COMPOSITES SOURCE BOOK



Composite Solutions... Delivered Daily

OUR MISSION

Revchem Composites is committed to increasing the productivity and profitability of composite fabricators.

ABOUT US

Revchem Composites offers an extensive selection of materials, supplies and equipment to the composites industry. Our large inventory, technical expertise, on-site support, personalized customer service and fast, flexible delivery makes us a valuable partner to the composites industry.

We carry more than 4,000 products from over 200 suppliers. If we do not already have what you need, then we will promptly source the product you are looking for.

Our six west coast distribution centers supply customers throughout North America, South America, Europe, and Asia.

Our technical sales team provides expert advice and on-site support. We are focused on meeting your individual needs.

For over 40 years, we have helped customers improve their processes as well as grow their businesses. We do what it takes to help keep your business profitable and relevant in today's ever changing environment.

Revchem Composites has been Delivering Composite Solutions Daily since 1975.

Vinyl Ester Fairing

Piament Dispersions

CORE MATERIALS &

Flat Stock Laminates

Reinforced Urethane

Skinned Panels (Balsa, Foam,

TOOLING & MODELING

High Temp & Low Temp

Foam (EPS, Urethane)

Chopper Guns & Blades

Pumps & Pressure Pots

Resin Transfer Systems

Dispensing Systems

Foam Dispensers

Gel Coat Systems

Fluid Heaters

Spray Guns

PUTTIES

Bonding

Fairing

Tooling

Fillet

Spray Booths

Titanium Dioxide

& Priming

Vinyl Ester

Translucent

REINFORCING

STRUCTURES

Balsa

Core Mat

Extrusions

Honeycomb

Honeycomb)

BOARD

Epoxy

Urethane

Agitators

Air Tools

Mixers

EQUIPMENT

PVC Foam

Tooling

ADDITIVES & FILLERS

Aluminum Trihydrate Brominated Powder Calcium Carbonate Fish Eye Eliminator Fumed Silica Granite Chips Hemp Hi-Fibe Microballoons Surfacing Agent Talc

ADHESIVES

Cyanoacrylate Epoxy Methacrylate Polyester Urethane

CATALYSTS, INITIATORS & SOLVENTS

Acetone Heat Active Peroxide BPO (Benzoyl Peroxide) Cobalt Curing Agents Cumyl Hydroperoxides Lacquer Thinner MEKP (Ketone Peroxides) MMA Styrene UV Cure IPA

COATINGS, GEL COATS & PIGMENTS

Custom Color Formulations Available

Acrylic Modified Epoxy ISO-NPG Hi-Gloss (Clear & Pigmented) Primers Sanding

COMPOSITES LINE CARD COATINGS (cont.) REINFORCEMENTS

REINFORCEMENTS Fiberglass (E-glass & S-glass), Carbon, Aramid (Kevlar) & Prepreg

A/R (Alkaline Resistant) Chopped Strand Chopped & Continuous Strand Mat Gun Roving Milled Fibers Surface Veil Woven Roving Woven Fabric Multi-Axial Fabrics Uni-Directional Prepreg

RESINS

Epoxy, Polyesters (DCPD, Isophthalic, Orthophthalic), Vinyl Ester

Casting CIPP Cultured Marble Custom Formulations Fire Retardant Flex High Temp/Room Temp Infusion/RTM Polymer Concrete Surfboard Tooling UV Cured

SILICONE

Additives Platinum Base Tin Base Tooling Spray, Brush, or Pour

URETHANE

Casting Clear Casting Elastomers Foam

URETHANE (cont.)

Hard Coat Hybrid Portable Spray Kits Pour & Spray

SUPPLIES

Abrasives Brushes & Squeegees **Buffing Pads** Compounds Containers **Drum Openers & Pumps** Filters Gloves Grinding Disks Mixers Mold Releases Paper (Masking & Floor) QC Tools Rags Rollers Respirators Safety Equipment Solvents Scissors & Knives Tapes **Tyvek Suits**

VACUUM BAGGING & INFUSION

Bagging Films Bleeders & Breathers Hoses & Valves Peel Ply Release Films Flash Tapes Sealing Tapes





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WHY SOURCE FROM US?

Revchem Composites is the West Coast's premier provider of composite materials, supplies, and equipment.

We have six west coast locations to provide fast, and flexible delivery. Orders are often delivered by the next day! We ship products across the country and around the world.

Our technical expertise, sales support, customer service, and extensive product selection enable us to meet all of your composites needs.

Give us a try, you'll be glad you did!

- RAW MATERIALS
- PRODUCTION SUPPLIES
- PROCESSING EQUIPMENT
- EXPERT TECHNICAL SUPPORT





Adhesives & Tapes, Protective Equipment





3M Manufacturing & Industrial Products.

