



5th IndianOil Petrochemical Conclave 4th February 2016

Innovative Additives for the Future

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Synopsis

Almost from the beginning of history of Polypropylene development, Phenolic and Phosphite Antioxidants are added to polypropylene (PP) to prevent degradation caused by auto-oxidation due to heat and photo-exposures. In the course of development of PP industry, several innovations of polymer additives together with catalyst and polymerization process improvements were realized to extend the application of PP. One of the most innovative additives in early 1980's was Nucleating Agent, developed by ADEKA Corporation. All additives have played their own critical role for the success of PP industry.

Throughout the entire period of PP and polymer additives development, the additives have been added via pelletizing section to realize the dispersion into polymer matrix, and even now this methodology is "common sense" of PP industry.

Now ADEKA has developed the new innovative methodology of adding polymer additives to PP. This technology is called "In-situ" technology. This new addition technology in combination with designated polymer additives achieves highest performance of polymer additives. For instance, designated phenolic antioxidant realizes superior stabilization ability, resulting in achieving sufficient stability with one-tenth-loading amount of current system. Furthermore, "In-situ Nucleation" technology demonstrated highest crystallization temperature that was not achievable so far. The presentation will introduce such innovative technology in the 5th Indian Oil Petrochemical Conclave.