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QUALITEST™

Industrial Ultrasonic Extractor



STANDARDS

IEC 61010-1

IEC 61326-1

ISO 20427

Industrial Ultrasonic Extractor - QualiUltra™ iExt Series

An Ultrasonicator in the QualiUltra™ iExt Series is an industrial ultrasonic extractor system that combines probe sonication, controlled stirring, and cooling support for extraction and reaction workflows. This platform is designed for larger working volumes than typical lab sonicators, which helps teams move from small beakers to pilot-scale batches. Adjustable ultrasonic power lets you tune cavitation intensity for different solvents, solids loading, and target compounds. Integrated stirring improves bulk mixing, which helps keep extraction conditions uniform. Cooling circulation support helps manage temperature rise during longer runs.

QualiUltra™ iExt Series supports ultrasonic-assisted extraction in reactor volumes from 5 L up to 50 L. The system uses a large-diameter ultrasonic probe to deliver acoustic energy directly into the process liquid. Cavitation and micro-mixing help accelerate mass transfer, which can reduce extraction time compared with passive soaking or simple stirring. A dedicated stirring motor supports stable mixing speeds across different viscosities. Cooling circulation hardware is included by model to support temperature control during heat-sensitive processes.

APPLICATIONS

Industrial Ultrasonic Extractor - QualiUltra™ iExt Series Applications

- Botanical and natural product extraction
 - Ultrasonic cavitation helps break plant tissue and improves solvent penetration. This supports extraction of active compounds from herbs, roots, and botanical solids. Temperature control can help protect heat-sensitive fractions during longer runs.
- Food and flavor processing R&D
 - Ultrasonication supports extraction of flavors, pigments, and functional components from food-grade materials. Stirring helps keep solids suspended during processing, improving repeatability across batches. Cooling support helps stabilize conditions when volatile or temperature-sensitive compounds are present.
- Pharmaceutical and API intermediate research
 - Ultrasonic-assisted extraction can speed up screening of solvents and process conditions during method development. Controlled mixing supports consistent contact between solvent and solids, which improves comparability across trials. Larger reactor options help scale up once the method is stable.
- Environmental and analytical sample prep
 - Ultrasonication supports extraction from soils, sediments, and particulate samples when contaminants or organics must be transferred into a solvent phase. Consistent mixing and controllable power help improve repeatability for prep protocols. Cooling support helps limit unwanted losses in longer processing cycles.
- Chemical processing and dispersion tasks
 - This Ultrasonicator system can support dispersion and slurry conditioning steps tied to extraction or reaction workflows. Sonication helps reduce agglomerates, while stirring maintains uniform distribution. This can help stabilize downstream filtration or separation behavior.



Standards

- IEC 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use.
- IEC 61326-1: EMC requirements for measurement, control, and laboratory equipment.
- ISO 20427: Guidance for ultrasonic dispersion methods that supports standardized process documentation.

FEATURES

Industrial Ultrasonic Extractor - QualiUltra™ iExt Series Key Features

- Reactor-scale ultrasonic extraction
 - Supports 5 L to 50 L reactor volumes across the series, suitable for pilot-scale batches.
- Adjustable ultrasonic power ranges by model
 - Power control supports method tuning for different materials, solvents, and solids loading.
- Large-diameter probe options
 - Probe sizes scale with reactor volume to support effective energy transfer into larger batches.
- Integrated stirring for uniform processing
 - Built-in stirring power supports stable suspension and more consistent extraction conditions.
- Cooling circulation support
 - Model-specific cooling circulators help manage temperature rise during longer runs.
- Process-friendly operating ranges
 - Stirring speed control supports common extraction workflows without complex setup.

THEORY & METHOD

Theory and Method

Ultrasonic-assisted extraction relies on cavitation created by high-frequency vibration at the probe tip. Cavitation bubbles form and collapse, generating localized shear and micro-jets that help disrupt solids and improve solvent contact. Stirring handles bulk mixing so solids remain suspended and extraction stays uniform across the reactor volume. Power level and time settings control energy input, which affects extraction rate and temperature rise. Cooling circulation helps hold a tighter temperature window when target compounds are heat-sensitive.

A typical method starts by loading solvent and solids into the reactor and setting the stirring speed for stable suspension. Select an ultrasonic power range and process time, then run sonication while monitoring temperature. Adjust power and mixing based on extraction yield targets and solvent behavior. After completion, separate solids by filtration or centrifugation and move the extract to downstream concentration or analysis steps.

TECHNICAL SPECIFICATIONS

Industrial Ultrasonic Extractor - QualiUltra™ iExt Series Technical Specification

Model	QualiUltra™ iExt 5	QualiUltra™ iExt 10	QualiUltra™ iExt 15	QualiUltra™ iExt 30	QualiUltra™ iExt 50
Frequency	20-25kHz	20-25kHz	20-25kHz	20-45kHz	20-25kHz
Power	20-1000 (W)	20-1200(W)	200-1500(W)	200-1800(W)	250-2400(W)
Reactor Capacity	5L	10L	15L	30L	50L
Hron Diameter	Φ30	Φ30	Φ30	Φ50	Φ50
Working Voltage	220V	220V	220V	220V	220V

Model	QualiUltra™ iExt 5	QualiUltra™ iExt 10	QualiUltra™ iExt 15	QualiUltra™ iExt 30	QualiUltra™ iExt 50
Ultrasonic Time	0.1-99.9s	0.1-99.9s	0.1-99,9s	/	/
Gap Time	0.1-99.9s	0.1-99.9s	0.1-99,9s	/	/
Working Time	1-999min	1-999min	1-999min	1s-59min59s	1s-59min59s
Power Setting	1-99%	1-99%	1-99%	1-99%	1-99%
Duty Ratio	0.1-99.9%	0.1-99.9%	0.1-99,9%	/	/
Thermometer	Yes	Yes	Yes	Yes	Yes
Mixing Power	60W	60W	90W	120W	120W
Stirring Speed	10-600r/min	10-600r/min	10-600r/min	10-600r/min	100-600r/min
Rack	Stainless Steels				
Additive Containers	Yes	Yes	Yes	Yes	Yes
Liquid Filling And Draining Ports	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes/Yes
Refrigeration Equipment	DLK-5003	DLK-5007	DLK-5010	DLK-5010	DLK-5010



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