Materials Science Prep
SAMPLE PREPARATION FOR MATERIALS RESEARCH LABS
WWW.SPEXSAMPLEPREP.COM/MATERIALS-SCIENCE

SPEX SamplePrep is an industry leader in sample preparation products for materials research labs. Our powerful mills and grinders and automated press provide reliable, reproducible results without cross contamination.

Applications include:
:: MECHANICAL ALLOYING  :: PRESSING PELLETS FOR XRF  :: MIXING & BLENDING  :: CRYOGENIC GRINDING

Mechanical alloying, also referred to as reactive milling, is a process used as a solid-state powder processing technique that generates powders with unique micro-structures. The Mixer/Mill, widely known as the “SPEX Mill”, has become the industry standard for mechanical alloying applications.

The high energy of the milling action and the durability of the motor allow running for extended periods often required in this process.

The Mixer/Mill is equipped with a timer that is factory set for a 100 minute time range. For longer grinding times up to 10,000 minutes an extended run chip is available. Hundreds of articles have been published in peer reviewed scientific articles regarding the Mixer/Mill and its use for mechanical alloying.

Similar publications on the Mixer/Mill can be found online by searching in www.scholar.google.com.

FEATURES

The Mixer/Mill® is the ideal solution for R&D labs that need a high energy ball mill for grinding hard samples to fine homogenous powder.

Product synergy: XRF, SEM

Customer types: University engineering & materials science departments. Battery manufacturers. Solar power companies, car companies.

Typical samples: Rare earth metals and metal oxides

Typical sample size/format: 1-20 grams.

Applications include: Thermoelectric research, Lithium Ion battery research, solar power research, superconductor research, nano-technology, hydrogen energy storage, superalloys.

Mechanical alloying of metal oxides in the Mixer/Mill®

Metal oxide before grinding.

Metal oxide after grinding.
3636 X-PRESS FEATURES

The 3636 X-Press® is a 35-ton (31.8 metric ton) hydraulic laboratory pellet press that is ideal for accurate and repetitive pressing of sample pellets for XRF and other analytical techniques.

Product synergy: XRF, SEM

Customer types: University engineering & materials science departments, battery manufacturers, solar power companies, car companies.

Typical samples: Rare earth metals, metal oxides, metal alloys, composite materials.

Typical sample size/format: 40 mm die set.

Applications include: Thermoelectric research, Lithium Ion battery research, solar power research, superconductor research, hydrogen energy storage, superalloys.

FREEZER/MILL FEATURES

The Freezer/Mill® grinds tough or temperature sensitive samples at cryogenic temperatures. This mill is able to process the toughest samples quickly and effectively that are ungrindable at room temperature.

Product synergy: XRF, SEM, IR

Customer types: University engineering & materials science departments, battery manufacturers, solar power companies, car companies, aeronautical companies.

Typical samples: Rare earth metals, metal alloys, insulating materials, composite materials.

Typical sample size/format: 0.1-100 grams.

Applications include: Thermoelectric research, Lithium Ion battery research, solar power research, superconductor research, hydrogen energy storage, superalloys, medical implants, air-craft materials.