

# PROVISIONGARD

Insect blocking package technology

Specifications: ProvisionGard Product Codes:

**PGT 81086 (polymer pellets)**

**PGT IGR 30000 (liquid additive)**

## MANUFACTURING APPLICATION INSTRUCTIONS

### Where to apply:

**Blown Film**- Blend PGT 81086 with the other polymer pellets contained in the formulation for the desired monolayer or multilayer film structures.

**Extrudate for Multilayer Woven Poly Bags or Super Sacks**- Blend PGT 81086 with the extrudate layer in heated extruder formulations used for adhering layers on woven bags or barrier layers on woven super sacks.

**Adhesive for Multilayer Film Structures**- Blend PGT IGR 30000 as the final component to pre mixed adhesive formulations and apply as normal to packaging structures.

### How to Apply:

#### Blown Film

The PGT 81086 will be shipped in a ready to use PE pellet form and can be manually mixed with your formulation or added via a gravimetric feeder system. The amount you will add will depend upon the film thickness in the final package. For example an 8 micron film thickness will use a higher percentage of pellets than say a 25 micron film. This is due to the basis weight of each type of film.

Run the film as normal. You should not see any fish eyes form in the blown film. No blocking issues have been notice with these applications. You will notice a slight fruity odor when running this product as some fogging will occur.

#### Extrudate Layer

The PGT 81086 Pellets will be shipped ready to add to your extruder. They can be mixed manually in a batch or added via a gravimetric feeder system. The amount you will add will depend upon the film thickness in the final package. For example an 8 micron film thickness will use a higher percentage of pellets than say a 25 micron film. Most woven poly extrudate layers will use between 1.5-2% addition rates. You will notice an increase in fogging at the die and a slight fruity odor when running. This is normal.

#### Adhesive for Multilayer Film Laminations

The PGT IGR 30000 liquid additive is used as a formulary component in all film adhesives. It will incorporate into water base, solvent and solvent less adhesives. One should add the appropriate amount in the pre-weighted batch or drum of adhesive as a percentage add. ProvisionGard will consult as needed to determine the correct

percentage to add. The lower the adhesive laydown, the more additive is needed to achieve the desired active level. As a general rule, additions to achieve .5% final dried film percent weight are desired.

#### Adhesion Parameters

The polymer pellets and liquid additive will not affect the final adhesion properties as long as the percentage adds determined to be effective are met. If higher amounts are added then adhesion issues can occur. Please keep good records of the amounts added during the production runs.

#### Drum Setup

Preferably start with a clean pump or pump directly from the drum. Mix the drum before use. After the run is complete, clean up as you would for any other adhesive. A simple drain/rinse is adequate.

#### Purging for Clean Break

Purge the extruder after the run is completed. ProvisionGard can test samples of purge to validate your purge procedure.

### Coating Weight / Target Measurements

#### Specification

- Blown film- .5% PGT 81086 for 25-30 micron film thickness.
- Extrudate Layer for Woven Applications- 1.5-2% PGT 81086 addition rate.
- Adhesives- .5-5% based up final dried film thickness.

Please note there is not a reliable way to measure the coating weight in plant environments. Samples can be taken from the run and sent to ProvisionGard Technology for analysis that will determine if the targeted active specification is being achieved.

It is also recommended that samples submitted for active level measurement is obtained when line changes occur such as anilox changes or changing to a different coating line.

Periodic quality checks should be established to monitor application rates over time to include calibrations of feeder systems.

The best way to insure a consistent application is to establish a regular cleaning schedule for the anilox rolls used for application of adhesives.