- Acrylic
- ・Epoxy
- Urethane
- Hot Melt
- Cyanoacrylate
- Aerosol Adhesives
- Aerosol Chemicals
- Water-Based General Liquid Adhesives
- Solvent-Based General Liquid Adhesives
- Adhesive Applicators

- Specialty Sealants
- Single-Coated Pressure Sensitive Tapes
- Double-Coated Pressure Sensitive Tapes
- Adhesive Transfer Tapes
- Masking Tape
- Specialty Tapes
- Reinforcing Tapes
- Protective Tapes
- Safety Equipment
- Rubbing Compounds

The Industrial Adhesives and Tapes Division (IATD) design and manufacture extensive product lines for Converter Markets and Bonding Tapes, Specialty, Single-Coated and Masking Tapes, Adhesives, and Protective Equipment.

Filtering & Respirators

Workers in numerous industries require protection from airborne particles and mists.

Sweeping, sanding, grinding, sawing, bagging, and welding – all create a unique set of conditions, especially certain environmental considerations such as heat and humidity.

3M's wide selection of filtering face-piece respirators help you match the respirator to your environment. 3M uses a variety of innovative technologies and features to help you meet your protective and comfort needs.



World Leader in Resin Technology

Green Resins

Cultured Marble &

Solid Surface

500 ml

- Transportation
- Marine
- **Energy &**

Pultrusion

Infrastructure

- **Bathware**

- Corrosion
- **Cast Polymers**

AOC serves the composites and cast polymer manufacturers with world-class resins, additives, material systems and technical support. As a privately-owned enterprise, AOC achieves success through long-term customer satisfaction. AOC is focused on helping each customer improve quality, increase productivity, and find new opportunities to grow.

AOC manufactures resins for every major composite and cast polymer manufacturing process and end-use market segments. AOC's broad range of resins are designed to meet specific requirements for ease of processing, end-use performance, and regulatory compliance.

AOC products are designed to help create synergistic material systems. Interdisciplinary teams engineer AOC systems for superior chemical compatibility, enabling them to become part of the technical support network that ensures the customer gets the maximum benefit.

Since its inception, AOC has invested more time, money and energy into technology than any other resin manufacturer. AOC uses new technologies that deliver unique benefits. AOC's Polymer Scientists turn opportunity into reality. Development work includes expanding AOC's "green" technologies, that include new resins that incorporate renewable resources. AOC research and development is also sharpening its focus on enhanced process and material technologies for wind energy systems.





















BUILDING TRUST

Adhesives, Infusion, Tooling Systems & Silicones

After the successful acquisition of **Axson Technologies by Sika AG** in March 2015, the newly formed entity SikaAxson now enters the market as the leading supplier in the tooling and composites sector.

SikaAxson provides a comprehensive product range for the creation, design, prototyping, and production of a variety of durable goods in the composites, tooling, marine, wind, foundry, automotive, transportation, recreation, sports, and leisure industries.

- Adhesives
 Marine Products
- Modeling & Tooling Boards · Polyester Fillers
- Extrudable Epoxy Pastes
- Epoxy Casting Systems
- · Fastcasts
- Infusion Systems
- Laminating Systems
- Mold Making Silicones

Epoxy Tooling Systems

Vacuum Casting Systems

Dielectrics

· Urethanes

SikaAxson US proudly offers these products under the SIKA®, Axson Technologies®, ADTECH® Plastic Systems, ADTECH® Marine Systems, Tool Chemical Composites (TCC®), and Spartite® brands.

Their commitment to excellence and innovation, combined with exceptional technical expertise, gives them an unrivaled ability to custom-formulate solutions using epoxy, polyester, and polyurethane chemistries that meet the unique needs of customers in a wide variety of industries. State of the art R&D and QC facilities provide assurance of reproducible results in mission critical applications.

High Performance Fabrics



BGF Industries is a leading US manufacturer of high performance fabrics and materials serving the Aerospace, Marine, Filtration, Insulation, Automotive, Electrical, Protection and Construction industries.

BGF was the first weaver of fiberglass textiles beginning in 1941 as Burlington Glass Fabrics. In 1988, BGF became a subsidiary of the Porcher Group of Badinieres, France.

BGF is known for delivering the highest quality products in the industry and for providing a customer experience that is second to none. Their expertise is in developing enduring solutions for products and processes that require lightweight, thermal, or high strength design elements. In fact, BGF has developed over 35 patents for their specialized finishes and processes. BGF's mission is to deliver excellence in every product, every process every time, so that our customer's product will yield exceptional value in the markets they serve.

Carbon and Advanced Composites Fabrics

BGF's carbon fiber fabrics exude refinement and success. When woven fabric is formed into a composite, the deep rich black carbon fibers deliver a distinctive appearance with a hologram-like effect. It adds fashion and flair to any product – from luggage to golf shafts, from automotive spoilers to architectural structures. Even the most ordinary of items becomes gorgeous when made of carbon fabric composite material. Carbon fabrics can be constructed in plain or fancy weave patterns such as twills or satin weaves. With the added benefits of strength, light weight, impact resistance and fire resistance, carbon fabrics deliver the ultimate in style and class for the products you use every day for travel and leisure. BGF engineers high-performance fabrics to meet the stringent criteria of the Advanced Composites Industry Aerospace, Marine/Recreational and Decorative. High-performance fibers such as fiberglass, aramid, and carbon are currently utilized and we continue to evaluate new fibers for innovative applications. Each fiber offers its own unique advantages when engineered into a woven fabric, thus allowing the highest performance possible from the end product.

