MISONIX
Ultrasonic Liquid Processors

Industries and Applications

Biological / Biotech
Sonication is an ideal tool for lysing bacteria, yeast and tissue cells for the extraction of protein, DNA, RNA, and cellular components. DNA shearing (ChIP Assay) is a very common application.

Pharmaceutical
Cell disruption is common in analytical, quality control, and R & D labs to perform numerous functions from mixing and degassing of analytical samples, to cracking open tablets for dissolution tests. Liposomes and emulsions are easily formed by Sonication for microencapsulation purposes in the production of creams and lotions.

Chemical
Sonication accelerates both physical and chemical reactions, creating new fields of research. Major advances in sonochemistry include chemical synthesis of catalysts and new alloys, catalyzing organo-metallic reactions, micro-encapsulation of protein and hydrolyzing esters. The use of sonication provides greater yields, increases overall efficiency, and saves energy.

Industrial
Industrial uses include forming emulsions, catalyzing reactions, extracting compounds, and reducing particle size. Continuous, in-line Flocells and special ultrasonic horns are available for processing larger volumes. Sonication is being used in the Paint and Pigment industry to disperse dyes and inks and in the Ceramic industry to degas slips and create denser castings.

Environmental
Sonication is used by environmental testing labs to process soil and sediment samples according to EPA Method SW846-3550 in lieu of soxhlet extraction methods. Sonication takes just 8-10 minutes per sample versus 4-18 hours by soxhlet extraction, it uses half the solvent and improves contaminant yields. Both single and dual horn systems are available. If the sample load is high, then a Dual Horn system is recommended because it allows you to process two samples simultaneously.

Precision Cleaning
Focused ultrasound is 10 times more powerful than standard ultrasonic baths. These narrowly focused sound waves create an intense zone of cavitation bubbles that result in a "scrubbing" action that can clean many types of surfaces. Applications include: cleaning solder residue from PC boards, removing dirt from blind holes and etched surfaces, clearing clogged filters and valves, and cleaning grease from machine parts and wire dies.

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