS
Heavy-gauge steel clamps with vinyl grips and tips to prevent marring work. Jaws specially formed to hold flat or round objects. Two sizes available:
No. 3202-HT – Jaw Opening 2", Length 6" P/N 12-03778..................$3.45

NO. 5282 KNIFE SET -
Nos. 1, 2 and 5 knives plus 10 assorted extra blades Handy, fitted chest.
P/N 01-17300..................$35.90

NO. 5083 KNIFE SET -
Nos. 1, 2 and 6 knives plus 14 assorted extra blades in beautiful wooden chest.
P/N 01-17400..................$56.75

X-ACTO BLADE NO. 11 -
A general purpose blade.
Package of 5..................P/N 01-16500.............$6.50

X-ACTO TOOLS

STRAIGHT EDGE
A 6-ft. long kiln-dried spruce board, 7/8" to 1" thick and 3" to 4" wide, used for checking the straightness of flying surfaces during composite construction. P/N 01-25900..................$24.50

6" STEEL RULER
Flexible stainless steel rule graduated in 10ths and 100ths on one side and in quick-reading 32nds and 64ths on the other side.
6 inch..................P/N 616..................$5.65
12 inch..................P/N 12-05602.............$9.50

FELT TIP MARKERS
Used for marking locations on fiberglass throughout construction.
P/N 01-26000..................$0.45

12” LONG DRILL BITS
For use with standard electric drill for hard-to-reach jobs.
3/32" (.094" Dia.) ..................P/N 12-05200.............$6.65
1/8" (.125" Dia) ..................P/N 12-05300.............$8.95
3/16" (.188" Dia) ..................P/N 12-05400.............$8.50
5/32" (.156" Dia) ..................P/N 12-05500.............$9.50
1/4" Dia. ..................P/N 12-05600.............$10.50

RUBBER SEALANT
No. 732 RTV general-purpose, clear, one-part silicone rubber. Cures to a firm silicone rubber in 24 hours at room temperature.
4.7 Oz. Tube ..................P/N 09-27800.............$9.50

JIFFY MIXER
This is a very effective 2-1/2" diameter stainless steel mixer on a 15" shaft. Attach to an air drill for fast, efficient mixing of larger batches. It will not dig into or gouge the sides or bottom of your mixing container.
P/N 01-00395..................$22.60

DOVETAIL SAW
Cuts a true, smooth and narrow kerf. Comfortable hardwood handle provides positive grip. Professional quality.
No. 15-022..................P/N 15-140.............$27.90

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COMPOSITE TOOLS

ROTARY (“PIZZA”) CUTTER
Makes clean cuts on fiberglass fabrics and other materials. The disc blade is made of high quality tungsten steel which is very sharp. Used by high-volume composite shops. Use with wooden block and handle knife with caution.

RTY-2 Cutter ......................................... P/N 01-00299 .............. $16.50
Replacement Blade .................................. P/N 01-00300 .............. $7.50
Blades (5 Pack) ....................................... P/N 01-00301 .............. $29.50
Replacement Pinking Blade ...................... P/N 12-01709 .............. $10.50

CALRAD VARIABLE VOLTAGE CONTROL
A fine quality control to supply the electrical current for hot-wire cutting of styrofoam and PVC foam. One unit can serve to cut many aircraft. Input 115 volts AC Output variable from 0 to 130 volts AC at 5 amps. Caution - fuse should be inserted in the secondary to protect the control in the event of a short circuit.
Input: 117V AC 60Hz 3-Prong AC cord.
Output: 0-130V AC Adj 60Hz; volt meter, power jack. Fuse Protection AGC: 5 Amp. Max: 500VA
P/N 01-01294 ............. $174.75

90 DEGREE ALUMINUM ROTARY CUTTER FOR COMPOSITE WORK
This cutter handle is all aluminum with special stainless hardware for easy assembly when changing out rotary cutter blade. Will not melt when exposed to acetone, methylene chloride, and other chemicals. Good for wet layups. To clean, just drop in small container of acetone.
P/N 01-01047 .......... $39.75

PAINT BRUSHES
Natural, undyed bristle brushes with smooth, unpainted wooden handles. Unaffected by paints, dopes, resins, thinners or solvents.
1” Wide Brush............ P/N 09-21200 ........ $0.50
2” Wide Brush............ P/N 09-21300 ........ $0.60

