MEGTEC is a leading global design, engineering and manufacturing company providing industrial products and services to a diverse customer base serving a wide variety of market sectors. Our technology in industrial web coating and drying have made us the recognized leader in designing and manufacturing optimal solutions for advanced manufacturing processes.

MEGTEC provides turnkey solutions or single unit operations for membrane manufacture that include raw material handling, fluid delivery, web handling, coating, casting, rinsing, tension control, curing and drying equipment as well as solvent recovery systems and regenerative thermal oxidizers for emission control.

MEGTEC has built equipment for lab, pilot and production lines for a broad range of membrane technologies including the following types:

- Reverse Osmosis
- Microfiltration
- Fuel Cells
- Battery Separators
- Gas Separation
- Apparel
- Ultrafiltration

MEGTEC has strong process engineering skills with extensive hands-on experience. Working side-by-side with our customers in MEGTEC’s R&D Center located in De Pere, Wisconsin, we develop and optimize processes.

Membrane Unit Processes

- Solution Prep & Dispensing
- Casting/Coating
- Precipitation Coagulation Cure/Rinse
- Drying Annealing Stretching
- Solvent Recovery
- Air Pollution Controls
- Web Handling & Rewinding
- Web Handling & Unwinding
Web Handling, Coating & Rinsing

Web Handling
Megtec offers web conveyance systems that meet demanding standards for tension control, precision guiding and high productivity. Drive systems that provide precise speed and tension control over a wide range of substrate materials, tensile properties, thicknesses, and width. Precision web guiding systems for accurate web conveyance and coating registration control. Fully automatic unwinds, rewinds, splicers and accumulators offer continuous, production capability. Single position unwinds and rewinds are offered for batch applications. Web inspection, coatweight control and data acquisition systems are fully integrated to maximize quality and productivity.

Casting / Coating
Megtec coating systems are engineered to meet high quality, uniform coating specifications. A wide range of coating applicator designs are available to meet specific coating requirements. Megtec has extensive experience with slot die solution coating processes. Fixed-lip and flexible-lip die designs provide uniform, precise coating control in the most demanding applications.

Precipitation & Rinsing
Megtec provides immersion tanks for processes that require precipitation reactions and other chemical treatment and rinsing operations. Tanks are designed for good web handling performance and ease of threading as well as durability and chemical resistance.
40+ years of experience, more than 100 patents and thousands of installations worldwide have made MEGTEC the recognized leader in drying.

MEGTEC’s extensive roll-to-roll drying, curing and thermal air handling experience covers a wide range of web materials such as:

- Ultra-thin films
- Composites
- Woven
- Non-wovens

**Full Range of Customized Dryer and Oven Styles and Designs**

MEGTEC offers a wide range of custom convection or hybrid styles and designs. Designs can include different types of heat sources, zone lengths, web widths and nozzle configurations, while providing superior drying, curing and web handling:

- Flotation
- Convection/IR combination
- Roll support
- Festoon
- Drum
- Clean room dryers
- UV
- Tentering
- Inert

MEGTEC can also combine infrared with flotation or impingement drying systems to enhance the performance of the overall drying or curing process.

MEGTEC ovens can be designed in horizontal, vertical, or arched configurations depending on the specific product and space requirements.

**Infrared (IR) Configurations**

MEGTEC offers a wide range of infrared (IR) configurations to meet the demands of a variety of products and applications. These include systems designed for complete drying, preheating, pre-drying, fusing, curing and profiling. By combining the correct wavelength infrared and optimizing of the control system, precise process conditions can be achieved to maximize product quality in the most efficient manner.
Solvent Recovery

A MEGTEC System for both gaseous and liquid streams will enable you to:

- Recover up to 99%+ of all your solvents for re-use.
- Exceed regulatory requirements economically by removing VOCs or HAPs from your manufacturing process emission.
- Increase profitability by virtually eliminating solvent expense.

These systems are based on today’s most advanced and reliable adsorption and distillation technologies. They are site-specific and add long-term value to your manufacturing operation allowing you to recover high quality solvent-based products.

