

Masking the Taste of Pharmaceutical Ingredients and Food Additives



Improve Compliance by Optimizing the Taste of Active Compounds

Dietary supplements for athletes and balanced additives for all age groups must, above all, possess one property: they have to taste good. Consumer acceptance is essential for long-term use and thus for the desired, positive effect on performance and health. However, many active substances do not taste nice. Their tastes range from sulphurous to fishy to astringent and bitter. Alpha-lipoic acid, caffeine or resveratrol are just a few examples of such unpalatable substances.

The dosage form matters: the coating of a tablet can mask an unfavourable taste completely. However, this common form of delivering pharmaceuticals finds little acceptance for dietary supplements. Consumers are free to choose their dietary supplements themselves and place a stronger emphasis on convenience, a pleasant taste and a good mouthfeel. Formulations that are available in sachets and can be taken without water or fluids are ideal when traveling and easy to integrate into daily routines. Tablets which start to disintegrate in the mouth are similarly popular. Such formulations consist of powders or fine granules that, if possible, should not be felt on the tongue.

The ideal particle size: particles below 100 μm meet this requirement but, due their large total surface, can only be coated insufficiently so that the unpleasant taste may still emerge through defects or pores in the coating. Therefore, compact and slightly larger particles are required as the starting material. For a particle size range of 300-500 μm , the proportion of the coating will be about 50 %, allowing the taste to be masked well. In combination with a well-tasting flavour, acid and bicarbonate, swallowing can be made pleasurable.

Caution, Hot! Coating with Lipids Requires a Specific Processing Set-Up

Molten fat is often used as an economical coating for fine particles. To perform hot melt coating in a

fluidized bed, the temperature of the entire spray system must be kept above the melting point of the fat. All spray conduits including the nozzle are thus treated with hot atomizing air and the melt heated well above its melting point. The aim is to prevent premature solidification of the fat within the conduits or immediately after leaving the nozzle. The main focus throughout the process is thus on temperature control. At the tip of the nozzle, the hot liquid is nebulized into fine droplets, which subsequently settle on the surface of the particles and spread. Setting free the heat of crystallisation, the fat solidifies and forms a film of coating that encapsulates the bad-tasting ingredients. Because the temperature of the product environment influences the speed of crystallisation, this is another critical process parameter. If the product temperature is well below the melting point of the fat, the droplets will solidify prematurely. They will spread insufficiently over the surface of the particles, resulting in a porous layer through which the ingredients will pass onto the tongue of the consumer.

The appropriate method: For coating powders and fine granules, the bottom spray technique can be used. Through a targeted routing of air, the product is guided past the nozzle where it interacts with the nebulized fat. The short distance between the coating droplets and the particles facilitates the optimal spreading of the fat over the particle surface, resulting in a good masking of the product's taste.

We have built up considerable expertise in handling molten lipids and provide hot-melt coating for food additives and pharmaceutical ingredients. You can rely on our know-how for masking the taste of your products.

If you have any questions or require further consultancy please [request information now!](#)

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