RUBBER SQUEEGEE
Developed especially for working with epoxies, this 6”, or 36” wide hard rubber squeegee is superior to the plastic types. Can be easily cleaned & reused many times.
6” Squeegee............. P/N 01-24901 ........ $4.35 ea
36” Squeegee............ P/N 01-00012 ........ $24.65ea

NOTCHED SPREADER
This plastic spreader is excellent for spreading epoxy at a steady rate to provide an even surface. Measures 4” x 4” and is notched on three sides in increments of 1/8”, 3/16”, 1/4”.
P/N 01-24909 ............. $1.48 ea

DISPENSER FOR MEKP CATALYST
Perfect to measure and pour catalyst. The bottle will hold 16 oz. of catalyst and dispenses liquid safely and accurately from 2.5 to 35 cc. Measurements are instantly repeatable.
P/N 01-08503 ............. $12.65

POST CURE KIT
This kit consists of one post cure thermometer (P/N 01-00394) and 1 regulating thermostat (P/N 08-12148) that allows control of electrical devices for heating. Snap Disc Fan Control 3/4 inch SPST Flanged Airstream Mount, Open On Rise, 180°F Cut-Out Temperature, 40°F Differential. Therm-O-Disc Style 60711, Type 610013
P/N 01-00393 ............. $22.00

GRADUATED TAPER-TIP APPLICATOR
This graduated 2 oz. syringe is ideal for measuring and dispensing precise amounts of resins and other liquids.
Note: The ink used for the graduation lines are not solvent resistant. They will rub off if contacted with a solvent.
Without Cap............. P/N 01-25635 ........ $4.60

DISPENSER BOTTLE
Polyethylene bottle with Yorker (applicator) cap.
4 Oz. Bottle............... P/N 01-24905 ........ $0.65
16 Oz. (1 Pint) Bottle... P/N 01-24906 ........ $1.60

INDUSTRIAL SYRINGE
Made of hi-impact polyethylene with seamless body and special safety-grip plunger. Capacity 10 cc. Tapered dispensing nozzle can be clipped with scissors at proper diameter to govern output. Excellent epoxy dispenser.
P/N 01-25000 ............. $6.95

MIL GAUGES
These color-coded mil gauges are solid anodized aluminum for long life and come in four sizes for a variety of FRP applications. Machined to close tolerances (0.0001”) for accuracy and available in mils (inches) and microns (metric).
3-18 mils.................. P/N 01-00411 ........ $5.25
10-35 mils................ P/N 01-00412 ........ $5.75
40-65 mils................ P/N 01-00413 ........ $9.60

MULTI-MEASURE PLASTIC CONTAINERS
Use again and again for liquid ingredient accuracy. A must-have item when mixing resins. Seal the liquid in the container with the matching sized plastic lid.
1 Qt. mix cup................ P/N 01-00915 ........ $1.35
1 Qt. lid.......................... P/N 01-00926 ........ $0.55
2.5 Qt. mixing cup........ P/N 01-00330 ........ $2.25
2.5 Qt. lid..................... P/N 01-00331 ........ $1.07

EPOXY MIXING CUPS
Unwaxed, flat bottom paper cups in three convenient sizes for small mixes.
8 Oz. ..... (50 Cups) ... P/N 01-01640 ........ $7.85
12 Oz. ..... (50 Cups) ... P/N 01-01641 ........ $8.85
16 Oz. ..... (50 Cups) ... P/N 01-01642 ........ $9.85

MIXING STICKS
These mixing sticks are medical tongue depressors which work well for mixing small batches of epoxy. Size: 3/4” x 6”.
Box of 500 ............. P/N 01-25800 ........ $12.50

TAPERED OFFSET SPATULA
This tapered spatula is stainless steel with wood handle. Ideal for making 3/8” radii on bulkheads, ribs, or anywhere a uniform radius is required.
P/N 01-24915 ............. $3.45 ea.
COMPOSITE TOOLS

DREMEL TOOLS

MODEL 100 MOTOTOOL - The Dremel 100 Series rotary tool offers single speed convenience for full-speed applications like routing, cutting, drilling and sanding applications. Its single speed setting is perfect for all-the-time high speed use. Ideal when one speed is all you need or for shaping, hollowing, grooving, slotting, inlaying and making tapered holes in soft metals, plastics and woods especially on curved surfaces. 4000 RPM. Variable speed motor controls RPM. Amperage: 1.25. Operation: 100% variable speed. Ball bearing construction. P/N 01-018000............$49.50

