

Anti Set-off Spray Powder L3

Soluble specialist for specific purposes!

The market for anti set-off spray powders offers a wide range of products with different properties. In the following, we will concentrate especially on the solubility of spray powders in water. Products, made of the raw material starch, will not be the topic of this article, as starch is insoluble in water.

there is soluble and soluble

Spray powders with water-soluble properties consist of the same primary product as the common sugar we daily use, thus offering less advantageous properties for anti set-off spraying: They dissolve quickly and in the dissolved form they get sticky in case of humidity. These powder types represent quite a small share in the market and they were not able to convince by their properties. This fact does not apply to the anti set-off spray powder L3 in its different grain sizes.

from the same mill as K4 and S5

This soluble powder is produced by the same manufacturer as the spray powder series K4 and S5, established and well-known throughout the world for their incomparable quality and variety of grain sizes. The spray powder series L3 derives benefit from the entire experience and know-how of the market leader **KSL staubtechnik gmbh**.

The basic and main task of an anti set-off spray powder, including the soluble ones, is to achieve the necessary space between freshly printed sheets. This effect as a spacer is required in order to avoid setting-off and, thus, to prevent the freshly printed sheets from sticking together in the stack. On the other hand this space between the sheets enables the entry of air, supplying the ink with oxygen, necessary for the process of the oxidative drying. This kind of ventilation is required for the drying and absorption of the ink. Anti set-off spray powder would not be in accordance with its purpose as a spacer if the powder dissolved on the paper, consequently being not effective as a spacer any more. This reaction of an anti set-off spray powder may probably be described as ideal by some users. Yet, this creates the question about the right time of going into solution. The powder cannot be supposed to know when to disappear. If the "right" time for dissolution is shortly before the entire drying of the ink, the following question arises: Where is the water supposed to come from which a soluble powder needs to dissolve?

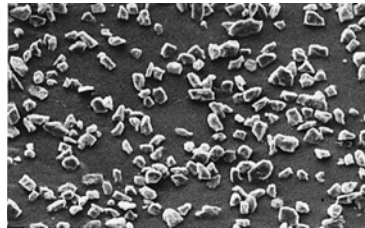
These last thoughts should especially be suggested to suppliers or users of such powders which are said to be dissolved or absorbed during the process of drying of the film of the ink.

If it seems to be possible to question the process of dissolution of powder on the printing matter, the actual sense of solubility has to be reconsidered and seen from a different angle. The following presentation of the spray powder type L3 will impressively illustrate this other real sense of solubility.

native basis of raw material

The soluble powder L3 is a product of natural consistency - made of a sugar derivative. Since L3 is a pure natural product, a food grade even, this powder is undoubtedly harmless to health. This raw material offers a whole range of distinct advantages in view of its properties. It does not dissolve too quickly. A quantity of water which is

seven to eight times of its own volume is required to dissolve it completely. It is not likely that, being in contact with the ink, the powder is dissolving and crystallizing prematurely, producing scratching crystals. After the process of dissolution, the raw material used for the production of L3 does not show any signs of being sticky. When stored in a dry place, this sugar derivative remains stable. It is not hygroscopic, that means it does not absorb the atmospheric humidity. It does not lump and has excellent spraying qualities (this article will revert later to any particularities in regard to the spraying units).



Anti set-off spray powder
L3/15
SEM enlarged 100-fold

L3 has a crystalline structure with a rounded particle shape. The grain is soft, which can even be cracked down by increased pressure. The set-off of freshly printed matters is reliably avoided since L3 acts as an effective spacer in spite of its solubility.

sense of solubility

Because of the solubility the powder can reliably be absorbed and taken into the circulation of the fountain solution by the wet rubber blanket and the water of the damping unit as well as on the printing plate. The fountain solution offers best conditions for the dissolution and will not be saturated by the dissolved powder, as the water is consumed and continuously renewed.

Besides, the pH-value of L3 is similar to that of the fountain solution (slightly acid); therefore, the water is not influenced chemically. Nevertheless some mud will accumulate in the container of the solution, but this is mainly the usual pollution like paper dust etc.

following pass through

Principally the use of L3 makes sense if the printed matter has to pass through the printing machine more than one time or if a further print finishing follows. This enables the printer to make greatly use of the specific properties which are offered by the soluble spray powder range L3.

Originally it was developed for multi-colour printings with several passes through one machine. This is, however, a sector which becomes less significant in a time of multi-colour presses. Nevertheless, the purpose of L3 can be pointed out again: The anti set-off spray powder L3 is always employed when a printed matter has to pass through the printing machine more than one time. L3 is, for example, used if after printing with a four colour press an additional decoration colour or an overprint varnishing is requested.

