

Cleaner with Chematic .

Technical Brief for : CLEANING TITANIUM DIOXIDE RESIDUES

Date : December 2007

Subject : **Chematic® 400 Series Products**

Industry-wide, it has been found that coatings formulated with titanium dioxide often leave behind a light film or haze after cleaning. Normally, this remaining residue can be manually wiped off most surfaces. Unfortunately, equipment designs can make access to all surfaces difficult, making the removal of this remaining titanium dioxide hard and labor-intensive.

After several years of research, Dober has formulated new detergents and the required critical application techniques to allow these residues to be rinsed away with no manual wiping, thus addressing these difficult cleaning challenges. This Technical Brief describes two of the detergents in the Chematic® 400 series product line.

Chematic® 405 and Chematic® 410

Chematic® 405 and Chematic® 410 were designed to meet European Union regulatory requirements. During the formulation of these products, we found that while either one of these detergents would work on general coating and TiO₂ soils, that slightly more optimized cleaning could be achieved through the introduction of both chemistries. In doing so, we developed Chematic® 405, with a pH of 5, which is more effective at removing coatings containing lighter colorants and the Chematic® 410, with a pH of 10, which is more effective on darker colors, often containing iron oxides. Both detergents are mild, low foaming and can be used in both manual and CIP applications.

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The logo for DOBER, featuring the word "DOBER" in a bold, blue, sans-serif font. The letter "O" is stylized with a white swirl inside it.

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Application Expertise

These detergents were designed specifically to clean coating pans, fluid bed dryers and equipment associated with the color coating of tablets. We realize the importance of formulating detergents that can be used within the environment in which these pieces of equipment are normally used and operated. During formulation, we had to consider operator safety, the design of these types of equipment, the facilities in which they are often used and how they would be cleaned to avoid the need for significant capital expense or redesign.

Dober formulated the Chematic® 400 series to be safe for manual use, mild, to avoid damage to the surrounding environment and alleviate any wastewater treatment issues and low foaming, so that they can be used in spray, manual or CIP application. During any cleaning process the T.A.C.T variables are always utilized. The T.A.C.T variables stand for Time, Action, Chemical, and Temperature. These variables are manipulated to improve the cleaning process, based on what is required to remove the residue, what is available and what is safe to use. During the research and development phase of the formulation of these detergents, we found it is essential to follow the cleaning cycle recommendations from Dober to successfully remove these residues. Any variation from the Dober recommended cleaning method can have adverse effects and reduce the efficacy of the cleaning.

First, do not expose the residue to any significant heat. Eliminating any exposure to heat is crucial to the successful removal of these products.

Second, do not pre-rinse the residue or use any type of pre-flush on the equipment. In some cases the pre-rinsing of the titanium dioxide residue can reduce the detergents' ability to remove the residue.

Titanium dioxide color coatings have a wide variety of formulations, making it difficult to give one specific recommendation. Dober will perform an ACM (Application Cleaning Methodology) coupon study to provide specific customized cleaning recommendations for each application. Please contact Dober directly for information on how to use these detergents in your specific application.

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