MODEL 395 MOTOTOOL - Variable Speed: 5,000-32,000 RPM with 100% ball bearing construction for long life, smooth operation. External caps allow for easy replacement of motor brushes. Amperage: 1.2. P/N 01-187000............$79.75


NO. 402 MANDREL - The 402 mandrel is used primarily with cut-off wheels but is used with the following Dremel accessories: 409, 411, 412, 413, 420, 423, 425, 426, 456, 511, 512, 540 and 541. Shank Diameter 1/8", 3.2 mm. P/N 01-22000............$2.45

CARBON MOTOR BRUSH - One pair of motor brushes for use with Dremel rotary tool model(s): 100, 200, 275, 285, 300, 395 and 595 (Type 4, 5 and 6) and Dremel contour sander 6000 (Type 1 and 2). … P/N 01-01180............$2.45

DREMEL 543 CUTTING / SHAPING WHEEL - For cutting and shaping on soft and hard woods, fiberglass, plastics and laminates (not metal.) This versatile wheel is coated with tungsten carbide grit for long life. It is coated on both sides, so it cuts and finishes in one operation. P/N 01-01056............$17.50

ALUMINUM OXIDE GRINDING STONES - Use on metals, castings, welded joints, rivets and rust. Ideal for sharpening, deburring and general purpose grinding of most materials.

<table>
<thead>
<tr>
<th>Cutter Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>#911 5/8&quot;</td>
<td>01-00144</td>
<td>$2.45</td>
</tr>
<tr>
<td>#912 7/32&quot;</td>
<td>01-00142</td>
<td>$2.45</td>
</tr>
<tr>
<td>#913 5/32&quot;</td>
<td>01-00141</td>
<td>$2.45</td>
</tr>
</tbody>
</table>

STRUCTURED TOOTH TUNGSTEN CARBIDE CUTTERS - Fast cutting sharp teeth for greater material removal. Use on fiberglass, wood, plastic, epoxy, rubber, laminates, particle board, soft metals, ceramic tile.

<table>
<thead>
<tr>
<th>Cutter Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>#9931 1/4&quot;</td>
<td>01-00148</td>
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</tr>
<tr>
<td>#9932 5/32&quot;</td>
<td>01-00151</td>
<td>$12.75</td>
</tr>
</tbody>
</table>

HIGH SPEED CUTTERS - High Speed Cutters can be used for shaping, hollowing, grooving, slotting, making tapered holes in soft metals, plastics and woods. Number 198 and 199 cutters can be used to make small slits.

<table>
<thead>
<tr>
<th>Cutter Size</th>
<th>Part No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>#100 1/4&quot;</td>
<td>01-019200</td>
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<td>#101 3/32&quot;</td>
<td>01-01146</td>
<td>$5.95</td>
</tr>
<tr>
<td>#102 3/16&quot;</td>
<td>01-01145</td>
<td>$5.95</td>
</tr>
</tbody>
</table>

MULTIPRO CHUCK - The Dremel MultiPro chuck allows you to quickly and easily change accessories on your Dremel MultiPro rotary tools without changing collets. Will accept accessories with 1/32" - 1/8" shanks. Use only with corded MultiPro tool models 275, 285, 395, 595. P/N 01-00131............$9.50

NO. 407 1/2" DRUM SANDER - Ideal for rough shaping of wood and smoothing of fiberglass. Sander bands are replaceable. Furnished w/ one band. 1/8" shank P/N 01-19000............$3.70

NO. 408 DRUM SANDER BANDS - 1/2" Diameter, Coarse grit. P/N 01-19100............$2.45

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SANDING TOOLS

SANDPAPER
The weights and grits listed have been found to be the most effective for sanding fiberglass/epoxy surfaces. Sheet Size: 9" x 11".

<table>
<thead>
<tr>
<th>Sandpaper Type</th>
<th>Part No.</th>
<th>Price /Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Oxide 36 Grit</td>
<td>01-26200</td>
<td>$1.75</td>
</tr>
</tbody>
</table>

SANDPAPER 3M™
3M™ Wetordry™ Abrasive Sheet 413Q is an abrasive sanding paper constructed on a light, A-weight paper backing and features a waterproof resin bonding to help prevent heat buildup. The silicon carbide abrasive and waterproof backing make this paper an ideal product for sanding applications such as paint prep, sanding, sealer sanding, and solid surface finishing. This will produce satiny-smooth finishes on metal and other doped, lacquered, or enameled surfaces.