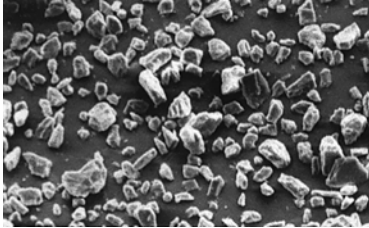
perfecting work

The L3 powder offers considerable advantages in printing and perfecting and is, therefore, frequently used for this kind of work. If L3 is

applied with the first pass-through, cleaning intervals during the reverse side printing can be extended many times. As L3 is less accumulating on the rubber blanket than all non-soluble products, it can certainly be considered as the powder causing the smallest wear of the printing plates.

print finishing, print converting

The specific properties of L3 show their superiority especially in further processing such as varnishing or laminating. L3 ensures almost smooth surfaces preventing blisters and spots. In order to obtain such high quality printed matters it is advisable to effect a so-called cleaning pass-through, which removes the powder of the previous printing process by the wet rubber blanket.



Anti set-off spray powder
L3/20
SEM enlarged 100-fold

Therefore the printed matter passes the press without ink but with working damping unit. If the contact pressure is increased, the removal of powder from the sheet is absolutely guaranteed.

It is obviously, the anti set-off spray powder type L3 offers distinct advantages for the offset printing. Additionally, L3 combines all the principle properties and quality characteristics expected from an anti set-off spray powder. L3 is available in the complete range of four different grain sizes, as there are L3/15, L3/20, L3/30 as well as the large grain size L3/45.

always the suitable grain size

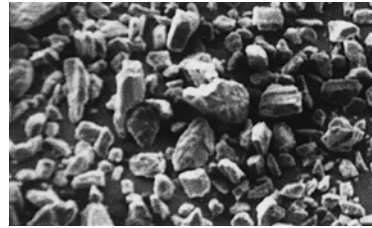
The printer will find the suitable grain size for every kind of paper and print work. He will soon find out which to use, depending on each printing purpose. Because of its very narrow grain fractions, L3 offers the greatest possible part of active grains working as spacers. L3 does neither contain any coarse particles nor any inactive fine ones; this is according to the quality requirements, as these fine particles only cause dust on the printed matters and soil the printing machines. This also shows that L3 does an excellent job as a spacer and offers superior protection from setting-off with a minimum quantity of powder.

The only restriction to be mentioned is the use of water based varnishes. If the soluble powder L3 is intended to be applied in this combination, it basically has to be proceeded with utmost caution!

When using the soluble powder L3, sometimes obstructions of certain passages in the spraying units are noticed.

maintenance of the spraying unit

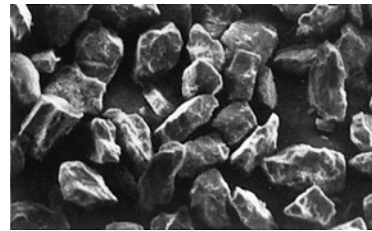
When using a soft sugar-based powder the inevitable slight abrasion of the single grain in the spraying unit can cause an obstruction of the narrow passages. This effect is intensified by the increased static charge.



Anti set-off spray powder
L3/30
SEM enlarged 100-fold

The affected parts of the spraying equipment can easily be removed without spending much time. If those parts are put into warm water, any deposits will be dissolved. After that process a complete drying of the parts is absolutely necessary. In those cases where the machine is permanently in operation, it is advisable to hold ready a set of interchangeable parts - so-called service-kit; this will pay off within short time. The above described minimum efforts of maintenance guarantee, together with the regular granulation of L3, best and reproducible spraying results. Under all circumstances it has to be avoided to remove any obstructions mechanically, i. e. with screw-drivers, drills, wires or something like that. Using such tools causes scratches and leads to an accelerated deposit of finest powder abrasions.

Finally we would like to point out that the spray powder type L3 is a real specialist amongst the anti set-off spray powders.



Anti set-off spray powder
L3/45
SEM enlarged 100-fold

It is important to underline that an universal powder suitable for every printing purpose does not exist. Thus, it is always preferable to select the individual type of powder for each printing job. Special equipment to facilitate the change of powder is offered for quite some time by the manufacturers of the spraying units. Anti set-off spray powder L3 is of course available from suppliers of the printing industry in consumer-friendly packaging of 1 kg-bags or 2 kg-cans.