

## Low sealing temperatures in cast PP films for fast packaging line speeds

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Zhejiang Southeast Vientiane Technology Co., Ltd. (Zhejiang Southeast Vientiane) in Zhuji City, China is using Vistamaxx™ performance polymers to enhance the performance of its cast polypropylene (cast PP) films for food and non-food packaging applications. When Zhejiang Southeast Vientiane uses a terpolymer PP film formulation that includes Vistamaxx polymers in the sealing layer of the cast PP film, it achieves lower sealing temperatures and better seal strength compared to one in which it is not used. This can enable faster FFS packaging line speeds.

### Key advantages

- Low seal initiation temperatures for low energy use
- Excellent sealing strength
- Fast packaging line speeds
- Good packaging integrity
- Excellent hermeticity for long shelf life

### Meeting brand owner needs

Zhejiang Southeast Vientiane turned to ExxonMobil Chemical and its film formulation expertise in its efforts to meet the needs of brand owners that package snack foods and biscuits. Brand owners are increasingly looking for improved packaging efficiency and reduced energy consumption for their Form Fill and Seal (FFS) packaging operations. To achieve this, cast PP films need a very low seal initiation temperature (SIT) and excellent hot tack strength. Conventional cast PP films, with a terpolymer PP formulated sealing layer, often cannot meet the needs of the high-speed FFS lines.

ExxonMobil Chemical advised using Vistamaxx performance polymers to modify the existing formulation because they can be used to tailor, balance and enhance film properties, creating new possibilities

for a wide range of packaging applications. Film formulation recommendations were provided based on experience with commercial film manufacturers and film tests conducted.

### Lower sealing temperatures

The results showed that by adding Vistamaxx 3980FL to the terpolymer PP film formulation, seal initiation temperature can be reduced and hot-tack strength can be improved. This can deliver faster packaging line speeds and excellent seal strength for good packaging integrity. As a result, energy usage can be reduced, while increasing packaging line efficiency and output. The higher the proportion of Vistamaxx performance polymers, the greater the reduction of the heat-sealing temperature.

“Meeting the needs of brand owners is a key driver for our business,” says Mr. Gao Xin, senior technical engineer, Zhejiang Southeast Vientiane Technology Co., Ltd. “Using Vistamaxx polymers has helped us provide a cast PP film that allows faster packaging line speeds and higher output.”

## Well-suited for MAP applications

The use of Vistamaxx™ performance polymers can benefit general purpose cast PP films used for food and consumer packaging and more specialized packaging applications. As Vistamaxx polymers can expand the hermetic seal range of cast PP films by up to 300 percent\*, they are well-suited for modified atmospheric packaging (MAP) applications that require leak-free and airtight packaging.

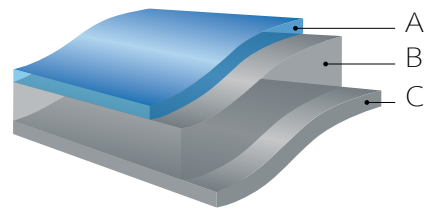
The broader sealing window range provided by Vistamaxx polymers also makes these cast PP films suitable for packaging equipment that is not operating at maximum efficiency.

\*Data from ExxonMobil Chemical.



Mr Gao Xin, senior technical engineer, Zhejiang Southeast Vientiane Technology Co., Ltd.

## Typical 3-layer film structure containing:



A. Vistamaxx 3980FL + terpolymer blend

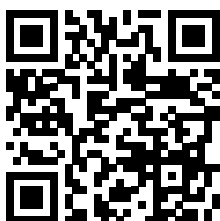
B. homo PP blend	100%
C. random copolymer	100%

Thickness: 25 µm

Layer distribution: 1/3/1 - ABC

Sealing layer formulation	Heat-sealing temperature	Heat-seal strength
100% terpolymer	114°C	4.5-6.8 N
	117°C	7.5-9.0 N
80% terpolymer + 20% Vistamaxx 3980FL	108°C	5.1-6.5 N
	110°C	5.8-7.5 N
	112°C	7.5-8.0 N

Source: Zhejiang Southeast Vientiane Technology Co., Ltd.



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