Features:
- Silicon carbide mineral provides an aggressive cut and a consistent, fine finish
- Light, A-weight paper backing offers excellent flexibility in hands-on applications
- Resin bonding resists deterioration from heat, extending the life of the abrasive cloth
- Waterproof material allows for easy debris removal
- Can be easily cut and folded to fit any hand tool or work piece crevice

<table>
<thead>
<tr>
<th>Grit Size</th>
<th>Price /Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>120-A 09-20550</td>
<td>$1.95</td>
</tr>
<tr>
<td>220-A 09-20600</td>
<td>$1.25</td>
</tr>
<tr>
<td>280-A 09-20700</td>
<td>$1.25</td>
</tr>
<tr>
<td>320-A 09-20800</td>
<td>$1.25</td>
</tr>
<tr>
<td>400-A 09-20900</td>
<td>$1.30</td>
</tr>
<tr>
<td>600-A 09-01446</td>
<td>$1.75</td>
</tr>
</tbody>
</table>

SANDING DETAILER KITS
The Sanding Detailer is ideal for finishing those hard to reach areas. The abrasive belt can be indexed. The Sanding Detailer is spring loaded to put tension on the abrasive belt. After the abrasive belt is used up, the user can simply compress the tool and replace the abrasive belt with a fresh one. They are color coded for easy identification of grit. The replacement belts are color coded on the inside.

The Standard Kit includes (shown in picture):
- 1 Gray 80 Grit
- 1 Red 120 Grit
- 1 Orange 180 Grit
- 1 Blue 240 Grit
- 1 Yellow 400 Grit
- 1 Black 500 Grit
- Grit tool along with 5 Replacement Belts of each grit

<table>
<thead>
<tr>
<th>Grit Size</th>
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<th>Price /Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>120-A 09-20550</td>
<td>$1.95</td>
<td></td>
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<td>280-A 09-20700</td>
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<tr>
<td>320-A 09-20800</td>
<td>$1.25</td>
<td></td>
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<tr>
<td>400-A 09-20900</td>
<td>$1.30</td>
<td></td>
</tr>
<tr>
<td>600-A 09-01446</td>
<td>$1.75</td>
<td></td>
</tr>
</tbody>
</table>

PERPPIN’ WEAPON SANDING BLOCK
Preppin’ Weapon is a handy sanding block made of Styrofoam core and high impact ABS that won’t break when dropped. Easy to grip for wet or dry sanding. Contoured to fit the shape of a hand and is sized to fit a 1/4” sheet of plain backed 8 x 11” sandpaper or a 2 3/4” wide file paper. It’s coil spring design allows single or multiple sheets equally tight and saves reloading time by stacking up to 4 sheets and tearing them away as the abrasive wears out. Save reloading time by using colors to indicate grits. Excellent for builders of aircraft, boats, cars, etc.

<table>
<thead>
<tr>
<th>Color</th>
<th>Price /Sheet</th>
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</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>$20.50</td>
</tr>
<tr>
<td>Red</td>
<td>$19.85</td>
</tr>
<tr>
<td>Green</td>
<td>$19.95</td>
</tr>
</tbody>
</table>

MINI-SANDER
A unique sanding tool which uses a 1-1/2” wide strip of sandpaper formed to make a belt. Locked taut by a patented mechanism that snaps into place with a finger pull. Its knife edge sides and padded body sand close to right angle fittings & fit into small concave recesses. Sander body is 7/8” x 4” and made of high impact plastic. Buy ready-made belts or make your own (6 belts from standard sheet).

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Price /Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>109 00500</td>
<td>$8.50</td>
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<tr>
<td>3 Mini-Strips 0505</td>
<td>$3.50</td>
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<td>3 - #500</td>
<td>$19.95</td>
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<tr>
<td>3 - #320</td>
<td>$19.95</td>
</tr>
<tr>
<td>3 - #220</td>
<td>$19.95</td>
</tr>
</tbody>
</table>

PERMA-GRIT CONTOUR SANDING BLOCKS
These user friendly sanding blocks are made from extruded, anodized aluminum. The 32mm (1.25") Radius Curve is covered on the external and internal radius with Tungsten Carbide abrasive sheets. The Contour Blocks come in either the Coarse (60US grit approx.) or Fine (120US grit approx.) Small block is 5.5” long and large block is 11” long.

