

THE CONTRIBUTION AND APPLICATION OF POLYMERIC MATERIALS IN THE METALLURGICAL INDUSTRY

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Abstract

Since their discovery, polymeric materials have been a constant in fields such as engineering and medicine. In the field of modern metallurgy, polymeric materials have helped improve the performance of work equipment by protecting metal surfaces and contributing to optimizing the efficiency of manufacturing processes. Their use is much more pronounced in parts such as bearings, seals and coatings due to their resistance to corrosion, high temperatures and wear. At the same time, polymers also play a role in the protection of metal surfaces thanks to specialized coatings that extend the life of metal structures.

The first impact factor of polymeric materials in the metallurgical industry is in processes such as metal casting and forming, polymer-based resins and molds that have a precision with greater accuracy than before leading to the reduction of material waste. Moreover, advanced polymeric materials in thermal insulation minimize heat loss and bring a plus to energy efficiency in metallurgical processes. Polymer adhesives represent a reliable solution in bonding, substituting the classic welding method in some industrial processes.

In conclusion, the subject of polymeric materials in the metallurgical industry is present and further researched, thus, a research on polymeric materials such as Polytetrafluoroethylene (PTFE - Teflon), and Polyamide (PA - Nylon), Polyurethane (PU) can be deliberated.

Keywords: polymeric materials, Polytetrafluoroethylene (PTFE - Teflon), Polyamide (PA - Nylon), Polyurethane (PU)