



LABORATORY COMPOUNDING & MIXING EQUIPMENT

Laboratory Compounding & Mixing Equipment

Laboratory Compounding & Mixing Equipment | 20 g to 5 L Batch Capability

Laboratory compounding and mixing equipment turns grams of polymer into test-ready material. Torontech supplies six machines spanning batch sizes from 20 g to 5 L. Formulation teams, quality labs, and university programs use them to screen recipes long before pilot scale. For rubber work, ASTM D3182 sets out the mill and internal mixer procedures this range supports.

Each machine applies shear differently. Screw extruders convey and melt, internal mixers work a charge under ram pressure, and two-roll mills shear stock in an open nip. Matching the principle to the material decides how well fillers disperse. The range below sorts by batch size, the criterion most buyers weigh first.

Why Choose Torontech for Your Laboratory Compounding & Mixing Equipment

Torontech supplies testing and measurement equipment to laboratories and manufacturers across North America and worldwide, backed by responsive technical support and calibration service. The Laboratory Compounding & Mixing Equipment range is built for reliable, standards-driven results, so you can standardize on one supplier as your testing needs grow. Our team helps you match the right configuration to your samples, applicable standards, and throughput, then supports you through installation and beyond.

Request a Quote

Tell us your material, the batch size you can supply, and whether you need pellets, sheet, or continuous output, and we will point you to the right machine. [Contact the Torontech team](#) for pricing and lead times.

APPLICATIONS

Applications

Compounding and mixing at laboratory scale supports formulation work across the polymer, rubber, and specialty chemical industries.

- Polymer Formulation Development: screens resin, additive, and filler combinations on gram quantities before committing to production trials.
- Rubber Compounding: masticates elastomers and works in fillers, oils, and curatives to build and verify trial recipes.
- Masterbatch and Color Work: prepares concentrated pigment and additive batches, then checks dispersion and shade consistency.
- Filled and Reinforced Compounds: incorporates carbon black, silica, mineral fillers, and short fibers at loadings that need high shear.
- Biopolymer and Recycled Resin Research: processes PLA, PBAT, and reclaimed feedstock inside narrow thermal windows.
- Pharmaceutical Melt Blending: mixes active compounds with polymer carriers for early solubility and dispersion screening.
- Test Specimen Preparation: produces pellets, strand, or sheet for tensile, thermal, rheological, and cure testing.
- Quality Control Screening: verifies incoming resin processability against a reference recipe under fixed conditions.
- Teaching and Demonstration: gives polymer engineering programs hands-on processing at a workable cost per run.

TECHNICAL SPECIFICATIONS

Laboratory Compounding & Mixing Equipment Range

Six machines cover the full laboratory range, from a 20 g screening batch through to a 5 L mixing chamber. Batch size and mixing principle are the two things to compare.

Product	Batch Size / Output	Mixing Principle	Description
ToronMix™ LV 300 Laboratory Vertical Mixer	Approx. 20 g	Pneumatic ram extrusion through an internal dispersion structure, with integrated pelletizing	The smallest option in the range. Mixes and pellets in one pass, so a newly synthesized material yields free-flowing pellets ready for melt flow, thermal, or molding work.
ToronExt™ SS 380 Laboratory Single-Screw Compounding Extruder	30 g per cycle, or 2.5 kg/h continuous	Single 20 mm screw with a recirculating channel and reversing valve	The most versatile unit. Recirculates a small charge for formulation trials, then switches to continuous extrusion for small-run material without changing machines.
ToronMTC™ 40 Micro Twin-Screw Compounder	10 ml minimum, 40 g per cycle	Two conical twin-screw sets in an inverted, staggered layout for unlimited recirculation	Built for expensive and scarce materials. Melt cycles through the chamber as long as needed, giving the effect of a very long screw inside a benchtop frame.
ToronExt™ TWS-120 Benchtop Twin-Screw Extruder	10 ml minimum, 40 g per cycle	Single conical twin-screw pair, positive displacement conveying	The compact twin-screw option at 60 kg. Special alloy screws and barrel suit powder fillers, corrosive additives, and modified plastics over long test programs.
ToronTRM™ 300 Laboratory Two-Roll Mill	Sheet output, Ø120 or Ø150 mm × 350 mm rolls	Open two-roll nip with independent servo drives on each roll	The only unit with an adjustable friction ratio, since each roll drives separately rather than through a fixed gear train. Produces sheet for specimen cutting.
ToronMix™ 300 Laboratory Internal Mixer	1 L, 3 L, or 5 L chamber	Closed pressurized chamber, counter-rotating rotors under a pneumatic ram	The largest capacity in the range. Live torque and temperature curves give an objective mixing end point instead of a fixed clock time.

How to Choose the Right Laboratory Compounding & Mixing Equipment

- When you have only grams of a new material: choose the ToronMix™ LV 300 at roughly 20 g, or the ToronMTC™ 40 at a 10 ml minimum.
- When you need pellets without a separate granulator: choose the ToronMix™ LV 300, which cuts extrudate at the die face.
- When trials must scale into small-run material: choose the ToronExt™ SS 380 for its dual batch and continuous modes.

- When residence time is the variable you want to control: choose a recirculating design, either the ToronMTC™ 40 or the ToronExt™ SS 380.
- When formulations are abrasive or chemically aggressive: choose the ToronExt™ TWS-120 for its special alloy screws and barrel.
- When rubber compounding and sheet preparation are the goal: choose the ToronTRM™ 300, and pair it with the ToronMix™ 300 for the mixing step.
- When batch size runs past one litre: choose the ToronMix™ 300 in the 1 L, 3 L, or 5 L chamber size.
- When you need an objective mixing end point: choose the ToronMix™ 300 or a twin-screw unit, since all three record torque.
- When bench space or power supply is limited: choose the ToronMix™ LV 300 at 0.5 kW on a single-phase outlet.



Torontech Inc.

251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada 

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA 

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE

Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE 

Phone: +971 488 19252
Email: me@torontech.com

