Device for dissolving active substances - SonoMag

General

SonoMag is a high-tech device with an innovative functional principle that enables the dissolution time of active ingredients to be significantly shortened (even up to 4x) compared to conventional methods. This is achieved through a groundbreaking combination of ultrasonic vibration and mixing in one device. The SonoMag device enables several different active ingredients to be dissolved at the same time, as it offers (depending on the type) 6 or 15 mixing points for installing individual glass vessels for dissolving, mixing and homogenizing. This functionality also offers a wider range of solvent amounts and dissolved sizes. The increased functionality of the device is achieved in addition to the simultaneous operation of ultrasonic waves and electromagnetic mixing, which also enables separate, independent operation at time intervals.

Operating principle

The source of the ultrasonic waves are ultrasonic transducers attached to the bath, which convert electricity from the generator into mechanical energy. This causes the bath sides to sway at a micro level. Due to these conditions, cavitation occurs and vapor bubbles form in the liquid.

A magnetic stirrer causes the stirring magnet, which is immersed in the solvent, to rotate by means of a rotating magnetic field. The rotation of the magnet in the container creates a vortex that pulls the upper part of the active ingredient downwards, while at the same time the lower part of the active ingredient rises upwards.

The combination of both principles leads to groundbreaking resolution results and represents a significant deviation from the results of the classic resolution through separate processes.

The **SONOMAG** device is designed to dissolve, homogenize and mix active ingredients by using ultrasonic waves and electromagnetic stirring mixer rods.

- High dissolving efficiency
- Significantly shortened process
- Dissolution of insoluble active ingredients
- Dissolving several different active ingredients at the same time
- High cavitation level
- Multifunctional use

p:o Clean visions.

regional award for innovation 2017

Use

The innovative SonoMag device is designed to dissolve active ingredients in the pharmaceutical environment (tablets) and to detect the content of individual active ingredients according to prescribed values (quality control). The device offers an extraordinary efficiency that cannot be achieved with long-term dissolution processes of poorly soluble active ingredients with conventional ultrasonic dissolution processes. The device can also be used in other areas where rapid dissolution and homogenization are required.

The transmission of the ultrasonic vibrations from the transducers to the solvent and the dissolved substance is carried out by a liquid that must be filled up to the minimum level before use. The device is controlled via a foil control panel attached to the front of the device, via which the desired parameters of the ultrasonic vibration and the magnetic mixture (power, operating time, frequency modulation form, rotational speed of the magnetic mixer) can be easily set.

If we want to control exothermic reactions during dissolution or to preserve the morphological structure of the solute, it is possible to use a cooling system with an external recirculation cooling system. This system makes it possible to maintain a constant temperature in the bath. This system is optionally available on the device.

Due to the noise caused by ultrasonic vibrations, the device can be installed in an anti-noise chamber, which is a special product designed to reduce (up to 40%) noise that spreads in the area.

Specifications

Device/Type	SonoMag 6	SonoMag 15
Outside dimensions (L × W × H) [mm]	570 × 515 × 320	
Bath dimension (L × W × H) [mm]	500 × 300 × 135	
Bath volume [L]	20	
Height minimum level [mm]	65	
Frequency of the ultrasonic generator [kHz]	30	
Ultrasonic generator power [W]	600	
Number of mixing points	6	15
Rotation speed regulation	150 – 1500 rot./min	
Magnet mixer power [W]	60	
Power supply	230 V / 50 Hz / 0,7 kW	
Noise level [dB]	72	
Weight [kg]	37	

Clean visions.

Iskra PIO d.o.o.
Trubarjeva cesta 5
Si - 8310 Šentjernej
+386 7 3931 400
info@iskra-pio.si
www.iskra-pio.si