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POWDER COATINGS – AN ECOLOGICAL ALTERNATIVE

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Abstract

Powder coatings applied as a dry material contain very little, if any, Volatile Organic Compounds (VOCs). If no solvent is involved in the production and application of powder coatings, there is a reduction in fire risk, there are no costly wastes of organic solvents, and the health hazard to operators is diminished.

The formulations for powder coatings could also be optimized in order to replace dangerous ingredients, such as triglycidil isocyanurate, considered a mutagenous agent, or chrome yellow pigments (Pigment Yellow 34) and molybdate red pigments (Pigment Red 104).

The characteristic of powder coatings which can make them dangerous for the environment and people health is their pulverized form; particles with a normal distribution of size between 10 to 150 µm could be a pollutant for the atmosphere (as powder suspensions) and an irritant agent for the respiratory system if the dust is inhaled.

This paper presents the methods of reducing the concentration of fine particles in both the production and application lines for powder coatings. Methods of reusing the fine particles are also presented.

Keywords: powder coating, fine particles, recovery, recycling

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