



## PEXIDAN® HF Processing Quick Reference for Wire & Cable Insulation

### Equipment Recommendations

Extruder:	2-1/2" to 4", 24:1 or higher
Screw Type:	Polyethylene type – low compression – 1.2 to 1.8 compression
Die:	Pressure or tubing - 30° or less, double angle best, short land 1/8" or less
Drawdown:	No drawdown on pressure/semi-pressure set-up (on-size) DDR of approximately 1.5 on tubing set-up
Feeder:	Gravimetric or loss-in-weight type highly recommended
Dryer:	Regenerative-desiccant-type capable of -40°F/°C Dew Point
Cooling:	Heated water in 1 <sup>st</sup> water trough
Wire Preheater:	Induction-type – for small gauge wire

### Processing Parameters (a good starting point)

Extruder Profile:	Feed:	310°F / 154°C
	Transition:	330°F / 166°C
	Metering:	340°F / 171°C
	Crosshead:	350°F / 177°C
	Die:	355°F / 179°C
Wire Preheat:		180 - 200°F / 82 - 93°C
Water in 1st section of Trough:		Hot (110 - 150°F / 43 - 66°C)
Target Melt Temperature:		350 - 360°F / 177 - 182°C
Flame at Die Tip:		Yes (propane or LNG with air only)
Feed Throat cooling:		None
Screw Cooling:		None
Screen Pack:		none
Line Speed:		> 30 RPM desired

### Handling and Storage

#### **PEXIDAN® SX-0651 Graft Compound:**

- Has 6 month shelf life under normal conditions.
- Must be stored dry and unopened until ready to use.
- Should be used completely once opened.
- Must not be dried or heated before using.
- Must not be pre-blended with Catalyst Masterbatch unless pre-blend is to be used within 4 hours.

## **Handling and Storage (continued)**

### **PEXIDAN® Catalyst Masterbatch (CM540U/1):**

- Has no shelf life, but stock should be rotated using FIFO principal.
- Should be dried 4 to 6 hours @ 150°F / 66°C maximum before use.

### **Color/additive Masterbatches:**

- 0.5 to 1% letdown - should be dried 4 to 6 hours @ 150°F / 66°C maximum before use.

## **Processing**

PEXIDAN® IS SENSITIVE TO BOTH HEAT AND MOISTURE, and both must be minimized during the extrusion process to insure good processibility and high extrusion quality, thus:

- Run the extrusion line as fast as attainable to minimize residence time (suggested minimum of 25 rpm).
- Resist the temptation to increase temperatures to correct rough surface – surface will usually get worse.
- Avoid idle time - bleed at low speed or purge when lengthy downtimes are experienced.
- Purge at high RPM for 1-2 minutes or until smooth and lump-free before start-up following extended downtime (more than 5 minutes).
- Apply a flame to the interface of the die and wire to reduce die drool and improve surface finish, ensuring that the flame intensity is such that die temperature 'overshoot' is minimized (the purpose of the flame is NOT to heat the die).
- Provide gradient cooling to maximize physical properties – provide warm water in 1<sup>st</sup> trough
- Preheat conductor to improve finish and physical properties, and to promote adhesion and minimize shrink-back.
- Leave the wire warm on the reel if possible to improve cure rate.

## **Shutdown**

- Discard any unused PEXIDAN® SX-0651 compound or blend left in the extrusion or blending equipment.
- Purge the extruder and tooling with polyethylene to remove excess graft material - do not leave graft in the extruder as it will crosslink, even without catalyst masterbatch.
- Use a semi-rigid PVC at reduced temperatures to scrub the screw and facilitate the tear-down.
- Clean feeders, screw, barrel, breakerplate, crosshead and tooling to eliminate all traces of material.

## **Curing**

PEXIDAN® HF systems require some degree of force curing by either hot water immersion or 'sauna' exposure. Twelve hours at high temperature and humidity is recommended though more may be required to obtain a full cure. See SACO AEI document "Curing PEXIDAN® Moisture-Crosslinkable Systems" for more information.

The technical information contained herein is, to the best of our knowledge, believed to be accurate. However, SACO AEI Polymers makes no guarantee or warranty, and does not assume any liability, with respect to the accuracy or completeness of such information. Suitability of material for a specific final end use is the sole responsibility of the user. The data contained herein are typical properties only and are not to be used as specifications.

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## WIRE INSULATION AND JACKET TOOLING TYPES

