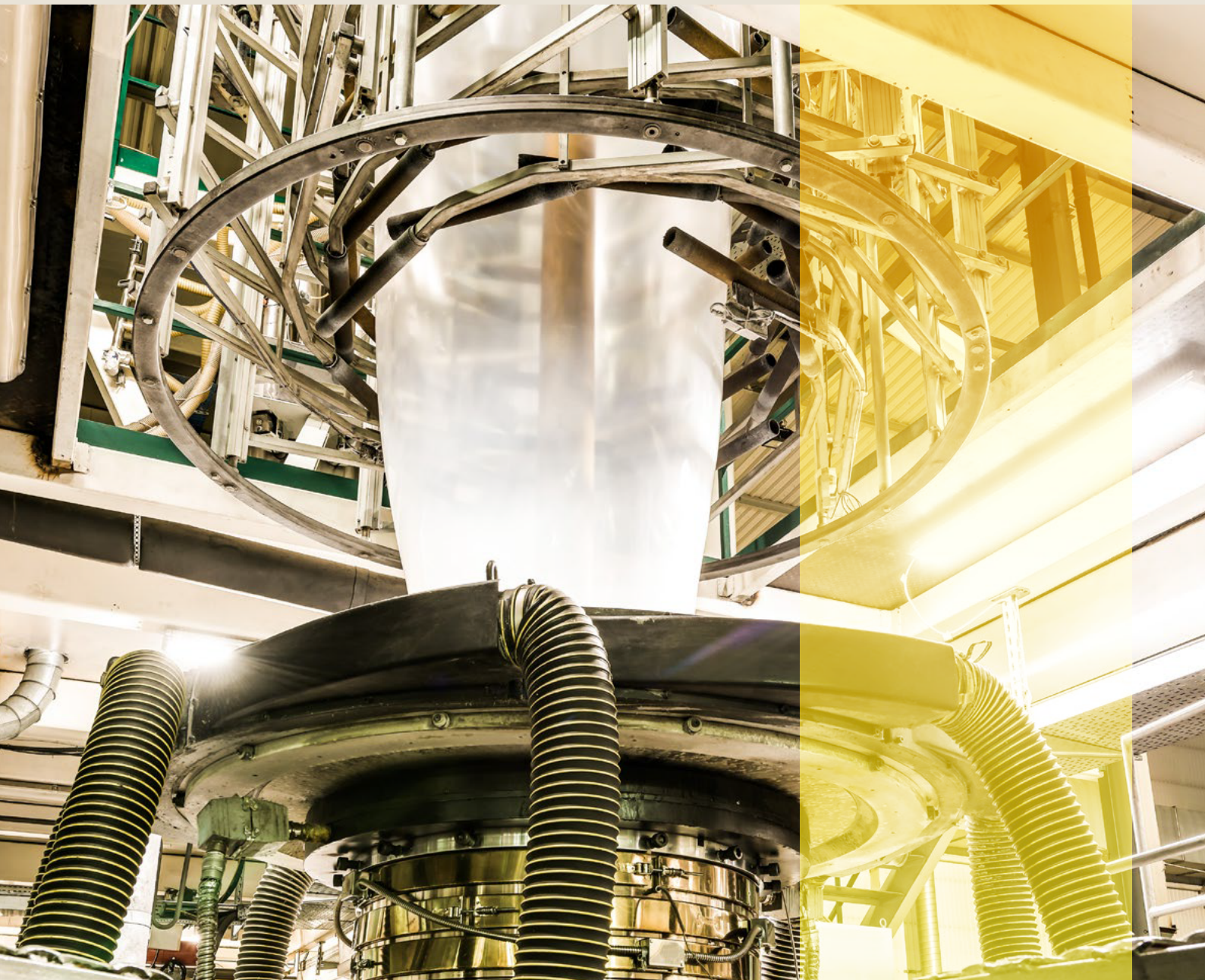


INOLUB™
Fluoropolymer Additives

GFL™
GUJARAT FLUORO CHEMICALS
VALUE THROUGH GREEN CHEMISTRY

Polymer Processing Aids



INOLUB™ P Polymer Processing Aids (PPA)

