

Immersed thermocouples

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One of the most important process trouble shooting tools that the extrusion processor can have is a variable depth thermocouple probe that can be installed in a standard Dynisco type port in the melt adaptor system. An exposed junction thermocouple adjusted to the center of the melt stream will monitor temperature variation and stability over time - one of the best indicators of melt quality and homogeneity. Flush or short projection (1/8') thermocouples are almost useless for very accurate process analysis, since they basically only sense adaptor temperature.

The best way to observe variation or stability is with a chart recorder. A two channel chart recorder with both pressure and temperature provides an ideal "window" into the process. If a baseline recording is made when the process is new or known to be under control it can be used to compare with the recording made during troubleshooting a problem.

Variable depth, exposed junction thermocouples are notoriously short-lived and easy to damage, however, so a "new" instrument should always be on hand to install during process troubleshooting and analysis.

- Bill Kramer, American Kuhne Corp.

See also:

- Heat transfer in extruders - an introduction
- Temperature control
- Thermocouple depth
- Troubleshooting polymer processing operations
- Troubleshooting tools

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