Applications: Aircraft interiors, primary and secondary structures, ducting, helicopter rotor blades, radomes, avionics, brake linings, automotive tooling, structural aircraft parts & interiors, surfboards, marine tooling, recreational equipment, custom car parts, hullboard reinforcement, repair kits, pipe wrap & medical casting.







Urethanes, Foams, Silicones, Epoxy & Equipment

BJB Enterprises is a leading manufacturer and supplier of thermosetting polyurethane, epoxy and silicone systems worldwide. They also manufacture and supply hand-held production meter-mixdispensing equipment, vacuum pump systems, and rotational casting machines, in which all can be customized to suit your needs.

Established in 1970, the main objectives at BJB Enterprises, Inc. have been to provide their customers with innovative product development. consistent quality products, and unsurpassed service. BJB is an ISO 9001:2008 certified company.

BJB products are used by a variety of industries and applications that include:

- Rapid Prototyping
- Automotive
- Production Parts
- **Medical Devices Theme Parks**
- Aerospace Artists
- Foundry/Pattern
- Special Effects
- Electronics

Revchem Composites carries BJB's full line of products.

Urethanes

Two component polyurethane resins that range from very soft to stiff, rigid plastics.

- Castable
- Machine castable
- Brushable
- Translucent
- Spravable
- Foams
- adhesives
 - Coatings

Silicones

Silicone casting rubbers used for a variety of molding and tooling applications.

- Platinum-based
- Silicone
- Tin-based
- accessories

RTM/VRTM

part sealer

Infiltrant/Printed

Epoxy

Laminating, surface coats, casting, adhesive, and potting epoxy systems for low and high temperature applications.

- Surface coats
- Laminating resin
- Casting epoxy
- Adhesive

Other Products:

Pigments, coatings and release agents as well as equipment.

Quality Casting & Mold Making Materials Foam Boards & Polyurethane Precision Board Plus



Since 1973, **Coastal Enterprises** has been an innovator and leading manufacturer of urethane products used for dimensional signage, model making, marine applications and a variety of tooling applications.

Precision Board Plus High Density Urethane (PBLT) is a "closed cell" rigid polyurethane product made specifically for applications up to 200° F of continuous exposure. PBLT High Density Urethane is available in a wide range of standard sheet sizes and standard densities and can be cut or bonded into a variety of shapes for final machining or shaping.

Precision Board Plus High Density Urethane (PBHT) is a "closed cell" rigid urethane foam board made specifically for applications up to 300° F of continuous exposure. PBHT High Density Urethane foam board is available in a wide range of standard sheet sizes and standard densities. It can be cut or bonded into a variety of shapes for final machining or shaping. Precision Board Syntactic Urethane (PBST) is the latest addition to the Precision Board product line. Similar to PBL, PBHT & PBST is a closed cell rigid urethane tooling board that is available in a wide range of densities and sheet sizes.

Common Applications for High Density Urethane

- Prototype Machining
- Thermoforming
- Prepreg Composite
 Lay-up Tooling
- Vacuum Form Tooling
- Tool Proofing

- Master Model Making
- Pattern Making
- Soft Tooling-all types
- Indoor & Outdoor Signage
- Sculptures Carvings
- •
- Coastal Enterprises will fabricate any size and shape to meet your specifications. This allows you to immediately start the machining process on arrival without bonding delay. Custom bonding not only reduces machine time, but saves on material costs as well.



elonboard.oc





Composite Resources

specializes in fiberglass boat construction, wood and fiberglass boat repair, and a full product line for surfboard manufacturing.

MARINE

Polyester Marine Lam Resin: Moisture resistant, laminating/ bonding resin for use with fiberglass cloth, woven roving or chop strand fiberglass matting.

Iso Marine Laminating Resin:

ISO/Polyester Marine Laminating Resin is a high strength laminating resin that can be used with fiberglass cloth, woven roving or chop strand fiberglass mat.

SURFBOARD

Clear Surfboard Epoxy Hardener:

Clear Surfboard Epoxy is a UV resistant, non-blushing, high strength epoxy system designed for construction and repair of surfboards made with EPS and extruded Styrofoam blanks.

Polyester Surfboard Gloss Resin:

Polyester Surfboard Gloss Resin is a blend of polyester resins designed for gloss coats or finish coats for surfboards.

POLYURETHANE

Polyester Surfboard Sanding Resin:

Surfboard Sanding Resin is a clear, UV stable, wax inhibited top coat resin. Ideal for sanding coats on surfboards, ding repair or any application where a clear top coat is required.

