



OVERALL MIGRATION TESTER (12-CELL)

Overall Migration Tester (12-Cell) - ToronMT™ 759

Overall Migration and Residue Tester for Food Contact Materials

ToronMT™ 759 is an overall migration tester that measures the total migration of food-contact materials and packaging, and quantifies non-volatile matter in pharmaceutical packaging materials and medical devices. The instrument automates the evaporation-residue method: it dries a food simulant and weighs the non-volatile residue left behind. Twelve independent positions process twelve dishes at once for higher throughput.

Automatic temperature control holds the set point across a room-temperature to 135°C range, adjustable for different food simulants and methods. Rapid drying technology and a nitrogen flow speed each evaporation, while a closed-loop vapor system keeps the process safe. Automatic weighing resolves residue mass across 0.3 to 80,000 mg at 0.1 mg accuracy, removing the manual steps of a traditional test.

One-button operation runs drying, evaporation, and weighing automatically, and live data curves let operators follow each test. Traceable records keep migration and residue results defensible for QC and certification. The ToronMT™ 759 (12-Cell Overall Migration and Residue Tester) suits food-contact, pharmaceutical packaging, medical-device, and regulatory-compliance labs.

APPLICATIONS

Overall Migration Tester (12-Cell) - ToronMT™ 759 Applications

The ToronMT™ 759 measures overall migration and non-volatile residue wherever a material contacts food, drugs, or the body.

- Food-Contact Plastics and Packaging: measures overall migration from films, containers, and packaging into food simulants.
- Food-Contact Coatings and Papers: tests total migration from coated papers, boards, and can coatings.
- Pharmaceutical Packaging: quantifies non-volatile matter extracted from drug packaging materials.
- Medical Devices: measures non-volatile residue from device materials in contact with the body or fluids.
- Tableware and Kitchenware: tests overall migration from cups, utensils, and food-preparation articles.
- Food Simulant Studies: supports migration testing with aqueous, acidic, and fatty food simulants.
- Regulatory Compliance Labs: supports food-contact safety testing for market approval.
- Material R&D and QC: screens new food-contact materials for migration and residue during development.



Standards

The ToronMT™ 759 automates the evaporation-residue determination used in overall migration and non-volatile matter testing.

- ISO 759 - Volatile Organic Liquids for Industrial Use: Determination of Dry Residue After Evaporation on Water Bath: General Method

Overall migration limits for food-contact materials are set by regional food-contact regulations, which vary by market and by the food simulant used. The ToronMT™ 759 performs the evaporation and gravimetric residue measurement these methods rely on, and can be configured to a laboratory's applicable protocol, simulant, and temperature conditions.

FEATURES

Overall Migration Tester (12-Cell) - ToronMT™ 759 Key Features

The ToronMT™ 759 automates evaporation and weighing across twelve positions for overall migration and residue testing.

- Overall Migration and Residue in One: measures total migration of food-contact materials and quantifies non-volatile matter in pharmaceutical packaging and medical devices.
- Twelve Independent Positions: processes twelve evaporating dishes at once for high-throughput migration and residue work.
- Automatic Weighing: weighs each residue automatically, removing the manual weighing steps of a traditional evaporation-residue test.
- Rapid Drying Technology: dries the food simulant quickly to shorten each test cycle.
- Closed-Loop Vapor Handling: a closed-loop system contains and manages the evaporated simulant vapor for safer operation.

- Automatic Temperature Control: holds the set temperature across a room-temperature to 135°C range, adjustable for different simulants.
- Wide Weighing Range: resolves residue mass across 0.3 to 80,000 mg at 0.1 mg accuracy.
- One-Button Automated Testing: runs drying, evaporation, and weighing automatically to reduce operator effort and variability.
- Nitrogen-Assisted Evaporation: a high-purity nitrogen flow supports clean, controlled evaporation of the simulant.
- 24-Bit Delta-Sigma Data Acquisition: high-resolution conversion supports precise residue-mass measurement.
- Real-Time Data Curves: on-screen curves let operators follow drying and weighing.
- Data Traceability: traceable records keep migration and residue results defensible for QC and certification.
- Laboratory Data Management Integration: connects to lab data management software for centralized records and reporting.

THEORY & METHOD

Theory and Method

Overall migration testing measures the total mass of substances that transfer out of a food-contact material into food or a food simulant. A specimen is exposed to a chosen simulant, such as water, acetic acid, ethanol, or a fatty simulant, under set time and temperature conditions that represent the intended use. The simulant then carries the migrated, non-volatile substances.

After exposure, a measured portion of the simulant is transferred to a tared evaporating dish. The instrument evaporates the liquid using controlled heating, rapid drying, and a nitrogen flow, while a closed-loop system handles the vapor safely. What remains is the non-volatile residue, the mass of substances that migrated out of the material.

The instrument weighs each dried residue automatically and reports the overall migration as mass per unit area or per unit volume of simulant, against the tare. Twelve positions run together, so a full set of simulants and replicates can be processed in one cycle. The same evaporation-and-weighing routine quantifies non-volatile matter for pharmaceutical

packaging and medical-device materials.

TECHNICAL SPECIFICATIONS

Overall Migration Tester (12-Cell) - ToronMT™ 759 Technical Specifications

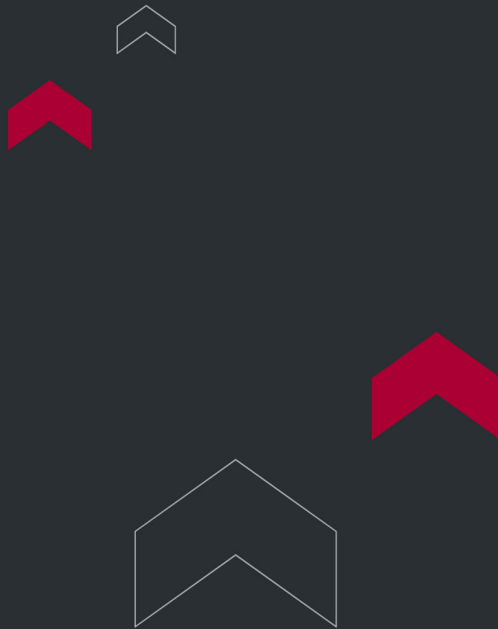
Parameter	Specification
Weighing Range	0.3 to 80,000 mg
Weighing Accuracy	0.1 mg
Temperature Range	Room temperature to 135°C (customizable)
Temperature Accuracy	±0.5°C (standard)
Test Chamber Volume	170 mL max (customization available)
Specimen Amount	12, independent
Carrier Gas	99.999% Nitrogen (user-supplied)
Gas Pressure	0.6 MPa (user-supplied)
Gas Interface	Ø6 mm
Dimensions	885 mm (L) × 666 mm (W) × 450 mm (H)
Voltage	AC 220 V, 50 Hz (110V is also available)
Net Weight	60 kg

Standard Delivery

Item	Description
Main Unit	Twelve-position overall migration and residue instrument
Computer	Dedicated control PC
Control Software	Instrument operation and data-analysis software
Evaporating Dishes	Dishes for simulant evaporation and residue weighing
Automatic Moisture Filter	Conditions the incoming carrier gas
Calibration Weight	Reference weight for balance calibration

Optional Accessories

Item	Description
Evaporating Dishes	Additional evaporating dishes for the twelve positions
Laboratory Data Management System	Centralized data management and reporting software



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