<table>
<thead>
<tr>
<th>Description</th>
<th>Price /Sheet</th>
</tr>
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<tbody>
<tr>
<td>Standard Kit, Coarser Grits 01-01411</td>
<td>$28.95</td>
</tr>
<tr>
<td>Finishing Kit, Finer Grits 01-01412</td>
<td>$26.50</td>
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<tr>
<td>80 Grit Belt- Replacements 01-01413</td>
<td>$4.95</td>
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<tr>
<td>120 Grit Belts- Replacements 01-01414</td>
<td>$5.45</td>
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<tr>
<td>180 Grit Belts- Replacements 01-01416</td>
<td>$5.45</td>
</tr>
<tr>
<td>240 Grit Belts- Replacements 01-01417</td>
<td>$4.95</td>
</tr>
<tr>
<td>280MM Contour Block (COURSE) 01-01493</td>
<td>$39.50</td>
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<tr>
<td>280MM Contour Block (FINE) 01-01494</td>
<td>$39.50</td>
</tr>
</tbody>
</table>

WWW.AIRCRAFTSPRUCE.COM

Prices Subject to Change Without Notice
Perma-Grit Tools are made of Tungsten Carbide Grit, one of the hardest elements available, second only to diamonds. They are specifically designed and developed for aircraft builders, woodworkers, and modelers. These tools will cut, sand and shape tough composite materials, saving homebuilders hours of building time. Ideal for fuselage shaping and wing building, these tools are highly recommended by several kit-plane manufacturers. Available in coarse (180) & fine (320) grit.

**Model No.** | **Part No.** | **Description** | **Price**
---|---|---|---
F-101 | 12-00040 | 230mm x 38mm Flat Fine File | $12.95
F-102 | 12-00041 | 230mm x 38mm Flat Coarse | $12.95
R-200F | 12-00042 | 230mm x 26mm / 36mm diameter Fine | $12.95
R-200C | 12-00043 | 230mm x 26mm / 36mm diameter Coarse | $12.95
R-201C | 12-00044 | 230mm x 38mm Tangent Coarse | $12.50
R-201F | 12-00045 | 230mm x 38mm Tangent Fine | $12.50
R-202C | 12-00046 | 18mm diameter tube Coarse | $12.50
R-202F | 12-00047 | 18mm diameter tube Fine | $14.50
R-203C | 12-00048 | 12mm diameter tube Coarse | $12.50
R-203F | 12-00049 | 12mm diameter tube Fine | $12.95
R-204C | 12-00050 | 6 mm round Coarse grit | $12.95
R-204F | 12-00051 | 6 mm round Fine grit | $12.99
S-204C | 12-00052 | 6 mm square Coarse grit | $12.99
S-204F | 12-00053 | 6 mm square Fine grit | $12.50
R-101 | 12-00054 | 230mm x 38mm diameter Internal Fine grit | $14.50
R-102 | 12-00055 | 230mm x 38mm diameter Internal Coarse grit | $12.95

**Set BC**

- Contains: 4 coarse grit, 4 fine grit
  - Price: $87.75

**Set BF**

- 8 pieces in Tool Roll: R-200F, R-201F, R-202F, R-203F, S-204F
- Contains: 4 coarse grit, 4 fine grit
  - Price: $87.75

**Model No.** | **Part No.** | **Description** | **Price**
---|---|---|---
FXT-101 | 12-00064 | 140mm x 51mm Coarse one side, fine opp. | $27.55
FXT-102 | 12-00065 | 280mm x 51mm Coarse one side, fine opp. | $37.95
FXT-103 | 12-00066 | 560mm x 51mm Coarse one side, fine opp. | $55.85
FXT-104 | 12-00067 | 51mm x 280mm Coarse Grit Strip | $12.50
FXT-105 | 12-00068 | 51mm x 140mm Coarse Grit Strip | $10.95
FXT-106 | 12-00069 | 51mm x 140mm Fine Grit Strip | $9.85

**3/8” INCH NEEDLE FILE KIT WITH HANDLE**

Set of 5 files: Hand, Round, Halfround, Square and 3-Square. Extremely versatile tools, popular for detailed work. These file cuts in any direction and does not clog easily. Cuts quickly leaving an excellent finish. ...PN 12-01752...... $57.75

**Model No.** | **Part No.** | **Description** | **Price**
---|---|---|---
RF-1C | 12-00070 | Narrow Cone coarse | $15.55
RF-1F | 12-00071 | Narrow Cone fine | $15.55
RF-2C | 12-00072 | Wide Cone Coarse | $15.55
RF-2F | 12-00073 | Wide Cone Fine | $14.85
RF-3C | 12-00074 | Drum Coarse | $15.50
RF-3F | 12-00075 | Drum Fine | $16.50
RF-4C | 12-00076 | Pancake Coarse | $16.50
RF-4F | 12-00077 | Pancake Fine | $16.50
RF-5C | 12-00078 | Domehead Coarse | $15.50
RF-5F | 12-00079 | Domehead Fine | $16.50
RF-6C | 12-00080 | 1/8 diameter Rod Coarse | $16.50
RF-6F | 12-02247 | 1/8 diameter Rod Fine | $15.50