**Carbon Adsorption: The Natural Method of Solvent Recovery**

Carbon adsorption is based on a natural phenomenon in which volatile organic compounds are adsorbed from an air (or other gas) stream in the microscopic pores of activated carbon and released when heated for recovery. Activated carbon is the most versatile of all adsorbents because of its broad pore size distribution and pore volume. Consequently, it is suitable for solvents with a wide range of boiling points and chemical structures such as Alkanes, Alcohols, Esters and Ketones, Cyclic compounds and Halogenated solvents.

**Condensation**

Condensation offers an alternative to solvent recovery from the exhaust air stream. The liquid is collected in a transfer tank and piped directly to the storage tank which is ready for purification. The two stage heat removal allows efficient heat recovery to minimize operating costs for the production line. A broad range of solvents can also be recovered via condensation.

**Distillation**

On site distillation closes the loop and minimizes solvent purchases. The purified solvent meets or exceeds the quality metrics of virgin solvent. MEGTEC can provide a complete recovery and purification solution to support the manufacturing process.

**PERFORMANCE BENEFITS:**

- Exceed EPA emission control requirements economically for environmental compliance
- Recover solvents for reuse for reduced manufacturing costs
- Wide range of airflows and solvent loadings
- Suitable for wide variety of solvent types
- Very high emission control and recovery efficiencies
- High turn-down ratio
- Materials of construction for minimal maintenance and extended equipment life
- Designed for ease of maintenance and operability
Air Pollution Control

For applications where solvent recovery is not appropriate, MEGTEC offers regenerative thermal oxidation (RTO) systems in different sizes and configurations for environmental compliance.

By applying our industry knowledge and expertise in process air handling, MEGTEC provides equipment that delivers regulatory compliance without affecting the performance of your process line or the integrity of your end product. With more than 4,000 equipment installations worldwide, we have both the industry experience and regulatory knowledge to design the right air pollution control solution for your process.

MEGTEC regenerative thermal oxidizers are available in sizes ranging from 4,000 scfm [6308 Nm³/hr] to 90,000 scfm [141930 Nm³/hr] capacity, in single and multiple can designs.

Upgrades, Rebuilds, System Integration & Field Services

MEGTEC offers Aftermarket Services, Upgrades, Rebuilds, System Integration, and Field Services for the complete coating line including: web conveyance, coater, dryer, and solvent recovery system or oxidizer.

- Existing equipment capability and process evaluation
- Line speed upgrades and system expansion
- Installation and commissioning of web treatment systems, measurement systems, web handling, and auxiliaries
- Web path modifications including backing roll and idler roll upgrades
- Addition or upgrade of drying zones including air bars/nozzles and heat sources
- Air flow balancing, drying efficiency and exhaust reduction
- Optimization of air flows, temperature/pressure controls, tension controls, roller alignment, and vibration analysis
- Retrofitting complementary post-treatment process equipment
- Replacement reboilers & heat exchangers
- Replacement distillation column trays & packing material
- Equipment relocation
Laboratory Coating Line

MEGTEC has developed an easy-to-use laboratory coating line designed for short production runs. MEGTEC’s coating line offers the capability of producing up to 250 mm (10”) wide coated substrates running at speeds up to 3 meters/minute (10 feet/minute).

The coating line consists of the following equipment:

- Cantilevered unwind and winder
- Precision coating module with comma coater or slot die coater
- Convection dryer with either impingement or flotation nozzles to dry the coated side of the web
- Modular, one-piece design requires minimal space for easy installation in a laboratory environment
- Approximate footprint 4500 mm long x 1100 mm wide x 2000 mm high (177" long x 43" wide x 79" high)

MEGTEC R&D Center for Process Development

The pilot line in MEGTEC’s R&D Center facilitates process development and optimization for our customers. This tool helps accelerate the deployment of new materials, products and technologies.

- Multiple coating method capabilities
- Web widths up to 600 mm (24”)
- Tension range 5 lb. or 22 N (total) to 100 lb. or 445 N (total)
- Corona and plasma treaters
- Ross dispersing mixer
- TA instruments DHR 1 parallel plate rheometer
- (3) 1.5 meter (5’) zones

- Rated mechanical speed up to 2000 fpm (610 meters/minute)
- Laminator, both wet and dry ends
- High performance fluid delivery
- Thickness gauges
- Solvent Capable