NEW SYNTHESIS WITHOUT POLLUTING ORGANIC SOLVENTS FOR PREPARING PAINTINGS FOR THE WHITE LINE.

Summary

CROMOGENIA UNITS SA raised in this research and development project a new synthesis hydroxyalkylamides without using contaminants organic solvents for use as a curing agent for powder coatings applied to white goods. Powder coatings do not contain VOC's (Volatile Organic Compounds). It is applied without any air emission. Regarding the components of the powder coating, particularly the crosslinker which wants replace triglycidylisocyanurate is the Bis-Diethanoladipamide, which has a less offensive toxicological profile and also wants to manufacture through cleaner procedures.

The new synthesis or new method of preparing hydroxyalkyl (Bis-Diethanoladipamide) in solid state is carried out by reacting alkyl esters of dicarboxylic acids (dimethyladipate) alkanolamines (diethanolamine) at controlled reaction temperatures, removing the alcohol from the product, controlling the temperature of the reaction mixture and recovering the solid hydroxyalkylamides (Bis-Diethanoladipamide) by a direct method as flacking. The addition of organic solvents is replaces, such as methanol, for water.

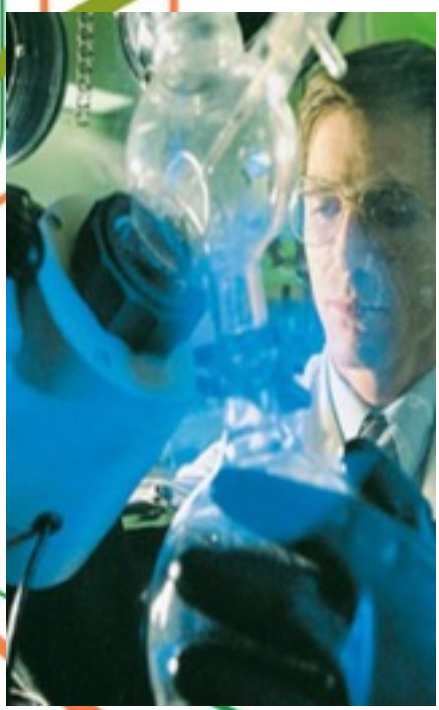
The new synthesis of hydroxyalkylamides will be more environmentally sustainable and environmentally friendly. Also, it will be a more efficient process than the current synthesis, to obtain a higher quality product (with minor impurities that current) and eliminating intermediate steps such as distillation of methanol before application of powder coatings, which will lead to a more competitive cost of the final product.

Technical targets:

- ❑ Synthesis of "new" hydroxyalkylamides scale prototype pilot plant Cromogenia Units SA and its optimization.
- ❑ Technical studio and economic feasibility of the new synthesis.
- ❑ Characterization of the functional properties of powder coatings cured with hydroxyalkylamides new product and final validation.

Expected results:

- ➢ Elimination of organic solvents addition and its consequent treatment as waste.
- ➢ New curing agent purer and more stable.
- ➢ Product economically competitive and environmentally friendly.



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