Polyester Surfboard Lam Resin: Polyester Surfboard Laminating Resin is clear and UV stable. Ideal for surfboard construction and repair.

UV Cure Polyester Surfboard Sanding Resin:

UV Cure Polyester Surfboard Sanding Resin is a clear, UV stable, wax inhibited top coat resin. Ideal for sanding coats on surfboards, ding repair or any application where a clear top coat is required.

UV Cure Polyester Surfboard Gloss Resin:

UV Cure Polyester Surfboard Gloss Resin is a blend of polyester resins designed for gloss coats or finish coats for surfboards.

OSS RESIN

Polyester Marine LAMINATING RESIN

omposite

Polyester Surfboard

Clear Surfboard Epoxy PART "A" RESIN

UV CURE Advantar Sarthauad UV CURE

GLOSS RESIN

composite

UV CURE

Polyester Surfboard SANDING RESIN

composite

UV Cure Polyester Surfboard Laminating Resin:

UV Cure Polyester Surfboard Laminating Resin is clear and UV stable. Ideal for surfboard construction and repair.

CASTING RESIN

Polyester Clear Casting Resin: Polyester Clear Casting Resin is a water clear mass casting resin. It is specifically formulated to cure at a slower rate with less heat which will help to alleviate the stress cracks that can occur with large castings.

FOAM

Polyurethane Foam:

G RESIN

Surfboard SANDING RESIN

composite

GEL COAT

Polyurethane Foam is a two-part pour in place system. Designed for use by hand mixing, power drill, jiffy mixer, or through plural component polyurethane dispensing equipment.

High Density Polyurethane Foams

Coosa Composites manufactures structural panels made of highdensity, polyurethane foam that is reinforced with layers of fiberglass. The no-rot and light-weight advantages of foam combined with the structural properties of fiberglass make Coosa panels an excellent replacement material for wood and other traditional core materials. Coosa panels are used throughout the marine, industrial and transportation industries in structural and non-structural applications.

Coosa produces panels that range from 4x8 ft to 5x12 ft and can precut kit parts for those that prefer an extra level of customized service.



Nautical Series



and a second second





NAUTICAL SERIES

- · High-density, polyurethane foam reinforced with layers of continuous strand fiberglass
- Nautical 15: Lightweight glass-reinforced coring panel that is highly economical. Thickness available $\frac{1}{2}$ up to 2"
- Nautical 20: Economic alternative in the Nautical line that offers low stress semi-structural strength. Thickness available ¼" up to 2"
- Nautical 24: One of Coosa's stronger and stiffer panels that can be used in low stress structural applications. Thickness available ¼" up to 2"

BLUEWATER SERIES

- High-density, polyurethane foam reinforced with layers of woven roving and continuous strand fiberglass
- Bluewater 20: Typically used as a semi-structural component. Thickness available ¹/₄" up to 2"
- Bluewater 26: Ultimate high strength-to-weight ratio. Thickness available 1/4" up to 2"

CFR SERIES

 UL94HB fire-rated approved. Panels are 40% to 60% lighter than plywood with water absorption less than 1.5% additionally; the panels are resistant to insect infestation and will not rot.



The **DIAB** structural core materials range has been progressively developed and refined to meet the many and varied requirements of its worldwide customer base.

Three Factors Influencing Finishing Selection:

Analyzing the three main influencing factors:

- 1. Success Criteria
- 2. Manufacturing Process
- 3. Geometric Curvatures

As you begin to evaluate and make decisions based on these factors, it is important to understand that they relate in unique ways depending on the type of application - meaning that each factor can influence the others.

Despite their high strength performance in service, all DIAB core materials are particularly easy to work with using conventional woodworking tools. They can be drilled, milled, turned and sawn to close tolerances. In addition to flat sheets, DIAB core materials are available in a wide variety of forms including grid-scored materials for female mould construction and kits.

With ISO 9001 accredited manufacturing facilities in the United States, Sweden and Italy plus operating subsidiaries in eight countries, we are able to offer an unrivalled level of support irrespective of where the client or the project are located.

Divinycell

The Divinycell range of polymer foam cores are the most comprehensive available. Each grade has been developed so that it meets a specific set of performance criteria. This allows designers, engineers and composite manufacturers to select the most appropriate material for their specific application. If you need excellent FST (fire smoke and toxicity) properties then look no further than Divinycell F or P. Each grade is available in a range of densities so that you can fine tune your selection. All grades are also available in a range of finishes to facilitate installation, enhance component quality and to meet process requirements.

For series production, all Divinycell cores can be supplied in ready-made construction kits.

Revchem Composites Signature Surf Products



Douglas Surf Co. is a division of Revchem Composites and the home for our signature offering of comprehensive surf products. Started in memory of Revchem Composite founder Doug Dennis, we created Douglas Surf Co. as a dedicated division of surf products with world-class board building and those who build them at its core.