**NEEDLE FILES**

These extremely versatile tools are excellent for shaping and finishing. They will cut in any direction and do not clog easily. Our needle files cut quickly and leave an excellent finish. Very popular for detail work. Furnished in Medium 280 grit.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Part No.</th>
<th>Description</th>
<th>Price</th>
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<tbody>
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<td>NF-1</td>
<td>12-00081</td>
<td>Set of 5 needle files w/ Handle</td>
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<td>NF-1</td>
<td>12-00082</td>
<td>Set of 5 needle files w/o Handle</td>
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<td>12-00083</td>
<td>Flat needle file</td>
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<td>NF-1</td>
<td>12-00084</td>
<td>Knife needle file only</td>
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<td>NF-1</td>
<td>12-00085</td>
<td>Round needle file only</td>
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<td>NF-1</td>
<td>12-00086</td>
<td>Square needle file only</td>
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<td>NF-1</td>
<td>12-00087</td>
<td>Triangle needle file only</td>
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<td>Set of 5 needle files / no handle</td>
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<tr>
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<td>Flat Large needle file only</td>
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<td>NF-1</td>
<td>12-00101</td>
<td>Needle File handle only</td>
<td>$4.70</td>
</tr>
</tbody>
</table>

**LARGE NEEDLE FILE HANDLE**

Comfortable plastic handle with brass collet to accept all large (18cms) needle files. Overall length 115mm.

Collect 5mm......PN 12-00168...... $4.70
## Composite Safety Equipment

### InvisiVible Gloves #1211
Invisible Gloves #1211 are a soft paste-like substance that when applied to hands provides protection against caustic and carcinogenic chemical products including hydraulic fluid, paints, ink, MEK, zinc chromate, jet fuel, graphite, engine exhaust by-products, adhesives and much more. Invisible Gloves meets military and industrial safety standards and can protect any area of the body (hands, arms, face, legs, etc.) exposed to hazardous products. Especially useful in working with materials used in composite aircraft construction. One pint yields 100 pair of gloves. Invisible Gloves #1211 are easily removed with water. Allows complete freedom of hand and finger movement. Hands will not heat up and tools will not slip. P/N 12-15800 $8.85/pint

### Latex Gloves
Disposable but reusable gloves which resist tearing. Large size. Fits right or left hand. Box of 100. P/N 01-36550 $10.85

### Cotton Gloves
Lightweight liners - wear under latex gloves. More comfort, improved sensitivity. P/N 01-36600 $1.15/Pair

### Butyl Gloves
These gloves are resistant to the permeation of epoxy resins and curing agents and have been found to offer by far the best protection of any glove available. P/N 01-36700 $29.65

### Heavy Duty Latex Gloves

### Astro Grip™ Nitride Disposable Gloves

### Worx Disposable Latex Gloves
5mil Latex powder free Industrial gloves. General Purpose Lite Duty Gloves. Excellent Dexterity. Pack of 100. P/N 01-01586 $10.85

### Tyvek Suits
These are the tough, full-body suits with hoods that professional painters use. Available in extra large and extra extra large. X-Large. P/N 01-36800 $8.50 XX-Large. P/N 01-36805 $9.85

### MaxShield Disposable Protective Clothing

### Recycled Tyvek® Aprons
The Better-Than-Plastic Apron. A regular throw-away plastic apron might be good enough for small jobs. But for complete protection from food splashes, hot oil, dangerous chemicals, and other big messes, the serious professional chooses a Tyvek® apron. Features: • Bib style for full protection. • 28" x 36" in size. • Serged seams for strength. • Long ties to customize the fit. P/N 12-01824 $2.85

### Tyvek® Disposable Shoe Covers
Boot Covers High top boot covers w/elastic top. P/N 12-01825 $3.45

### Tyvek® Disposable
Shoe Covers, Boot Covers With a Tyvek® disposable shoe covers you don’t have to compromise. That’s because Tyvek® disposable shoe covers deliver the best balance of protection, durability and comfort. Color: White. P/N 12-01995 $1.79

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