



**METALTEK**  
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## PP RHEOLOGY (MFI) MODIFIER MASTERBATCH

### INTRODUCTION

High MFI PP can be produced by two basic methods:

◆ **Polymerization control**

◆ **Post-Treatment**

Addition of organic peroxides

Isotactic polypropylene is a semi-crystalline polymer. Free radicals generated using organic peroxides degrade the polypropylene backbone via  $\beta$ -scission. This chemical process is used to adjust the melt flow, grade, and to narrow molecular weight distribution. This operation is commonly called «**vis breaking**» or «**PP controlled rheology.**»

### REASONS OF USING MELT-VISCOSITY MODIFIER

Melt-viscosity modifier masterbatch is used to increase fluidity of polypropylene and at the same time to narrow the molecular weight distribution. The preparation and the use of a masterbatch of peroxide with a low concentration is safe and easy to handle.





## HIGH FLOW PP APPLICATION

- ◆ Melt blown and Spun bond fibers  
Water and air filter oil absorbent  
Diaper
- ◆ many kinds of molding applications
- ◆ PP recycling
- ◆ Radical initiator for Maleic Anhydride grafting onto polymer

## MFI MODIFIER MASTERBATCH BENEFITS

- ◆ Use like a standard masterbatch
- ◆ No dangerous and no legal constraint
- ◆ Excellent dosing accuracy
- ◆ Excellent for premix with pellets
- ◆ Excellent homogeneous dispersion

## SUPPLIED MELT-VISCOSITY MODIFIER MASTERBATCH

In order to adjust the polypropylene's viscosity (MFI), Polytechs (France) has two masterbatches based on the chain-splitting effect caused by peroxides:

### VMPP5X and VMPP10X.

These two masterbatches can be used to effectively cross-link polyethylenes.

Specifications	VMPP5X	VMPP10X
Peroxide content (%)	4.5-5.5	9-10
Bulk density (g/cm <sup>3</sup> )	0.5	0.5
Recommended addition rates	1%: PP MFI 3 → 15 10 → 40	0.5%: PP MFI 3 → 15 10 → 40
	2%: PP MFI 25 → 100	1%: PP MFI 25 → 100
	4%: PP MFI 25 → 220	2%: PP MFI 25 → 220