- Acetone
- Additives
- Fillers
- Pro-Set Surf Epoxy
- Dura Technologies Epoxy
- Polyester Resin
- Pigments
- CatayIst and UV Initiators
- Carbon Tapes
- ESF Technologies Scrim
- Aerilte and Innegra
- Fiberglass
- Carbon Fiber
- Aramids
- Tapes and Adhesives
- Abbrassives

- Brushes
- Sanding Pads
- Buff Pads
- Polish Pads
- Gloves
- Masks
- Personal Protective
 Equipment
- Buckets
- Mix Cups
- Shop Supplies
- Leash Plugs
- Fin Plugs
- Fin Boxes
- Vacuum Bagging
- Arctic Foam Blanks

SILMAR

PRO-SET

Aerialite

Aerialite sets new heights in board technology. Since its inception, Aerialite has raised the bar for high-performance surf glass. The only fabric developed by board builders, Aerialite took two years of research and development to perfect. The result is a fabric that ensures the high-quality look and finish that surfers expect. Aerialite displays improved wetout and clarity, which increases the laminate strength and provides a smoother, whiter surface.

URATE

composite





World Class Surface Coating Technology Since 1976

Dura-Kote polyester gel coats are among the most vibrant and durable gel coats available to the composites industry.

Dura-Kote has engineered their gel coats to make your life easier and your products even more appealing. They are focused on your need for quality, simplicity, speed, and outstanding technical support.

Dura-Kote makes selecting your gel coat effortless. If you require a color they do not offer in the standard color guide, they will develop the custom color you need matched perfectly. Time is valuable, and Dura-Kote has the technology and experience to fulfill your orders quickly and accurately.

Dura-Kote is an industry leader in custom color matching, and they have quick turn around time. To find out more about Dura-Kote's custom color matching program, contact your Revchem Technical Sales Representative for details.





to ISO 9001

Dura Technologies, Inc. • Bloomington, California • ISO9001: 2008

Sealers, Primers and Topcoats for Manufacturing Professionals



The Duratec Product Line is famous for providing unique surfacing options for composites production.

Duratec Sealers, Primers and Topcoats have defined quality for plug and pattern surfacing for more than thirty years. The product range includes:

- Polyester products for fast cure, easy sanding and great glossy surfaces
- Vinyl ester products provide heat stability up to 300° F, plus great gloss transfer to tooling gelcoat

Duratec is an alternative to sanding gelcoat. Duratec primers, used in-mold, provide benefits by:

- Eliminating porosity
- · Reducing part weight
- · Providing an in-mold surface for epoxy laminated parts
- Duratec in-mold primers reduce surface defects and simplify necessary repairs

Duratec also provides unique products for resurfacing composite molds. The Duratec Vinyl Ester Primer and Topcoat provide a "better than new" surface for molds made with polyester, vinyl ester or epoxy laminate.

The Duratec Vinyl Ester Primers and Putties are easy-sanding fairing options for Marine Construction. The Duratec Marine System features tremendous water resistance, heat stability, and sanding advantages.

Other Duratec specialty products include:

- High Gloss Clear Polyesters for Interior Wood
- StyroSafe Resin for EPS foam
- Other air-cure products where high performance demands premium quality and performance



Hawkeye Industries



Performance and Structual Prepregs

Gurit's long history supplying prepregs to the wind energy, transportation and marine industries has allowed Gurit to lead the way by introducing the next generation of prepregs, specifically designed to make component manufacture faster, easier and cheaper.

Pre-impregnated materials (prepregs) are reinforcement fibers or fabrics into which a pre-catalysed resin system has been impregnated by a machine. The resin systems in these materials react only very slowly at room temperature, allowing a long shelf life and are cured by heating them to the prescribed elavated temperature.

Gurit's Prepreg offering is grouped into:

Performance Prepregs

High performance prepreg technology for the most demanding applications.

Structural Prepregs

Structural prepreg technology for faster, easier and cheaper large-scale composite components.

Prepreg Products Naming Convention

Gurit's comprehensive prepreg offering comprises of six main product groups aimed at out of autoclave processing:

- Epoxy Prepreg (SE or WE)
- Smartcure[™]
- SPRINT[™] (ST or WT) Film Infusion Technology
- SparPreg[™] UD Glass & Carbon Prepreg Solution
- Surfacing Films (SF)
- Film Adhesives (SA)
- Mono-component Pastes (SP)

What Are Essentials And Specialist Products?

Essentials - Readily available recommended products

Specialist - Application specific products available on request



Core Materials for the Marine Industry





Gurit: Lighter, Stronger, Faster – three qualities that are more important than ever in a world increasingly focused on higher performance. Gurit has been delivering those qualities for over 30 years working alongside the world's top boat designers.

Gurit is a leading manufacturer and supplier of composite materials to the global boat building market – integrating structural design, materials science, manufacturing technology and process engineering to ensure a solution tailored to individual specifications and needs. The expertise and products of Gurit are now used in more of the world's top performance boats than any other manufacturer.

