



TORONTECH

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NEWSLETTER

FAT & OIL CONTENT BY SOXHLET EXTRACTION

Gravimetric fat determination for food, feed, agricultural, pharmaceutical, and environmental laboratories.

September 2026 — A nutrition panel that reads 3 g of fat when the true value is 5 g is more than a measurement error —it can mean a mislabeled product, failed audit, or recall. Across food, feed, pharmaceutical, and environmental testing, the reported fat or soluble-extract value is only as reliable as the extraction behind it.

Reproducible results depend on controlled, standardized extraction performed consistently from run to run. Torontech's Soxhlet fat-analyzer line covers different levels of automation, from the semi-automatic TT-SOX406 for routine QC to the fully automatic, five-method TT-SOX606 for high-throughput, multi-matrix testing.



THE SOXHLET METHOD: GRAVIMETRIC FAT DETERMINATION

The reference basis for AOAC- and ISO-recognized crude-fat analysis.

①

Prep & Weigh

Dry, grind, and weigh the sample into a cellulose thimble; record the empty extraction cup.

②

Extract

Heated solvent siphons through the sample over repeated cycles, dissolving the lipids.

③

Recover Solvent

Solvent is distilled off and recovered, leaving only extracted fat in the cup.

④

Dry & Weigh

Evaporate residue, dry, and weigh; fat % = $\frac{\text{extracted mass}}{\text{sample mass}} \times 100$.

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THE TORONTECH SOXHLET LINE

TT-SOX606 – Automatic Soxhlet Extractor Fully Automatic

One-touch Soxhlet platform with five built-in extraction methods for high-throughput, multi-matrix laboratories.

Features/Advantages:

- **One-touch Automation:** Lifting, pre-heating, extraction, dilution, and solvent recovery run as a single unattended cycle.
- **Five Built-in Methods:** Soxhlet, Soxhlet Hot, Continuous-Flow, Hot Extraction, and CH Standard – one platform for matrices that used to need several.
- **All-solvent Compatibility:** Glass and PTFE wetted paths block impurities and handle any organic solvent, with a preset reagent library for one-click repeats.
- **Built-in Ether Leak Detection:** Continuous monitoring for volatile-solvent leaks – a real safety margin with diethyl or petroleum ether.
- **Efficient Recovery, Low Draw:** ≥85% solvent recovery and a full metal heating module with closed-loop temperature and flow control.



TT-SOX406 – Fat Analyzer Semi-Automatic

Semi-automatic six-sample Soxhlet system for reliable, cost-effective fat determination in busy QC labs.

Features/Advantages:

- **Sealed Metal-Bath Heating:** Integral metal heating with PID control holds $\pm 1^\circ\text{C}$ over a wide range, sample after sample.
- **Triple-Alarm Safety:** Over-temperature and timer alarms signal by sound, light, and LCD, with isolated heating and timer circuits.
- **Air-insulation Design:** An exclusive air-insulation technique keeps the case at room temperature during high-temperature extraction.
- **Clear 4.3-inch Interface:** Set temperature, actual temperature, set time, and heating duration on one screen; linear-bearing lifting for smooth handling.
- **One-step Recovery:** Soaking, extraction, and solvent recovery combine in a single step, and reagents recycle to cut per-test cost.



Did You Know?

The **Soxhlet extractor** is **one of the oldest analytical instruments** still used as a primary reference.

German chemist, Franz von Soxhlet, built it in 1879 to measure the fat in milk – and nearly 150 years later, faster fat-analysis techniques **are still validated against it**, with AOAC International and the U.S. EPA recognizing Soxhlet extraction as an official reference method for crude fat.



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WHICH TORONTECH FAT ANALYZER FITS YOUR LAB?

BEST FOR	MODEL	WHY THIS IS THE BEST FIT
Routine fat & oil QC at an accessible price	TT-SOX406	Semi-automatic six-sample Soxhlet with triple-alarm safety delivers dependable gravimetric results without paying for full automation.
High-throughput, multi-method laboratories	TT-SOX606	Five built-in methods and one-touch automation move food, feed, pharma, and environmental samples through a single platform.
Volatile-solvent safety is a priority		Built-in ether leak detection plus closed-loop temperature and flow control support continuous, unattended runs.
Greenest operation & tightest reproducibility		≥85% solvent recovery and 1% reproducibility keep solvent, water, and power down while results stay repeatable.

Which Torontech Fat Analyzer Fits Your Lab?



Safety Engineered in:

Ether leak detection, triple alarms, isolated circuits, and room-temperature case design for labs handling volatile solvents daily.



Lower Cost to Run: 80–85% solvent recovery, closed-loop water and flow control, and rapid-heat metal modules that cut solvent, water, and power.



Accuracy You Can Document:

PID temperature control to ± 1 °C, glass-and-PTFE wetted paths, and a standardized Soxhlet workflow that repeats identically batch after batch.



One Line, Full Automation Spectrum:

From the semi-automatic TT-SOX406 to the fully automatic TT-SOX606 — matched to your throughput and budget from a single supplier.

Ready to Make Every Fat Analysis Count?

From routine QC to fully automated multi-method extraction, the Torontech Soxhlet line delivers the reproducible, regulator-ready fat data your lab is judged on. Explore the full range: <https://www.torontech.com/fat-analyzer/>.

For help configuring the right platform for your matrices and throughput: sales@torontech.com