

Title: **Design of inks based on the chemistry of acrylates for their polymerization through ultraviolet light**

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The project presented below, appears from a real need in the ink industry, the rising demand of inks able to be fixed on many different materials by drying with radiation of UV light.

Until now, information about the material where the ink needed to be fixed was required by the suppliers in companies in order to formulate the right composition for each ink for every surface. One only ink, suitable to be used on many materials, would be an interesting way to save money and time.

In particular, this work is based on the different experiments and tests to find an UV (Ultraviolet) ink suitable for PP (Polypropylene), PVC (Polyvinyl Chloride) and Glaspac.

For that, different trials have been done. As starting point, we mixed some types of inks, appropriated for different materials individually, and then we checked, using different methods, if the mixture could be also useful for all materials, at the same time.

Our first conclusion was that the simple mixture didn't have the necessary attributes to be fixed on more than one material and that we needed to redefine our formula. The final success might depend on more elements different from the composition of the original mixture and the individual inks.

Hence the following option emerged. We analyzed the components of the inks series used previously and it was studied which components could be removed or added in the new ink, and if, varying some parameters, we could create the right formulation.

After some tests, we finally developed a composition for the new ink, which was tested properly on some materials with success.

In a near future, the company will commercialize the product, with the resulting savings on manufacturing costs and increasing benefits.

Keywords: inks, ultraviolet lights, drying, innovation, improvement, materials.