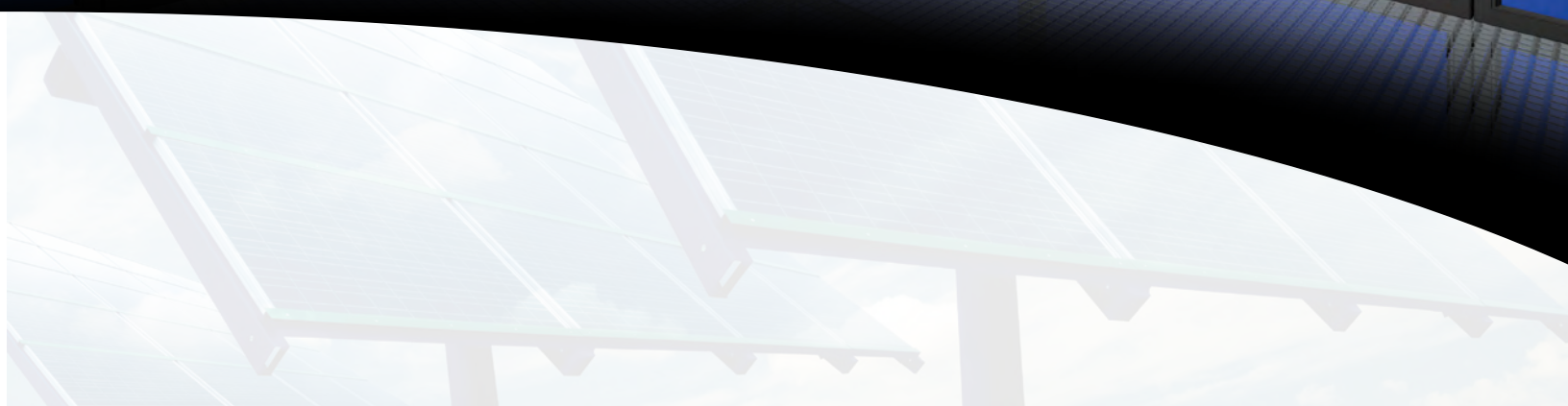




VCF Films

superior **thin film solutions** for highly engineered products





From solar panels to medical probes, thin films are revolutionizing a wide range of industries and fueling new innovations around the world. With billions of dollars in new technologies and wide open markets riding on just a few microns of material, thin film quality has never been more important.



Industries Served Today and Tomorrow

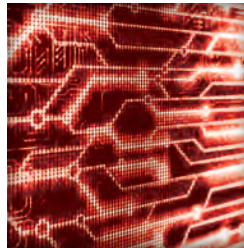
VCF supports all of your manufacturing and R&D needs.



Display Panels

VCF's solvent cast films are unmatched for clarity, strength and permeability control, making them ideally suited for LCD and OLED applications. Our custom-designed slot die coating line is perfect for prototype, batch and large scale production of

films and coatings for a wide range of display applications.



Micro Electronics

Ultra-thin lithium ion batteries require separator films to maintain integrity between anode and cathode and prevent a short circuit. VCF's high quality production capabilities, including microscopic pores and filled coatings, provide the perfect

environment for development of separators, cathode layers and anode layers for use in lithium ion batteries.



Solar

An industry limited for decades by rigid substrate/crystalline silicon panel production costs is now wide open thanks to thin film. The rapidly developing flexible substrate segment is tailor-made for roll-to-roll (R2R) conversion coaters such as VCF.

R2R conversion puts solar photovoltaics on a flexible web at incredible speeds, and packages the resulting photovoltaic film in roll form for ease of transport and downstream finishing processes.



Automotive

From interior laminates to exterior protection, VCF can produce films that keep that new car shining for years to come. Our experience in the automotive market and our Michigan plant location makes us a perfect partner for industry suppliers

looking to meet the high quality demands of today's OEMs and aftermarket manufacturers.



VCF Films

VCF's unique combination of high-quality film production and ultra-thin coating capabilities are the perfect solution for today's production challenges and tomorrow's game-changers.



