ACS Material Equipment Series

PlasMil™ L3 Plasma Vibratory Ball Mill

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I. Product Overview

1) Main Unit

Photo of PlasMil™ L3 Plasma Vibratory Ball Mill

II. Product Features

The PlasMil™ L3 Plasma Vibratory Ball Mill introduces cold plasma generated by field discharge into a mechanically vibrated ball milling process. Under near-atmospheric pressure, high-energy non-equilibrium plasma is formed inside the milling jar, which synergizes with mechanical ball milling. In this non-thermal plasma environment, material molecules are easily transformed into atomic and excited states, enabling recombination. This promotes powder refinement, alloying, activation, chemical reactions, and accelerates in-situ gas–solid reactions. As a result, milling efficiency is greatly enhanced, contamination is significantly reduced, and unique structures are formed, markedly improving material properties.

A complete technical solution for this equipment has been filed under PCT international patent applications in the United States, Japan, and European member states. The system has already been delivered to more than 80 universities, research institutes, and enterprises nationwide, including 8 academician-led teams and many scientific research groups.

Key Features

- Compact lab tool, fits on sturdy workbench
- Fully sealed milling jars for multi-atmosphere experiments
- Different jar volume available
- Ultra-low noise vibration
- Remote Monitoring and Control Platform

III. Product Specifications

Product Name	PlasMil™ L3 Plasma Vibratory Ball Mill
SKU	EBP000L3
Dimensions	930 (L) × 570 (W) × 1150 (H) mm
Weight	~ 380kg
Input Voltage	AC 380V
Rated Power	2 kW
Number of Jars	1
Jar Volume	1.5 L / 3 L
Gravity Acceleration	8-10 g
Operating Mode	Vibratory ball milling
Sample Capacity	1-500 g
Discharge Method	Dielectric barrier discharge
Plasma Discharge Frequency	10–16 kHz
Motor Speed	900–1500 rpm
Speed Control	Variable frequency speed regulation
Feed Particle Size	< 5 mm

Min. Output Particle Size (depending on the material)	100 nm
Noise Level	< 75 dB
Default Components	Main ball mill unit x 1, Ball milling jar (1.5L, stainless steel) x1, Obervation plate for discharge jar (1.5L) x 1, Electrode rods (1.5L) x 3, Power cable x 1, User manual x 1, Certification of Conformity x 1, Tools x 1
Optional Components	Electrode rod (1.5L, PTFE), Electrode rode (3L, PTFE), Ball milling jar (1.5L, hard alloy), Ball milling jar (3L, stainless steel), Ball milling jar (3L, hard alloy), Observatoin plate for discharge har (1.5L), Observation plate for discharge har (3L), Plastic cover plate (200 ml), Plastic cover plate (1.5L), Ceramic cover plate (200 ml), Ceramic cover plate (3L), Hard alloy balls (6/8/10 kg), Stainless steel balls (6/8/10 kg), Vacuum pump

IV. Application

- Lithium battery materials
- Fuel cell catalysts
- Hard alloy powders
- Metal-based compounds
- Ceramic materials