

Ultrasonically assisted powders production:

High intensity and high capacity ultrasonic atomizers applicable for all kind of organic and inorganic liquids atomization and powders production (in metallurgy, chemical industry, food-industry, pharmaceuticals and cosmetics).

Applicable for cold or hot atomizing and pulverizing of: different liquid solutions, liquid metals, salts, minerals, chemicals, paraffin, chocolate mass, polymers, liquid-sugar, painting and coating products, and all other unspecified low and high viscosity (and variable density) liquids. Atomization can be made: on atmospheric, reduced or elevated pressure, on room, or any other temperature, in the protective gas environment, in a direct contact between ultrasonic atomizer and liquid to be atomized, or remotely (transferring ultrasonic pressure-waves trough gas media, without touching a liquid) etc.

Using very particular ultrasonic atomizing systems, very high flow rate of almost any liquid can be easily transformed into fine spray and dried (dehydrated) in line, passing drying (or solidifying, or cooling) channels and creating dry and very fine powder as the end-product.

Very often, in different chemical and metallurgical processing, it is technologically extremely beneficial to have and use fine powders of certain salts, oxides, metals, chemicals or other raw materials, which are usually found as granulates in macro crystalline forms. In order to transform macro crystalline materials into fine powders it would be necessary, first, to mix, melt, homogenize and transform them ultrasonically (or by some other means) in a convenient liquid form, and then to atomize such liquid using ultrasonic (the most convenient) atomizers, producing very fine spray, and draying (cooling, or solidifying) it (in-line, during a free fall trough a solidifying channels), until getting very fine, powders.

The difference between here proposed technology and currently known Ultrasonic Atomizers is that this technology has no temperature limits, and any flow rate can be realized by relatively simple scaling means (what is not possible using ultrasonic atomizers presently found on the market).

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