Medical/ Pharmaceutical

Medical equipment readings are only as good as the sensors and electrodes at the point of patient contact. Using blemish-free solvent cast films and slot die coatings that maintain uniform conductivity at any specified

thickness, VCF is able to produce the world's finest electrode and sensor films for EKG, ECG, defibrillators, neural/muscular stimulation and many other medical device applications. VCF's clean-room and conversion production capabilities also yield coatings suitable for implantable devices, pharmaceutical packaging and dispensing items, pressure-sensitive adhesives, diagnostic strips and dermal patches.



Building/Construction

Acrylic film protects signage, building and architectural products in tough outdoor conditions and adds luster to indoor products. Nobody has more experience producing solution cast acrylic films than VCF. Let us show you how our

films can add years of beauty and shielding to your new products.



Optics

Tightly controlled deposition rates and the unparalleled clarity and uniform thickness capabilities offered by solvent casting/solution slot die coating make optical properties such as reflectivity, diffraction, transmission and wavelength

interference predictable and controllable across a broad spectrum of coatings and substrates. VCF's solvent processes and expertise yield consistent thin films with highly desired optical properties for consumer and industrial applications.



Holographics

When security is paramount, so is the quality of your thin film. All of our polymer films are solvent cast. They're blemish-free with dimensional stability, tensile strength and optical clarity ideally suited for holographic applications.



Aerospace

Our high temperature films offer perfect solutions where flame and heat resistance are not just important, they're critical to the usefulness of the component. Whether OEM or retrofit, our films provide essential protection to sensitive materials.

At VCF Films, we've devoted nearly 50 years to delivering highly engineered thin film and coating solutions to industrial manufacturers and converters worldwide. Our slot die coating process for producing polymer films is the most precise method of thin film manufacturing, yielding the world's thinnest films that are pinhole

and gel free across large batch runs, with optical clarity and dimensional stability unmatched by other processes or manufacturers. We work with a wide variety of polymers, solvents and additives to meet very specific customer coating and film needs in virtually every industry requiring critical components and tolerances.

Some of our products...

High temperature films including polyetherimide and polyphenylsulfone, among others, for high temperature applications including flexible electronics.

Flexible polyurethane and silicone films ranging from ultra-clear and ultra-weatherable paint protection films to very flexible and hydrolytically stable medical grade films.

Weatherable films include PVDF and acrylic for clear layers on a flexible solar panel or weather protective layers on signs.

VCF can also add specialty fillers in high percentages, as necessary for conductive films, flame resistant films and lithium ion battery coatings.



Our Production Environment

VCF is globally-renowned for producing the highest quality thin films and coatings including PVC, cellulose acetate butyrate, acrylic and shrink film.

With our state-of-the-art custom slot die coater and clean production techniques, VCF Films brings a half century of solution casting mastery to the unique thin film converting challenges and opportunities of the 21st century.

With efficient fluid pre-metering in a completely closed system, VCF greatly reduces the possibility of contamination that is prevalent in the more common recirculating/contact coating processes. Our advanced solution coating line also allows us to coat on a wide variety of substrates including paper, plastic, fabrics and metals.

We coat with many different polymers and solvents allowing us to produce material to your exacting performance specifications and end qualities.

