

Paper Specialties



Exactly your chemistry.

Cartabond[®]
**Crosslinkers for improved
offset printing and converting**

Cartabond[®]: Crosslinkers for improved offset printing and converting

Many problems occurring during papermaking, converting and printing operations are due to the presence on the paper surface of free or weakly-bound particles and fibers.



During printing and converting operations such as sheeting, rolling and decurling, free particles tend to form dust, causing production stoppages and reduced printing quality. This is especially true when the paper surface needs to be wetted out for printing or converting operations. Water weakens the internal bonds that normally retain the weakly bonded particles and fibers on the surface, which results in dust or deposits.

This is particularly relevant for silicon release and offset printing papers, as water must be applied on the paper surface, in the first case to allow calendaring and closure of the surface and, in the second case, to separate areas to be printed from unprinted areas. In the offset printing process, fountain water is added to the areas where ink must not be applied. Highly tacky inks are then applied by several consecutive printing heads, first on the dry areas, but then also on areas where moisture remains from previously applied water.

As the paper surface is weakened by moisture, ink film splitting between blanket and paper can result in the release of particles and fibers from the surface, which then accumulate on the blanket and printing rolls due to picking, piling and linting. As a consequence, the printing quality deteriorates, which usually leads to a loss of highlight dots and/or gradual lightening in the solid areas.

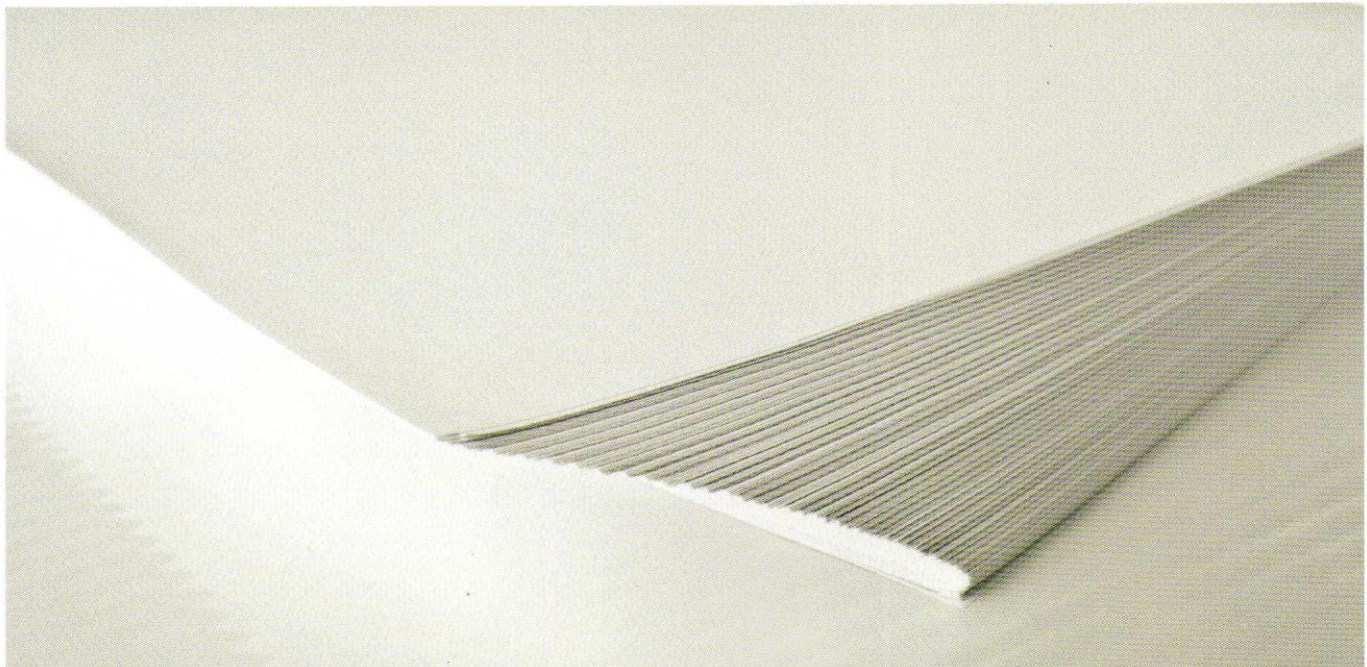
Cartabond® crosslinkers for improved wet surface strength

Crosslinkers offer improved wet surface strength by decreasing the water solubility and/or aqueous swelling of binders and fibers close to the paper surface. They create additional links between the binder polymer molecules, the cellulosic fibers and the filler or surface pigment particles. Cartabond crosslinkers are highly reactive. They quickly crosslink binders as soon as water is evaporated from the paper surface in the drying section of the paper machine. Cartabond crosslinkers are mainly based on two chemical types:

- **Glyoxal-based crosslinkers**, such as Cartabond TSI and EPI, which react mainly with the hydroxyl groups of water swellable binders such as starch, CMC, Polyvinylalcohol, etc.
- **Zirconium-based crosslinkers**, such as Cartabond MZI and KZI, which react with the carboxylate groups in synthetic latex binders, such as carboxylated SBR, styreneacrylate etc.

Cartabond crosslinkers are selected depending both on their chemical properties and the type of paper being produced:

Product	Application	Benefits	Food contact compliance
Cartabond TSI	Uncoated and coated offset printing paper, office paper, silicon-release carbonless paper	Multipurpose surface strength improver. Resistant to high temperature and pH conditions in coating color (resp. up to 70 °C and 9.5)	BfR 36 FDA 176.180
Cartabond EPI		Multipurpose surface strength improver with optimized cost performance	BfR 36 FDA 176.180 FDA 176.170
Cartabond MZI	Coated offset printing paper (LWC, MWC)	Activated zirconium technology offers superior cost performance compared to benchmark	BfR 36 FDA 176.180 FDA 176.170
Cartabond KZI		Activated zirconium technology offers superior cost performance compared to benchmark. No ammonia smell	BfR 36 FDA 176.180 FDA 176.170



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