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**EFFECTS OF INCORPORATING WASTE RIGID POLYURETHANE FOAM IN POLYMER COMPOUNDS
BASED ON POLYPROPYLENE**

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The refrigeration industry widely uses the rigid polyurethane foam (PUR) as insulation in the cabinets and refrigerator's doors. Due to the large volume of industrial waste generated by this material (process, quality control and waste from end-users), it's needed to take environmental measures to avoid improper disposal of this material, what represents an environmental problem. Some alternatives to re-use this material has been studied over the past few years aimed to find an alternative for recycling rigid polyurethane foam and, if possible, with economic advantage.

The objective of this project is present a composite based on mixture of PP/PUR residues that can be used in a technical application showing not only a recycling alternative for the solid waste as well as improvements in mechanical properties. The method consistis in incorporating residues of PUR in a matrix of PP by using PP-g-MA as a coupling agent and extrude the material. The pallets are then fed into an injection molding machine and the specimens are obtained.

Preliminary analysis shows that the incorporation of PUR residues in a termoplastic material (PP) is feasible and the formed composite material shows good mechanical properties. Automotive market is a potencial end-user of this material once this industry has been gradually replacing traditional materials by plastics and composite materials over the years and mainly because both materials (PUR and PP) have a very low density what refers economy to the automotive market because a lighter car leads to lower fuel consumption.