

Coating | Liquid addition

Custom Powders offers a number of techniques in the area of powder coating or liquid addition. The choice for the right technique depends mainly on how effective the coating or spread of the liquids needs to be, on how much needs to be processed, the required temperature range and the amount of liquid that needs to be added.

Coating is often used to achieve the following improvements on product characteristics:

- Less wear a smooth surface
- Better flowing characteristics
- Masking a odour or smell
- Protection against air, light or moisture
- Systematic release of active ingredients



• Delaying the solution of the material

- Visual characteristics (cosmetic changes)

Thanks to the modular nature of our equipment we are able to meet the specific requirements of our customers. All systems are laid out in stainless steel and are positioned in process units that are strictly separated from each other. In combination with our thorough cleaning procedures, this separation ensures that the risk for cross contamination is minimized. We offer batch traceability as a standard service and with continuous systems we take samples at least

once per hour and more often if required. Also this process can be combined with other processes like milling, sieving, drying.



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Fluid Bed Coating | Hüttlin/Glatt

Hüttlin is one of the market leaders in the area of powder coating and liquid addition. The machine that we have available is a 1200 litres machine (HDG-1200) that is equipped with the newest and most innovative technologies in this area. It is a multi-functional batch machine that was specifically designed for the coating of powders. The patented spraying system makes it possible to spray one or more liquids directly onto fluidised products.

The big advantage of this machine lies in the fact that it is capable of distributing the liquid very evenly in a reproducible manner with minimal loss and maximum efficiency. If required, this piece of equipment can coat and dry the product then cool it down again. The typical processing range lies somewhere between 5µm and 4 mm. Due to its size and complexity this piece of equipment is less suitable for the processing of smaller quantities.

The Glatt machine we have available is a batch machine of 120 litres (WSG-120). This machine is less complex than the Hüttlin and less versatile. It is however a very user-friendly type of machine with efficient spraying capabilities and a very fast and economic drying capacity. The liquid in this process is sprayed onto a solid and this combination is dried so that a thin firm coating layer is achieved. Small dispersed droplets, in combination with a low viscosity, ensure a uniform distribution of the coating. This machine in many cases is a valid alternative



for the Hüttlin. The setting up as well as clean down and process control of this machine are a lot simpler than for the Hüttlin and this makes this machine also suitable for smaller campaigns.



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Batch Blenders



Lödige Ploughshare blender – This type of batch blender has been specially designed for the fast and accurate homogenous blending of products with a range of densities, structures and flowing characteristics. The unique blending action ensures a consistent product quality of the sequential batches. These blenders offer the perfect solution for blends varying from fine powders to reasonable heavy dough like products. They are equipped with ploughshares that turn around in the cylindrical horizontal drum and thereby swirl the product components from the

walls of the blender into the available mixing space. The equipment is fitted with rotating side blenders in order to ensure an even more homogenous product and break up possible lumps in the raw materials. These side blenders also achieve an effective distribution of liquid through the mixtures if required to do so. We have available a 4.2 m³ blender with a work capacity of about 3m³ and a 3m³ machine with a work capacity of 2m³. The typical blending time in this type of blender is normally around 2- 5 minutes. Both machines are equipped with side choppers and are provided with an explosion suppression system.

These ploughshare blenders can be used for a broad range of blending applications.

- Dry powders / blending granules
- Breaking lumps/ caked material
- Wet granulation / agglomeration
- Blending of dough like materials or pastes
- Liquid coating of powders and granules
- Dispersion of liquids
- Incorporating of fats or oils
- Blending of slurry like materials

Dispersion with high shear

Henschell – This is a 600 litres high intensity batch mixer that is capable of adding liquids in an effective way. Liquids are often added as a means to de-dust product or to coat them with a protective layer. This technique is designed to fast blend solid dry materials but also to disperse liquids into dry products. This piece of equipment is often used for friction blending of

coatings and where the heating up products is required. This technique is therefore not suitable for sensitive materials, which can be damaged by heat, or for fragile products.

For further details on this piece of equipment we like to forward you to our sheets concerning the blending of powders.



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Continuous high shear blending

Lödige CB-30 – This high shear continuous blender is specially designed for the homogeneous inter-blending of liquids with dry powdery materials.

The material that needs to be blended is transported through different blending zones in a horizontal cylindrical drum. The blending elements have been specially designed for transporting, dispersing of the added liquid and blending of the final product.

This machine is at its best where relatively small amounts of liquids are to be blended into a product without the formation of lumps or in those instances where one wants to produce uniform granules with the addition of copious amounts of liquid.



The big advantage is that this is a robust machine that is easy to clean and that can blend large quantities of products homogeneously and accurately in a very short time.



Drum Coater

JR-Boone – This continuous rotating drum coater is often used for the coating of products that have a somewhat larger or cruder particle size distribution. This machine is specially designed to accurately blend a liquid into a raw material with a minimum amount of shear. This route is very suitable for the coating of products that have a somewhat softer composition as well as for products with somewhat varying densities.

The design of the machine ensures a thorough and accurate blending of the liquid into the powder with relatively little shear.

