

Mechanical and microstructural characterization of paint powder filled thermoplastic polymers from recycling

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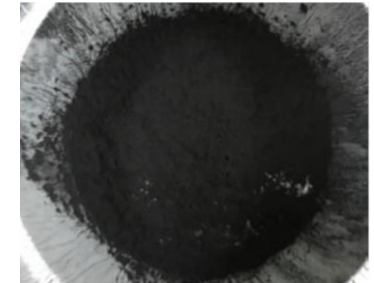


Fig.1: Paint powder
based on thermoset
resin



Fig.2: Recycled
polypropylene

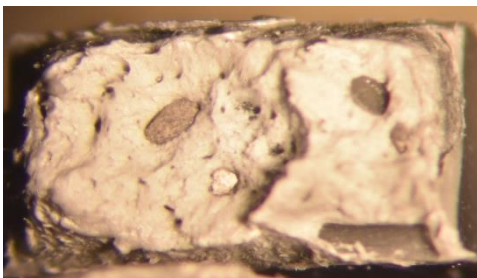


Fig.3: Observation of a
fracture surface of the
reinforced material

The principal aim of this work is to study the modification of the mechanical properties of thermoplastic polymers filled with the recycled thermoset paint powder.

The effect of the filler is analyzed with several matrix, two recycled polypropylene and a virgin polypropylene. Microstructural characterization was performed through different technics as DSC, ATG, MEB and EDX. Mechanical tests were also conducted to obtain elastic properties and impact properties. Thanks to the microstructural observations and the physicochemical characterization, the evolution of mechanicals properties of the blends can be explained and analyzed.

In some case an improvement of the mechanical properties is observed whereas impact properties seems to decrease with the presence of reinforcement.

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