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PRIMER INTELLIGENCE

THE PERILS OF OVER-TREATMENT

In our last issue of Primer Intelligence, we described the heroic effects of flame and corona discharge treatment. Now it is time to back-peddle a little and warn of the risks inherent in too much of a good thing.

Polypropylene (OPP) substrates generally have anti-oxidants incorporated into the film and are quite tolerant to high levels of treatment.

Polyester (PET) and polyamide (PA) films, on the other hand, are more delicate substrates. <u>Light treatment</u> is necessary to produce the oxidized sites which will chemically bond to the primer. <u>Too much treatment</u> will break down a microscopic layer of the film surface, which will destroy the primer's performance.

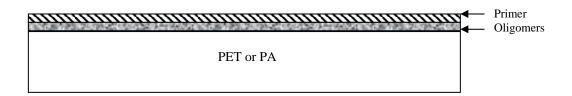
Here is what happens when PET and PA are over-treated:

- The PET or PA polymer breaks down into short chains a few monomers long. These molecules are *oligomers*.
- Oligomers are oily or waxy and can interfere with primer wet out.
- Oligomers form a weak boundary layer which releases from the base film.
- The functional end groups on the oligomers (carboxylic acids, for example) can bind to the primer. In addition to being a poor adhesion promoter, the contaminated primer is likely to be very water sensitive.

Signs to look for when over-treatment is suspected:

- 1. The liquid primer turns yellow or brown in color during a run. This is because oligomers on the film have washed from the film back into the primer pan.
- 2. A waxy or oily residue builds up on the gravure cylinder during a production session.

Consult your film supplier for optimal treatment levels.



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