



MI IMMERSION MILL



LABORATORY IMMERSION MILL MIL



MIL-1 Immersion Mill

Highly versatile equipment, designed for the wet milling and dispersion of pigments in small batches (up to 10 kg) or for all types of dispersions, emulsions, and suspensions thanks to the possibility to interchange the process shafts.

As milling equipment, it is used to replicate, at a pilot scale, the fine milling processes of liquid or semi-viscous products, reducing the particle size of the solids making up the formula. Its operating principle is based on the breaking down of the solid agglomerates composing the formula and the fully wetting the surface of the elemental particles.

FEATURES

- » Rotor milling system. The rotor is equipped with pins that promote the circulation of the milling elements.
- » Rotor speed adjustable via frequency inverter (IP-55 or ATEX execution).
- » Sieve with large outlet surface, located on the side and bottom of the milling basket.
- » Batch process without pump.
- » Materials in contact with the product are anti-abrasion and stainless.
- » It includes a stainless steel tank with double jacket for cooling.
- » It includes a ceramic balls load and one more as spare.
- » Easy cleaning for colour changes.



Technical Data

Model	Power (kW)	Milling chamber volume (ml)	Vessels (L)		Weight (Kg)
			Min.	Max.	
MIL-1	0.75	50	1	3.5	80
MIL-1,5	1.1	220	4	15	120



MIL-1.5 immersion mill with hydraulic elevation



with you, step by step



MI-10/M wall-assembly immersion mill with a manual counterweighted head-cover lifting system

The Immersion Mill has been designed for wet grinding and dispersion of pigments by means of microbeads.

The particularity of this mill lies in combining two operations: dispersion and grinding. Both processes are carried out in a single unit, without any additional elements, thus making it highly cost-effective equipment.

The immersion mill has a grinding basket filter in where the microbeads are placed and an agitation system consisting of blades and a turbine at the bottom. Milling is achieved by the impact of the microbeads against each other, trapping and refining the product. The internal blades of the basket cause the movement of the microbeads inside, thus facilitating collisions between them. Meanwhile, the lower turbine (whether a cowles disc or a propeller) disperses the particles and displaces the product, forcing it to circulate inside the basket. By increasing the product's residence time in the basket, a greater reduction in particle size is achieved.

The immersion mill is the ideal equipment for batch manufacturing applicable to paints, enamels, printing inks, colourant concentrates, special varnishes, etc.

MAIN FEATURES

- » Baskets available with various sizes depending on viscosity.
- » Different type of agitation elements, based on product rheology: standard blades are used for low viscosity products while there is a system of extended blades, suitable for medium to high viscosity products.
- » Wall brackets supports or wheeled bases, available for the smaller models. Robust structures with floor anchoring and hydraulic lifting system for higher power models.
- » For products with a high viscosity, it is possible to install a coaxial scraper with independent drive, which helps to recirculate the product, guiding it from the ends towards the grinding basket.



MI-25 immersion mill with floor anchoring structure and refrigerated tank.



MI-10/M immersion mill with fixed wall support. Pneumatically operated head-cover lifting system.



- » Double chamber surrounding the filter basket, allowing for product cooling or heating as needed.
- » Rotor-stator system of detachable design, with interchangeable blades.
- » Material and diameter of the microbeads to be determined according to the product to be treated and the required fineness.



Detail view of the interior of the basket milling loaded with zirconium balls.



Operation diagram of a basket mill.



MI-25 Immersion mill with coaxial scraper and belt tank fastening system.

ADVANTAGES

Compared to other microbeads milling equipment, the MI offers the following advantages:

- » Reduction in processing time.
- » More versatile equipment, suitable for working with different product batches.
- » Easy cleaning, useful for colour changes, with the possibility of more thorough cleaning thanks to the easy disassembly of the agitation turbine and the milling chamber.
- » A wider range of products which can be milled.

Technical Data

Model	Power KW	Milling chamber volume (L)	Tanks (L)		Weight (Kg)
			Min.	Max.	
MI-10	7.5	2.4	50	100	900
MI-25	18.5	8	200	500	1,000
MI-60	45	21	600	1,500	1,500