

Hints for Handling of Sheetfed Inks

Storage and processing

As ideal process temperature for sheetfed offset inks the range between 18 and 25°C is valid. The inks should be stored therefore in the way that they will come on the press at this temperature.

If sheetfed offset inks are too high in viscosity due to storing at low temperatures problems may occur by insufficient flow in the duct and picking at sensitive stocks. If the inks will be processed at higher temperatures, so because of low viscosity misting, ink/water problems or higher dot gain may occur.

Packages

Cartridges have to be stored vertically standing, the valves downwards under exclusion of daylight. Before insertion in the press, each cartridge has to be tested on movability of the piston. For this the cartridge has to be pressed with both hands and released again, to ensure that the piston will be perfectly movable within the sleeve. Cartridges which show outer damages especially at the valve or cartridge shoulder may not be used. At inks in cartridges which became high viscous during low storing temperature, it may be necessary to increase the pressure of the pressing device.

Before connection of the drums or containers to the ink pumps, the skin which may have been formed on the ink surface has to be removed carefully and the bonding of the inline foil should be checked.

Please pay attention that the foil is not be damaged when sending back emptied 300 kg containers with inline foils.

Emptied containers without inline foil first have to be sprayed inside with anti skin agent before sending back.

The outlet of our 500 and 1000 kg containers with pressure plate should be packed with a plastic bag before sending back. So spilling during the transport will be avoided.

The aim of our technical documents is to inform and advise our customers. However, the transferability of general values known from experience and laboratory results to concrete practical applications depends on a number of factors which are beyond our control. We therefore ask for your understanding that these advice documents cannot be used as the basis for claims in law.

Before and during taking out of the ink

The exact colour shade of the ink cannot be judged just by looking into the ink package. All inks appear in thick layer – in the container – considerably darker and dirtier as in the print. This effect at Yellow as brightest ink is developed strongest, at black less.

When taking out the ink with ink spades sometimes there is the appearance, that the inks contain coarse particles. This occurs by finely dispersed nitrogen bubbles.

Our sheetfed offset process inks are produced in big batch systems with a batch size of 3000 kg. During production the ink is warmed up by the energy entry in the dissolver and in the perl mills. To exclude a reaction with oxygen from the air (oxidative drying) the production system is designed as closed system and filled with nitrogen.

Depending to rheology of the inks during filling over the three roller mills a small quantity of nitrogen may remain in the ink and can be recognised in the tins as little bubbles. These bubbles, however, will disappear on the rollers of the inking unit and won't lead to printing problems.

As the bubbles are from nitrogen and not from air, particle formation by oxidative drying can be excluded.

Mixing of the ink in just opened tins is not normally necessary. Exceptions are matt varnishes, where during longer storing time sedimentation of the matting agent may occur, and always then, if only small ink quantities will be taken out of vacuum tins. Here it is of advantage, to disperse the antioxidant on the surface into the ink.

Drying

To accommodate different requirements, sheetfed offset printing inks are offered with different oxidative drying speeds. Specific details can be found on the label of each product.

Oxidative is the description for inks with fast oxidative drying. Such inks dry quickly in thin layers. During longer print interruptions the rollers have to be cleaned and the ink in the ink duct has to be sprayed on with antioxidant. At the end of the shift the rollers have to be cleaned and the ink duct as to be emptied and cleaned.

Roller fresh are inks, which oxidative drying was retarded in a way, that they may stay on the rollers and in the duct of the press over night without being sprayed with antioxidant. Naturally the duct fresh inks have slower drying characteristics on the stock.

Duct fresh inks may stay in the duct over night, the rollers, however, have to be washed.

Semi duct fresh inks don't need to be sprayed on during longer interruptions of work. These inks can stay in the duct over night after spraying, the rollers have to be washed. As spraying agent to avoid skin formation we recommend our antioxidant Gilnox.

The mentioned drying periods can only be regarded as basic values, as the drying speed is depending additional highly on the layer thickness, the temperature, the air humidity and the characteristics and quantity of emulsified fountain solution.

Furthermore, one should consider that adding drying agent, antioxidants or anti skin agent changes the original drying properties of the ink.

The oxidative drying of sheetfed offset inks also implicates that in opened tins or big volume packages without vacuum in time skin will be formed. This has to be removed carefully and completely before the use of the ink. Even small quantities of ink skin can disturb whole print runs by the occurrence of hickies.

After the print

Ink which was mixed with printing aids should not be filled back to the original ink.

Waste inks are classified as key number 080312 according to the European waste register and have to be disposed regarding the authority regulations.