Structured Composites and Integrated Media for the Specialized Materials Market
Process to “wet lay” non-cellulose friction composites

The demands of the automotive friction market called for the continuous development of high tech friction media materials with greater thermal stability and stable torque performance. Knowlton’s development group met the challenge by developing several processes to manufacture totally non-cellulose friction materials on Fourdinier equipment, while constantly finding new ways to continuously improve upon these unique processes.
Weird Science

We explore science like no one else, creating exotic structured media utilizing a host of diverse materials and fibers to create high strength, energy-saving alternatives as strong as steel - but with a fraction of the weight. In addition, our capability to handle many operations (i.e.: laminations, chemical treatments, etc.) enables us to meet exacting customer requirements quickly and cost-effectively.

Our wetend chemistry expertise is a core foundation, upon which we build composite webs from materials normally deemed next-to-impossible to include in a wet-laid process. While others may take months or years - or even give up - Knowlton engineers process complicated materials in a few hours, or a few days.

A high temperature resin compound for military/aerospace hydraulics

A high temperature resin compound for military/aerospace hydraulics was requested. The Aerospace Industry needed a flexible resin system that could survive the high temperatures and brutal environment of helicopter hydraulic systems. The Knowlton team developed a high temperature resin compound to exceed the requirements of these extreme conditions.
An automotive components OEM had a conceptual formula for a media whose composition was primarily made up of mineral granules much heavier than water. The Knowlton team developed an ionic-controlled process to suspend the materials in a greater than 95% aqueous system to form into a wetlaid composite media.
CHEMISTRY CREATES SUCCESS

Within the “HyperSpecialty” material segment, we remain steadfast to our customers’ needs, applying our “problem-solving expertise” to develop technical applications, products and processes. But there’s more. Applying the right chemistry to meet the needs of our customers means working in partnerships within select markets where our technical and service capabilities add value. It’s about asking the tough questions and working hard to understand our customer’s expectations and true end-use requirements. From rigid company-wide adherence to confidentiality, to our niche collaborations— as needed— with other mills, you’ll quickly discover we’re more than just another paper company.

A silicatious media to protect military armament PC components

When preparing delicate computer components for shipping as part of a military/defense contract, a customer needed to protect the components in a wet environment, while at the same time not expose them to damage from an absorbent pack. Knowlton engineers developed a process to wet lay a technical board material that acted as a silica absorbent and provide the protection and security needed while the components were in transit.
NO MORE PAIN

Sick of dealing with all those technology roadblocks? Whether in processes, materials or development, Knowlton has the experience and expertise to solve your wet-laid problems. Give us the opportunity and we’ll show you how we make technology meet performance.

When the task is tough and the stakes are high, challenge us! Call on the knowledge of Knowlton. Even if you cannot imagine how to put a material into a web, we can, and will, or it can’t be done!

A process to hold carbon-char in place for intumescent barriers

Knowlton developed a specialized densifying process for a proprietary thermoset polymer that resulted in a high performance fire and flame retardant barrier. This combines notably longer thermal defense and burn-through protection characteristics as the product swells as a result of heat exposure.

Intelligence by design
The Knowledge of Knowlton

Customers come to Knowlton because we know how to make products where others fail.

- Rapid prototype & sample development
- Removal of technical roadblocks
- Development of intellectual property
- Design, engineering and manufacture of wet-laid non-wovens
- Solvent saturation services
- Material processing specialists
- Custom designed webs, veils, sheets, prepregs and pre-form webs
- Fire retardants, heat, noise and radio frequency shields/substrates
- Conductive and non-conductive media and papers
- Porous, absorbent and anti-corrosive media
- Performance & filled composite media development
- Micro-glass media

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Intelligence by design

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