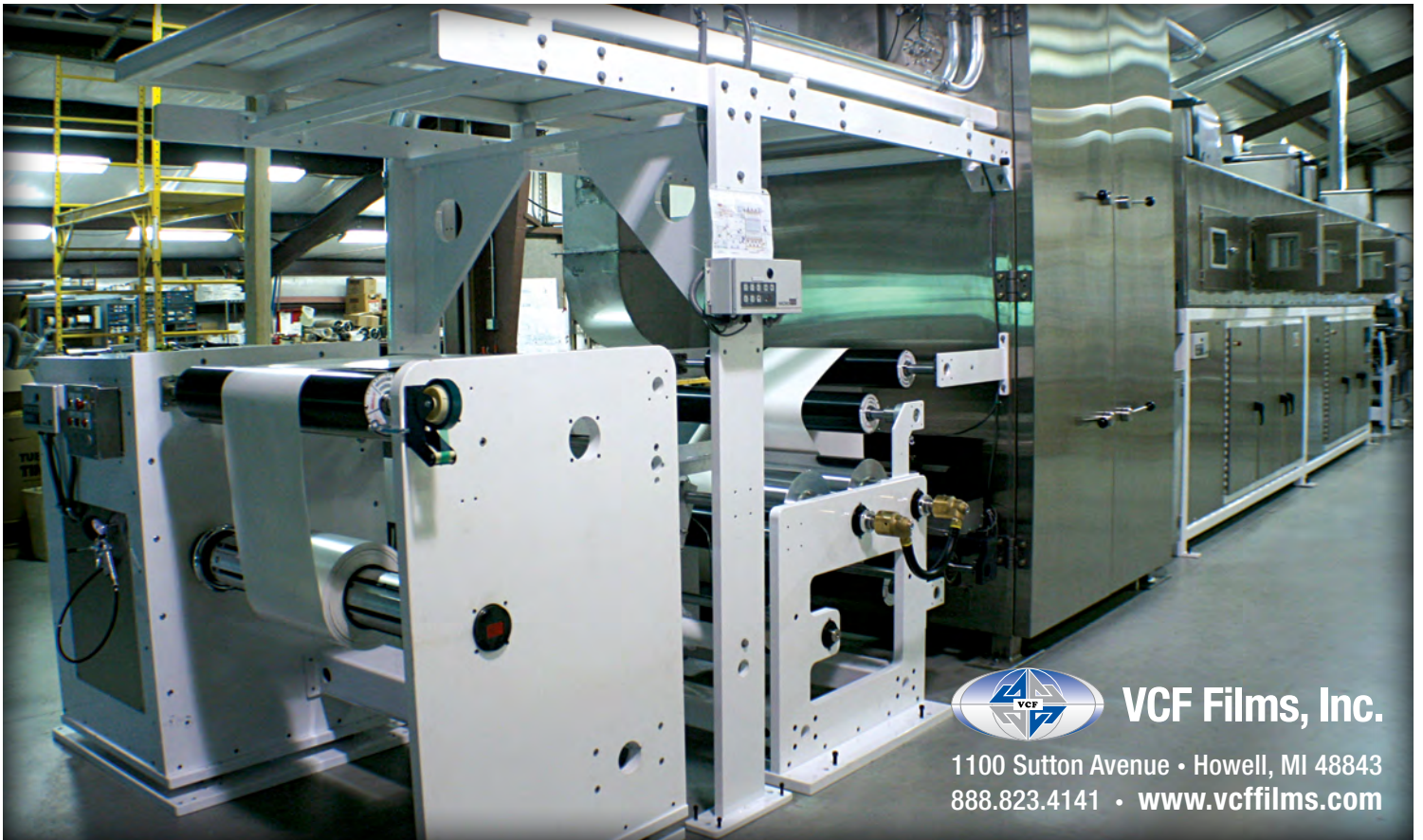
No Compromises

Product quality. Production efficiency. You shouldn't have to sacrifice one to get the other. That's why VCF installed a state-of-the-art solution slot die coating line that gives you the best of both worlds. From the smallest batch runs in support of R&D trials, to open-ended mass production, VCF guarantees consistent coating quality across a broad spectrum of roll-to-roll substrates and production line speeds.

In 2011, VCF invested our 50 years of solvent casting industry leadership and 200 years of collective thin film engineering expertise into a new custom-designed slot die coating line that features:

- **Unmatched profile uniformity.** Using the most accurate sensors and feedback software, VCF maintains precise control over down-web and cross-web coating profiles. The result is a coating with incredible profile consistency at any thickness and roll length.
- **A greener footprint.** VCF consistently strives to reduce its carbon footprint and any negative impact on the environment by employing the most up-to-date technology and business practices available.

“VCF guarantees consistent coating quality across a broad spectrum of roll-to-roll substrates and production line speeds.”



VCF Films, Inc.

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