INOLUB™
Fluoropolymer Additives

Targeted especially at today's modern polyolefin resins, enabling molecular architectures that can meet the ever-increasing demands of film performance but without compromising their extrusion capabilities

- White free flowing fine powder
- Market leading colour consistency and dispersion
- Unrivalled supply reliability backward integrated

Inolub P series offers a range of fluoropolymer-based processing aids to improve the manufacture of

- LLDPE, LDPE, HDPE, PP blown and cast film
- Extrusion blow moulding
- Pipes and tubing (PEX, HDPE)
- Melt spun fibre
- Wire and Cable



Grade	Typical use level In ppm	Working Extrusion temperature °C	Characteristics
INOLUB P502F	200-1500	Up to 240	Primary product for blown film
INOLUB P501F	100-750	Up to 350	Suitable for high temperature processes, e.g. cast film
INOLUB P401F	50-500	Up to 350	Premier grade for use in presence of interfering additives, e.g. HALS
INOLUB P402F	100-1000	Up to 240	High performance product
INOLUB P412F	100-1000	Up to 240	Outstanding balance of performance and economics

Final Product Benefits

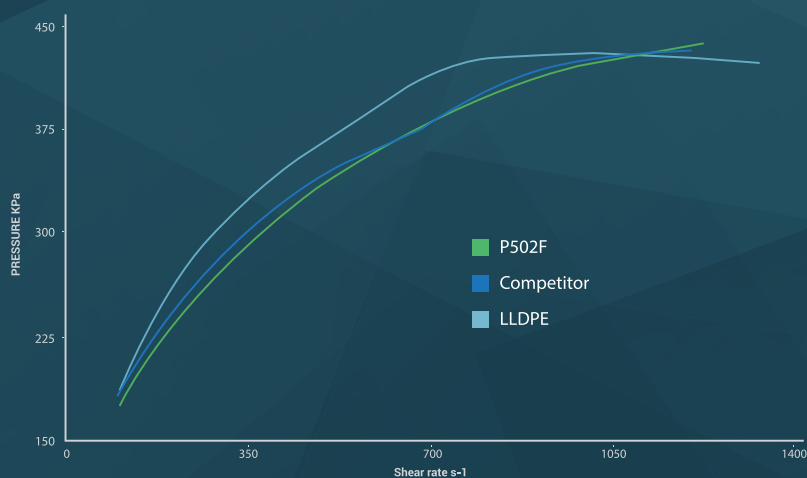
Inolub P series brings the following benefits:

- Elimination of melt fracture – “shark skin”
- Improvement of film transparency
- Improvement of surface smoothness
- Reduction of gels