- Structural Design
 Materials Science
- Manufacturing Technology
 Process Engineering

This unique offering and turnkey solutions for the build of performance boats has made Gurit one of the leading developers and manufacturers of composite materials in this market.

Gurit offers unrivaled solutions to make boats stronger, lighter and faster. This combination of industryleading, innovation and durable composite products with superior in-house technical expertise ensures bestin-class results.

The versatility and durability of Gurit products and the in-depth engineering knowledge deliver performance individually tuned to your specifications and needs. As a result, Gurit products are used in the majority of the world's high-performance boats.





Carbon Fiber, Fabrics & Reinforcements

Hexcel has 40 years experience in carbon fiber manufacturing, with a vast Aerospace database and manufacturing facilities in the USA and Europe. Hexcel is an Intermediate Modulus fiber technology leader with an in-house Polyacrylonitrile (PAN) domestic supply and dedicated R&T facilities for both precursor and carbon fiber development.

HexForce® Reinforcements

Hexcel manufactures the most complete line of reinforcements for aerospace and industrial markets. They offer a range of globally certified aerospace products in carbon, glass and aramid and specialty fibers that we sell under the HexForce[®] trademark.

HexForce® Bias Weave Reinforcements

Hexcel has developed a patented process to manufacture continuous rolls of carbon fiber fabric in which the warp and weft yarns are oriented on the bias at +/- 45° in standard plain or crow foot satin weaves.

PrimeTex®

PrimeTex® is a range of carbon fabrics which have been processed for a smooth, closed weave and uniform cosmetic appearance. The fiber tows are spread in both the warp and weft direction for unique aesthetic appeal. PrimeTex® fabrics are more uniform as the filaments in each tow are spread out creating a thinner and more closely woven fabric that provides better mechanicals and less porosity in a composite. It can also be used to lower the mass in a composite where lighter weight is the key characteristic.

Unidirectional Fabrics

Hexcel's unidirectional reinforcements are nonwoven carbon fabrics that have 99% of the areal weight in the 0 direction and are stabilized by a thin proprietary warp thread. These fabrics are ideal as a wet lay-up or resin infusion alternative to unidirectional prepreg tapes. Hexcel produces carbon unidirectional reinforcements in an areal weight range of 156 to 1200 gsm.

Prepregs & Resins



Resins and resin-impregnated reinforcements for high strength, toughness and structural performance at low weight. Hexcel provides a range of prepregs under the HexPly® trademark for aerospace and industrial applications, using specially formulated epoxy, phenolic and BMI resin matrix systems. HexPly® prepregs are reinforced with woven, multiaxial and unidirectional (UD) carbon and glass fibers.

HexPly® Prepregs for Aerospace

The aerospace industry is the greatest consumer of Hexcel prepregs, for civil aircraft, military jets, helicopters, aero-engines or space satellite and launchers. Hexcel's range of resin formulations for aerospace prepregs includes a wide range of epoxies for highly loaded parts and supreme toughness; BMI systems for high temperature performance; phenolics for fire, smoke and toxicity performance in aircraft interiors; and cyanate esters for space structures and satellite applications. HexPly® prepregs are available with HexForce® woven and multiaxial reinforcements, or as unidirectional tapes in various forms.

HexMC® Molding Composite

HexMC® is a high performance molding material, suitable for the production of complex shaped parts and specifically designed for compression molding. With long carbon fibers (50mm) and a low resin content, HexMC® provides better mechanical properties than any other short or long fiber molding compound.

HexMC® Aerospace Grade

As new generation commercial aircraft and jet engines increasingly use carbon fiber composites for large flight critical structures, a number of smaller complex geometry parts are required to connect these structures together. In the past these connector parts have been machined, cast or forged from aluminum, titanium or steel. However, Aluminum parts are sensitive to fatigue and corrosion and require frequent inspection and maintenance. Steel is heavy and sensitive to corrosion while Titanium adds significant weight and cost.

HexMC®-i Industrial Grade

For industrial applications the HexMC®-i epoxy resin system cures in a short cycle - from 2 minutes at 150°C depending on part thickness. Complex shapes can be achieved and inserts can be integrated during the molding process. HexMC®-i is particularly beneficial for sporting goods, automotive and marine applications, as well as a wide range of industrial components.









High Performance Coated Abrasive Technology

Founded in 1979, **INDASA** is now one of Europe's leading manufacturers of high performance coated abrasive technology.

From its headquarters in Aveiro, Portugal, the company specializes in the production of innovative sanding materials and systems that deliver market specific solutions to a wide range of manufacturing and service industries. A recent program of large scale investment has resulted in the manufacturing plant becoming one of the most modern production facilities in Europe, with increased capacity to respond to the growing demands of the global market for Indasa's Rhyno brand of abrasive products. The consistently high standards of development, production and marketing of coated abrasives have earned the company a number of globally recognized accreditations over the years.

