

TITLE: **Weight Loss Which Occurs During the Curing Process of Powder Coatings**

ABSTRACT:

As powder coatings continue to grow in the U. S. market, at over 12% per year, more interest has been shown in how much and what actually evolves during the cure of powder coatings.

Supposedly non-emissive chemistries such as TGIC cured systems, hybrids and epoxies actually lose approximately 1 percent weight during cure. Much of this weight loss can be attributed to absorbed moisture. Other materials given off during cure include oligomers, cyclic materials, etc.

Concern about E-caprolactam blocking agent evolved during the cure of PU powder coatings caused us to ask the question. How much E-caprolactam evolves during the cure of typical thin film PU powder coatings?

Some thin film PU powder coatings lose as little as 2 percent E-caprolactam during cure.

It is the purpose of this paper to quantify weight loss occurring during the curing process of powder coatings and to identify some of the principal components evolved during the curing process.