SHIMADZU
Excellence in Science

Direct Analysis Of Heavy Metals In Edible Oils

Dilute And Inject – No Acid Digestion, No Complex Sample Preparation

When it comes to food quality and safety in edible oil production, monitoring toxic trace metals (As, Pb, Cd, and Hg) is critical to ensure consumer safety. Concurrently, controlling catalytic elements like Cu, Fe, and Mn is essential to prevent accelerated oxidative deterioration and maximize shelf life.

With ICPMS-2050, elemental analysis is made easy with a single, elegant workflow that **quantifies 25 elements simultaneously after a simple 10× dilution in organic solvent**. This advanced system delivers regulatory-grade sensitivity with confidence—eliminating time-consuming processes, safety hazards, and contamination risks associated with traditional acid digestion.

Key Benefits Of Direct ICP-MS For Edible Oils

Simplified Sample Preparation

Minimize preparation time and reduce errors while keeping sample handling simple and safe.

- Analyze oils by simple 10× dilution in organic solvent
- No acid digestion — avoids analyte loss & contamination
- Fewer manual steps for higher throughput

Regulatory-Ready Sensitivity

Confidently demonstrate compliance with CODEX contaminant standards for edible oils.

- Simultaneous analysis of 25 elements including As, Pb, Cd & Hg in one run
- Detection limits well below CODEX 0.1 mg/kg for As & Pb
- Collision/reaction cell removes carbon interferences for accurate results

Smart, Streamlined Workflow

Spend less time on method development and more on results, even for complex matrices.

- Organic Solvent Injection System for stable analysis
- In-line internal standard addition — no manual spiking required
- Preset LabSolutions ICPMS methods, ready to run