



Pope Toll Distillation Services for Heat-Sensitive Materials



Specializing in High Vacuum Molecular Distillation, Evaporation and Fractionation

Capabilities & Services Include the Following

- Wiped-Film Molecular (Short-Path) Distillation
- Wiped-Film Evaporation (WFE)
- Hybrid Distillation - (WFE & Fractional distillation combined)
- Lab Trials, Pilot Scale Studies, Process Development

Pope Wiped-Film distillation equipment allows the separation and purification of difficult materials which are high in: boiling point, melting point, viscosity or heat sensitivity, with excellent results. The high vacuum and short residence time ensures that your finished product is of the highest possible quality and yield with the lowest amount of thermal degradation. The

Pope process has been proven in critical and high purity applications in many industries and validated for GMP processing in food, pharmaceutical and biomaterial operations. Pope's tolling services are FDA and Wisconsin-licensed for food manufacturing. Kosher and halal certification available.



Pope Toll Processing — Minimizing Process Development Cost, Risk and Time-to-Market

Multiple Processing Configurations with Expansive Capabilities

Pope's toll processing equipment currently handles throughputs ranging from 50 ml/hr to 350 l/hr for processing feedlots of 1 liter to many tons. All Short Path/Wiped Film Still toll distillation units can operate to extremes of 0.001 mm Hg vacuum level and to beyond 325°C. These toll processing units are configurable as molecular stills, evaporators or hybrid evaporator/fractionators, in single or multiple stages. For certain applications, batch or continuous fractional still equipment can also be made available.

Lab Trials

Lab scale trial services are performed by Pope's distillation experts using clients' starting materials (typically 1-2 L), to demonstrate feasibility and to collect and return processed samples for customers' analyses, followed by technical summary discussions. Trials utilizing our Pope 2" still are a natural first step towards quotations for appropriate equipment supply, for pilot plant studies, or for advanced process development services which may lead to possible contract toll distillation services and/or turnkey system provision.

Pilot Plant Distillation

Pope's pilot scale distillations are performed on our 4" and 6" wiped-film molecular stills. Pilot runs are a good fit for customers with a small amount of material (20-400 kg) to process. In addition, pilot runs are fully scalable to production processing equipment and can be used to perform rate studies and to determine conditions and accurate pricing for tolling services. Wiped-Film molecular distillation, evaporation (WFE), and hybrid fractional distillation configurations are all available, including multistage arrangements. For complex applications, advanced process development projects may be contracted. In-process GC and other analyses can be performed as needed.

Toll Distillation Services

Pope has three separate plant systems. One system consists of a 20" still and the other two are twin 12" stills. Both traditional molecular distillation and hybrid fractional distillation are available. Average throughput per day is 800 – 2500 kg depending on which system is used. All Production stills are equipped with a degassing stage prior to the still. Some plant systems are capable of multi-stage distillation by linking several stills together. Final products are packaged in customer provided-containers and all streams are returned to the customer. In-process GC and other analyses can be performed as needed.

Updated Lab and Processing Equipment

Our equipment is continuously being upgraded with various new componentry and configurations to assist in our customers' process development and outsourcing needs. These upgrades enable us to provide state-of-the-art toll distillation and testing services that are cost efficient and reliable, with superior results. Contact us to discuss your distillation application for more information on current equipment and capabilities.

Additional Services

- Assistance with upstream or downstream process development and scale-up
- Feasibility testing prior to toll processing
- Custom manufacturing
- Processing to food GMP requirements
- Complete turnkey processing, pilot plant and laboratory equipment manufacturing, sales and service
- Guidance from concept to commercialization

Toll Distillation Processing is your solution for:

- Edible oil deodorization and deacidification & purification
- Vitamin, nutraceutical, extract and biomaterial separation
- Cannabinoid concentration
- Food, flavors and fragrance isolation
- Polymer and silicone polymer devolatilization
- Wax and silicone fractionation
- Specialty chemical purification
- Decolorization
- Moisture removal
- Many more

Pope, a world leader in difficult thermal separations, offers:

- A long history of success in helping clients solve process problems and optimize processes
- Staffed by highly trained, experienced Chemical Engineers, Chemists, Technicians and Toll Process Operators
- Over 45 years experience in the design and manufacturing of Wiped-Film Still Systems
- Versatile Fractional Column Distillation Systems – batch, continuous, or combined with Wiped-Film Evaporators as Hybrid Still systems
- Professional consultation with strict confidentiality



Solution Driven.

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For 60 years, Pope Scientific Inc. has been at the forefront of manufacturing chemical processing equipment, engineered systems and laboratory apparatus for science and industry. Internationally known, Pope provides specialized technical expertise in the design and manufacturing of chemical processing equipment.

SOLUTIONS FOR CHEMICAL PROCESSING EXCELLENCE

Lab, Pilot & Large Scale Production Capabilities

- Wiped-Film Molecular (Short Path) Stills and Evaporators
- Batch and Continuous Fractional Distillation Systems
- Hybrid Wiped-Film / Fractional Distillation Systems
- Pressure Vessels, Reactors, and Process Vessel Systems
- Nutsche Filter – Dryers
- Sanitary / Pressurizable Mixers
- Cannabis Specialties
- Toll (Contract) Distillation, Process Development and Testing Services

POPE – WHEN PROCESS EXPERTISE AND SUPPORT MATTER.