White Line

High cutting power. Great to get the job done quickly. High resistance to loading. Good surface finish. Great value for the money.

Plus Line

High flexibility, extended life. Perfect finish and resistant to cracking.

Red Line

Extended life. High performance on hard materials. Superior cutting with high end finish.

CoREZYN® & Silmar® Brand Resins



Silmar® Resins was acquired in 1993 by Interplastic Corporation and has been formulating isophthalic and orthophthalic polyester resins for over forty years. Silmar is the brand recognized as the leader in today's casting resin market. They also have a complete line of panel and molding resins.

The Thermoset Resins Division supports the Fiberglass Reinforced Plastics (FRP) and Cast Polymer/Solid Surface industries by directing all its technical inventiveness and manufacturing resources at FRP and Cast Polymer applications. Technical experts and their laboratory testing facilities work with you to formulate resins for new applications or troubleshoot manufacturing issues. When combined with the extensive CoREZYN[®] brand products in Interplastic's Thermoset Resins Division, they are able to offer customers an impressive product line that can support nearly any FRP application. All products are supported by the most professional, well-trained distribution network in the industry.

The Thermoset Resins Division is a leading manufacturer of unsaturated polyester, vinyl ester, and specialty resins and gel coats marketed under the CoREZYN[®] and Silmar[®] brand names. These products are especially designed for the rigors of modern applications and closed molding manufacturing techniques. They meet the stringent standards of MACT and the EPA where necessary.



Applications

- Automotive
- Bowling Balls
- Corrosion Resistant
- Cultured Marble/Onyx Granite Effect/ Engineered Stone
- Cured-In-Place Pipe (CIPP)
- Deburring Chips
- Fire Resistant
- Marine/Pool/Spa
- Sanitary Ware/Bathware
- Solid Surface
- Surfboard
 - Transportation

Products

Isophthalic Resins Low VOC Resins Orthophthalic Resins Putty Resins and Low Profile/ Low Vinyl Ester Resins Volume Enhancing Resins

Process

Casting Laminating Panel Pultrusion









Since 1869 OBO: It was a long way from a sawmill for tropical timber to a supplier of a diverse range of tooling products for model, tool and mould making. Today, we are your competent partner with a team of service oriented professionals for the implementation of your ideas.

Since 1980, OBO has been manufacturing obomodulan[®] and covers with these polyurethane boards a range density between 80-1600 kg/m³. OBO produces for many years the RenShape® polyurethane boards for Huntsman Advanced Materials. Since 2014 the RenPaste™ modeling pastes and RenShape® epoxy boards complement the product range, which are manufactured under

licence of Huntsman. In addition, we are the master distributor for the Huntsman tooling liquids in Europe.

We combine quality and sustainability

For many years already we optimize the sustainability of our obomodulan® products.

In this context we clearly state that we are not prepared to compromise on quality. The professional approach of our R&D department lead e.g. to the achievement of implementing renewable raw materials.

We recycle off-cuts and use them as additional raw materials during production of new obomodulan® boards.

	210		
	302		
	500	Identification #	Applications
		210	Architectural Models Prototype Models
	600	302	Architectural Models Prototype Models
	652	500	Master Models
	652HT	600	Master Models
- /		652	Pressing Tools
	700	652HT	Pressing Tools
	850	700	Pressing Tools
	1200	850	Pressing Tools Checking Fixtures
	-	1200	Core Boxes Foundry Patterns



- ·Homogeneous and smooth surfaces
- Even, superfine cell structure
- High edge stability
- Small thermal expansion coefficient
- · Easy to machine with low dust formation
- •Wide variety of types for all applications





Laminating, Infusion & Tooling Epoxies PRO-SET.



Use PRO-SET Epoxy to create strong, lightweight composites that can withstand the harshest environments. PRO-SET meets your highest goals in composite performance.

PRO-SET has reformulated and expanded their standard epoxy product offerings to best meet the needs of modern, high-performance composite manufacturing.

Standard PRO-SET Epoxies for Laminating, Infusion, Tooling and Assembly offer improved handling characteristics, excellent cure, and rapid order fulfillment at competitive prices.

Laminating Epoxies are a versatile system of liquid resins and hardeners designed to meet a wide range of wet lay-up laminating applications.

Infusion Epoxies are super low viscosity systems with a range of hardeners to meet the demands of modern infusion processes.

Assembly Adhesives are pre-thickened, two-part epoxy adhesives used for secondary bonding of laminated composites as well as steel, aluminum, cast iron, concrete, stone, and most woods.

Tooling Epoxies are 2-part pastes formulated for surfacing molds and plugs.

Surfboard Epoxies are ultra-clear systems formulated for high-volume production with excellent sandability and outstanding cosmetics in the show room and on the waves.









