

Technical Note:

MATERIAL CONDITIONING

Recommendations for Kafrit NA PEX Catalyst and Graft Compounds

Kafrit NA produces both catalyst master-batches and silane grafted polyethylene for PEX-b production of potable water pipe and tubing. Years of experience with these materials demonstrate that for optimum processing they should be conditioned by pre-heating in a hopper dryer prior to extrusion.

The compounds are shipped in a dry condition to our customers, however the compounds do benefit from the pre-heating that takes place from running them through a drier designed for plastics granules immediately prior to extrusion.

BENEFITS OF PRE-HEATING TA 1108 HD AND CATALYST BEFORE EXTRUSION:

1. The catalyst and the graft melt faster and more evenly in the extruder resulting in better mixing of the two components. This should result in **optimal long term performance** of the pipe or tube as improved mixing assures that the stabilizers in the catalyst master-batch are uniformly distributed throughout the pipe or tube.
2. As a result of this better mixing, pipe and tube producers will often see decreased plate-out and die build-up along with **improved surface appearance**. Because any trace of moisture that may have been picked up by the material on the way to extrusion is removed, the risk of pre-gelling decreases.
3. Pipe and tube producers will often experience **increased output rates** as a result of pre-heating since the extruder will require less energy to melt and mix the two components together. The effective melt viscosity of the grafted polyethylene decreases when mixed with dry catalyst.
4. Additionally, lower extrusion temperature profiles can be utilized to achieve **extended production runs**.

RECOMMENDED PRE-HEATING CONDITIONS:

- **For catalyst master-batches, dry for 8 hours at 135°F to 150°F.**
- **For TA 1108 HD / TA 1117 HD cross-linkable polyethylene, dry for 1½ hours at 150°F.**

Performance improvements depend on the extruder, screw, dies, and other equipment used to produce pipe or tubing. We remind customers that the correct dosing levels of catalyst to master-batch must also be maintained, preferably with gravimetric feeding, for best results.

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