



ORGANIC SAMPLE PREPARATION

Organic Sample Preparation

Organic sample preparation turns complex matrices into clean extracts that are ready for Gas Chromatography, Liquid Chromatography, Gas Chromatography–Mass Spectrometry, or Liquid Chromatography–Mass Spectrometry analysis. The goal is simple: improve recovery, reduce matrix effects, and keep results consistent across batches. Automated extraction, cleanup, and concentration steps also reduce hands-on time and limit solvent exposure in daily lab work. Product families in this category include automated SPE systems, integrated SPE + evaporation platforms, pressurized fluid extraction, automated nitrogen blowdown, vacuum parallel evaporation, and automated solvent recovery modules.

Common industries that need organic sample preparation

- Food safety and residue testing
 - Pesticide, veterinary drug, and antibiotic residue workflows often need standardized extraction, cleanup, and concentration to hit reporting limits with repeatable recovery.
- Environmental monitoring
 - Water, soil, sediment, sludge, and solid waste testing frequently requires enrichment and cleanup of organic pollutants before GC/LC analysis. Large sample volumes also create a throughput challenge that automation can help solve.
- Clinical, toxicology, and life science labs
 - Blood, urine, and tissue workflows benefit from controlled extraction and concentration steps to reduce run-to-run variability. High-throughput sample handling also supports faster reporting and more stable routines.
- Pharmaceuticals, herbal products, cosmetics, and consumer materials
 - Complex matrices often require cleanup and analyte enrichment prior to instrumental testing, especially when trace targets must be reported confidently.
- Polymers, petrochemicals, and industrial materials
 - Controlled extraction is used to isolate organic fractions and extractables, including pressurized extraction workflows referenced in ASTM methods for certain materials testing needs.

Key features labs look for in this category

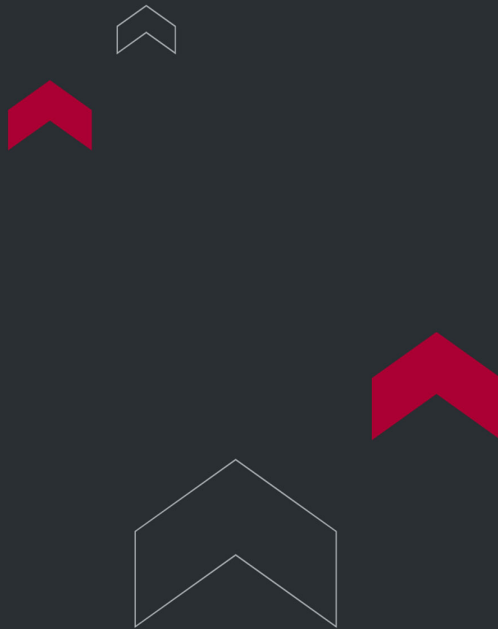
Automation-focused organic sample prep platforms are built around repeatability, throughput, and safer solvent handling. Many workflows combine extraction, cleanup, and concentration into standardized steps to reduce technician-to-technician variation. Instruments in this category commonly support parallel processing, programmable methods, and monitoring logs for traceable operation. Ventilation or fume-hood-friendly designs are also important when organic solvents are part of routine work.

Typical capability themes across the product range include:

- Automated SPE cleanup with stable flow control to improve repeatability and reduce carryover between samples.
- Integrated cleanup + concentration that combines SPE with nitrogen blowdown to reduce manual handling and standardize final concentration steps.
- High-throughput pressurized extraction that shortens extraction time and reduces solvent use versus conventional approaches, while supporting method-driven temperature and pressure control.
- Parallel evaporation and endpoint-friendly concentration using nitrogen blowdown, water-bath heating, and liquid-level needle tracing for stronger batch consistency.
- Vacuum parallel evaporation with solvent recovery for multi-sample concentration, plus controlled vacuum programming to protect analytes and improve repeatability.
- Solvent recovery management modules that stabilize vacuum evaporation when mixed solvents and multi-step pressure control are required.

Why choose Torontech

Torontech helps labs build an end-to-end organic sample preparation workflow instead of relying on disconnected manual steps. Automated platforms reduce bottlenecks at cleanup and concentration, where many labs lose the most time before GC or LC runs. Standardized methods, monitoring, and batch-parallel processing help improve repeatability when multiple operators and shifts are involved. Scalable configurations also support growth, from smaller daily workloads to high-throughput residue and environmental programs.



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