

The use of sustainable development solutions in exploiting the waste of prepress of flexographic plates

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Abstract:

The principle of environmental sustainability has emerged since recent decades as a vital and necessary requirement in various fields and activities of our daily life, especially in industrial fields, and it has negative effects on surrounding environment at all levels, whether airy, watery, noise and others ... etc. and Perhaps this is most prominent challenges facing the printing and packaging industry, especially in the prepress stage, since There are large quantities of non-processed photopolymer as a residue after developing of the flexographic printing plates whether prepared by the digital method (LAMS technology or prepared with negative films), and they are not then used in any recycling operations, due to their high sensitivity and hardening after exposing to light in addition to that they fall within the range of thermoset materials polymer, which occurs to photopolymerization and hardens, and then the bonds of the molecules cannot be re-bonded again to return them to their previous form. it is not used in any operations to recycling or enter in any manufacturing industry. Therefore, the aim of this study seeks to find alternative environmentally safe methods to exploit the Photopolymer wastes from flexographic plates prepress processes.

To achieve this, the research team followed the experimental method and descriptive analytical method in making experiments and laboratory tests to obtain practical alternatives to exploit that waste and test the possibility of using it in the production of printing molds and also ,the possibility of obtaining high thermal energy from the combustion of the non-processed photopolymer is higher than the thermal energy produced from activated coal ,paper and plastic waste to take it in industries that require high thermal energy, such as cement, iron and steel factories and other heavy industries that require thermal fuel with a high energy taste as biofuel instead of disposing it as useless and environmentally harmful waste.

Key words:

photopolymer non- processed - Bio fuels - UV polymerization - Environmental sustainability