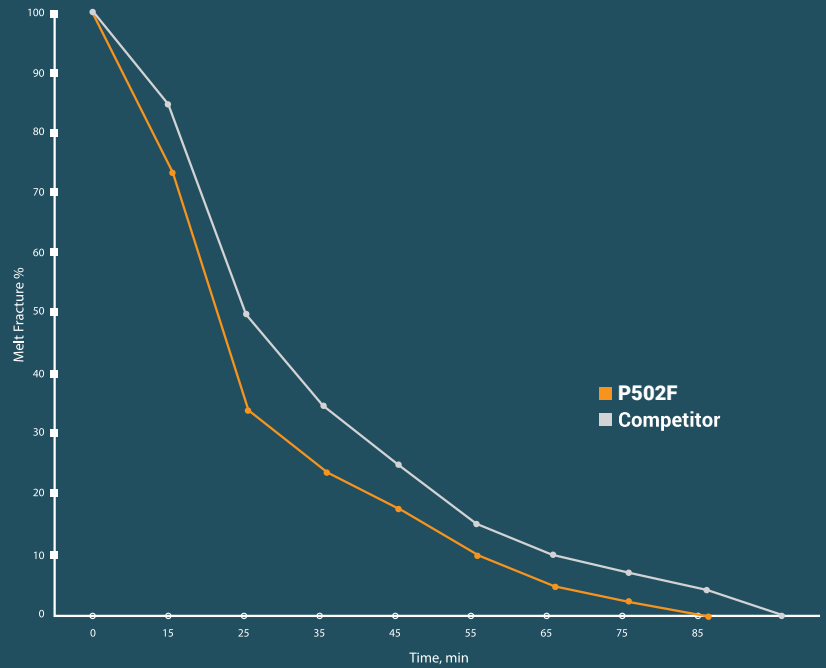
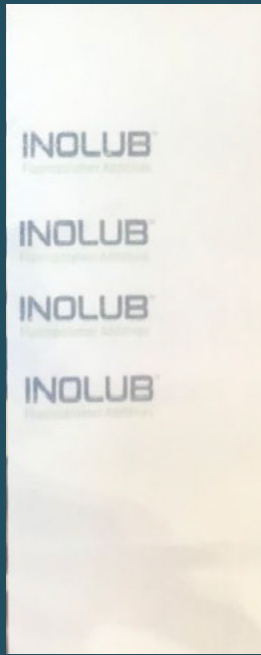
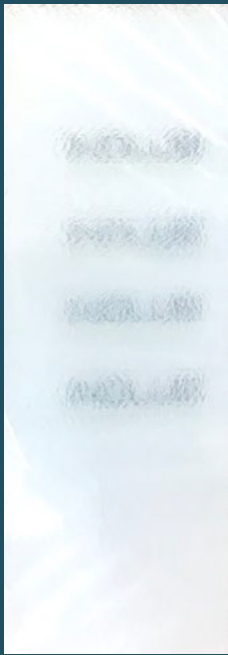
Processing Benefits

Inolub P series powder are specially designed to enhance the efficiency of operating conditions:

- Maintenance time reduction
- Reduction of die build-up
- Consistency of production
- Smoother extrusion conditions
- Lower energy consumption
- Reduction of cycle times and quicker transition
- Reduction of potential negative interaction with other film additives such as antiblock and HALS
- Reduction of extruder torque
- Reduction of polymer critical shear rate



Rheology Study



▲ Without Inolub P

▲ With Inolub P

▲ Melt Fracture Elimination - 600 ppm in C4 LLDPE, 0.7 MFI - Melt Temperature 175 °C

► Conditions of use

- **Inolub P** is mainly used as an additive at 50 -1500 ppm levels to overcome the processing problems encountered with polyolefins.
- For such a low concentration, it is highly recommended to use Inolub P in the form of a masterbatch (typically containing 1 – 5% of the pure additive) for accurate and uniform dosing.
- All **Inolub P** grades are safe for applications involving contact with food articles and meet USA FDA and European food contact regulations.

► How to use INOLUB P

The two main requirements to get the best out of Inolub P products are:

- A good dispersion;
- A uniform dosing at the typical low concentration level needed with Inolub P

For a converter, this is achieved by using:

- Either a resin that already contains Inolub P (many resin producers propose polyolefin grades which contain Inolub P with appropriate and uniform dosage and good dispersion);

Or a masterbatch:

- containing typically from 1% to 5% of Inolub P;
- which can then be diluted into their standard resin; (many masterbatch manufacturers propose PPA masterbatches based on Inolub P)



INOLUB™

Fluoropolymer Additives

Headquarter
Gujarat Fluorochemicals Limited

INOX Towers, Plot No.17,
Sector-16A, Noida - 201301
U.P, India

t: +91 120 6149600
f: +91 120 6149610

EU
Gujarat Fluorochemicals GmbH

14th Floor, Regus Centre Watermark,
Überseeallee 10, 20457, Hamburg,
Germany

t: +49 40808074 667/668
f: +49 40808074 520

Americas
GFL Americas, LLC

1212 Corporate Dr.,
Suite-540, Irving,
Texas 75038, USA

t: +1 512 446 7700
f: +1 512 446 7703

Works
Gujarat Fluorochemicals Limited

12/A, GIDC, Dahej Industrial Estate,
Tehsil Vagra, Dist. Bharuch 392130,
Gujarat, India

t: +91 2641 618003
f: +91 2641 618012