



miniDT Dissolution Bath

Biorelevant volume dissolution testing



Pion's miniDT™ is an eight position dissolution bath designed for biorelevant volumes of media from 40 – 250 mL. It is fully compatible with the Pion Rainbow R6™ concentration monitor, a powerful analytical instrument that accurately measures dissolution in real-time.

When used as a dedicated small volume tester, the miniDT eliminates time-consuming swap out of accessories when using a small volume insert on a traditional USP bath.

Intended for evaluating the dissolution performance of final oral dosage forms, including tablets, capsules, and suspensions, as well as long-acting injectable formulations. The use of biorelevant volumes makes miniDT particularly suitable for the testing and development of pediatric formulations, low-dose products, and studies involving low-concentration samples.

Pion Advantage

- Using an *in vivo* relevant volume results in more reliable *in vivo* behavior prediction.
- Saves time when switching from large to small volumes.
- 8-position stirring system with interchangeable 100 mL, 150 mL or 200 mL vessels or 250 mL Chinese Pharmacopoeia vessels.
- Small footprint – 16" x 14" (40 x 36 cm) conserves bench space.
- Supports scale up and transition from lab to production.

Small volume dissolution and absorption

Simultaneous dissolution and absorption studies can be performed using miniFLUX accessories. Combined with miniDT, it forms a biomimetic *in vitro* system for evaluating oral formulations. This setup enables assessment of excipient and dose effects on API dissolution, solubility, and passive permeability; supporting absorption prediction, bioequivalence estimation, and formulation risk assessment. FLUX accessories combined with miniDT, makes an *in vitro* system to assess oral formulations permeation.

Long Acting Injectable Adapters

When testing Long Active Injectables and other extended-release dosage formulations, the miniDT can be used with Pion's LAI adapters.

Instrument comes with

- Dedicated 100 mL vessel or 250 mL Chinese pharmacopeia vessel configuration.
- AuPRO™ software which monitors and reports temperature and stirring speed record (with purchase of Rainbow R6).
- Integrated immersion heater.
- Available with 100, 200, and 250 mL vessels.

Rainbow R6

The Rainbow R6 Concentration Monitor is an *in-situ* Fiber Optic UV-VIS spectrometer, measuring real-time dissolution as fast as every 2 seconds. Equipped with up to eight independent fiber-optic channels the Rainbow R6 provides high accuracy and resolution in concentration and % dissolved measurements. The miniDT when paired with Rainbow R6 is a complete miniDISS profiler system.



Figure 1. miniDISS Profiler System, (Rainbow R6 plus miniDT)

Dissolution Portfolio

Configuration	Media Volumes
microDISS Profiler (Rainbow R6 and MB8)	1 – 20 mL
miniDISS Profiler™ (Rainbow R6 and miniDT)	40 – 250mL
DissoSpec (Rainbow R6 and integrates USP Dissolution bath)	USP Compendial volumes

Dissolution and Absorption Portfolio

Configuration	Media Volumes
microFLUX (Rainbow R6 and MB8 with MicroFLUX vessels)	16 – 20 mL
miniFLUX (Rainbow R6 and miniDT with MiniFLUX vessels)	180 – 250 mL
BioFLUX (Rainbow R6 and external USP2 bath with stirring unit and BioFLUX vessels)	200 – 500 mL
MacroFLUX (Rainbow R6 and external USP2 bath with stirring unit and MacroFLUX vessels)	800 – 1,000 mL