



EFFECTS OF BINARY BLEND COMPOSITIONS OF PPA AND ITS CONCENTRATIONS ON MELT PRESSURE OF HDPE IN FILM BLOWING PROCESS

Z.Akbari^{1*}, M.Habibelahi², M.Nouri², M.Rostami¹

¹Marun Petrochemical company, Research center, P.O. Box668, Mahshahr, Iran-: zahraakbari90@yahoo.com and ²Center of Research & Technology of Iranian national Petrochemical Company, Pajooheh Blv., 17th km of Tehran-Karaj highway, Tehran, Iran, Postal Code: 1497713115

Polyethylene processability improve by adding processing aids through pressure reduction or melt viscosity like high molecular weight linear low density poly ethylene. Different kinds of fluoropolymer are very common processing aid and are used at about several hundred ppm to have a suitable function. However the research on adding polyethylene glycol to polyolefin's have shown that it has synergistic effect on processing improvement by compounding with mineral compound like diamite and if it is used alone about several thousand ppm of it doesn't have considerable effect on polyethylene pressure or melt shear viscosity.

The influence of poly (ethylene glycol) (PEG) and fluoropolymer containing additives on the processability behavior of film grade high density polyethylene was studied. It was found that the addition of small amount of PEG to polyethylene resulted in significant reduction of their pressure and melt viscosity. Film blown processing was used to evaluate the effect of processing aid on polyethylene possibility. The existence of small quantity of polyethylene glycol in two component processing aid have been shown a considerable effect on melt pressure drop in comparison to fluoropolymer, so that the pressure reached from 35 to 60 percent of initial pressure. Furthermore the amount of polyethylene glycol in processing aid formulations effective on melts pressure change. However poly ethylene glycol increases final pressure dropped induction time as if in its maximum concentration is reached to twice of induction time which is related to fluoropolymer.