Vacuum Bagging Supplies & Process Materials





Infusion & Vacuum Bagging

Vacuum Infusion is a fabrication technique that uses vacuum pressure to drive resin into a laminate. Vacuum Bagging is a technique that uses vacuum pressure on a composite laminate during the cure cycle. Pressurizing a composite lamination serves several functions. First, it removes trapped air between layers. Second, it compacts the fiber layers for efficient force transmission among fiber bundles and prevents shifting of fiber orientation during cure. Third, it reduces humidity. Finally, and most important, the vacuum bagging technique optimizes the fiber-to-resin ratio in the composite part.



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Mold Release & Surface Care







TR Industries was founded to provide mold release products for manufacturing of fiberglass, reinforced plastic and cultured marble. From the initial plug to the mold and onto the finished part, the complete line of TR professional quality compounds, releases, polishes and related products are designed to produce the best finish possible at maximum efficiency and minimum cost. In response to the manufacturers' requests for after sale care, TR developed a line of surface care products. Expanding this to accommodate marine and recreational vehicle needs, TR further expanded its product offering to meet the needs of surface care in the 21st century lifestyle.

- Semi Permanent Release System Multi-Pull 900, 910, 920, 930
- Mold Prep Cleaner
- Sealer Glaze
- White Release Wax
- **External Liquid Release**
- **Hi-Temp Liquid Release**
- **Regular Compound**
- Mold Release
- **Fine Finish**
- Super Duty Buffing Compound





Exceeding Your Expectations

United Initiators is a leading manufacturer of ketone (MEKP) and diacyl peroxides.

Ketone Peroxides

These products are the workhorse organic peroxides of the ambient temperature cure processes. Included are Methyl Ethyl Ketone Peroxides (MEKP), Acetyl Acetone Peroxide (AAP), and Methyl Isobutyl Ketone Peroxide (MIBKP). These formulations enable almost every type of cure process.

Organic Peroxide Mixtures

Some difficult cure applications require a blend of ketone peroxide (MEKP, AAP or MIBKP) with other organic peroxides, such as hydroperoxides, peroxyesters, and peroxyketals. We currently offer a range of commercial mixtures for ambient and elevated temperature cure organic peroxides.

Hydroperoxides

Cumene Hydroperoxide (CHP), Dicumyl Peroxide (DCP) and t-Butyl Hydroperoxide (70%) are organic peroxides that have applications in composites curing, vinyl polymer polymerization and crosslinking.

Diacyl Peroxides

Benzoyl peroxide (BPO) is an organic peroxide known for its unusual stability and performance in applications such as auto body fillers, specialty ambient and elevated temperature cure composites processes, and styrene polymerization. Products come in granular (water-wet), paste and liquid suspension forms, and all paste and liquid suspension formulations are free of any phthalate ester diluents (plasticizers).

Peroxyesters, Peroxyketals

and Peroxydicarbonates An extensive line of these organic peroxide products are available from United Initiators for elevated temperature curing of polyester resin composites. (Availability varies by country and region due to transportation regulations.)

Hand Lay-Up & Spray Gun Lamination

The most widely used manufacturing technique to produce reinforced composites parts in the construction, marine,

and corrosion resistant markets, as well as a myriad of other enduse applications.

Cast Polymer

Processes used to produce polymer concrete, synthetic marble, solid surface and other durable products for building and construction.

Filament Winding

A process of glass fiber reinforcement for maximum strength attainment in the manufacture of pipe, tanks and other similar products.

Vacuum Infusion

This process employs a vacuum to move resin into a laminate. It is used for aircraft wings, windturbine blades, large marine hulls and decks and other parts.

Pultrusion

A continuous, automated process of pulling reinforcing fibers through a resin and into a heated die. Pultrusion is cost effective for producing high volumes of complex cross-sectional parts.



Strong, Lightweight & Durable Composite Reinforcement









V2 considers themselves reinforcement architects - they are detail oriented, focused on performance and can accommodate even the most "outside of the box" concepts. They take the time upfront to understand your product's unique intricacies so they can develop a reinforcement solution that aligns with your performance goals.

V2's fabrics are crafted from a variety of fiber types, including fiberglass, carbon and aramid. Whether constructed of a single fiber type or a hybrid blend of fibers, each fabric is designed to address the mechanical and economic requirements of its intended use. Varied fiber types and weights can be blended within an individual layer, and can also be combined with mats or veils. This significantly expands the range of properties that can be achieved with a more cost-effective composite solution.

V2's patented V-Lock® stitch technology propels composite reinforcement fabrics to the next level with high-performance fabrics that don't unravel.

V2's Custom-Tailored Composite Reinforcements

- Stronger, structurally efficient fabrics
- Non-crimp construction improves mechanical properties
- Custom stitch configuration controls drape and density
- Long-term fatigue resistance
- Outstanding flexural strength
- Greater impact resistance
- High stiffness-to-thickness ratio
- High fiber volume
- Predictable laminate properties

Aerospace

- Architecture
- Blast mitigation
- Construction
- Marine
- Military/Defense
- Sporting goods
- Seismic retrofit
- Structural rehabilitation
- Transportation
- And more



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Composite Solutions... Delivered Daily