

Timely, Comprehensive Mold Release Trials

The complexity of testing a new mold release depends on the type of part being made and the manufacturing process. Despite variances in mold materials, operator training, manufacturing processes and equipment, there are seven primary issues to consider when planning the test of a new mold release. After observing hundreds of mold release test cycles over the last 30 years, the most successful results occurred when these seven items were assessed in advance:



1. Plan the testing process to match the actual production environment as closely as possible. Always start with a clean mold. Matching current process conditions such as the mold temperature, the output parameters for mold release being sprayed, the basic process of applying the mold release, the dry time and the standard cure time before demolding, provides more reliable results. Whenever possible ask for input for needed improvements from the line operators and processing engineering. The more closely test conditions match production conditions, the truer the test results will be.

2. Consider the product requirements you may have, when requesting a sample. These requirements might include a water based product; one with low VOC's; a release without silicones or a specific range for the mold release flashpoint.

3. Review how you will test the release before starting the process, jotting down the range of tests to

be performed. Plan to start with your most difficult mold. Consider the number of parts you will make on the first test run, what the remaining sequence of tests will be and how many different molds will be used in testing. Determine whether running multiple shifts or multiple lines will be a part of the trial process.

4. Note how you will apply the release during the initial test cycle and the time commitment required to clean existing molds and application equipment so that the old and new release materials don't react and cause problems during the initial test runs. Eventually, however you will want to test whether or not the new release can be substituted without a thorough cleaning and conditioning of the molds. Consider the regular production schedule to determine when the test cycle can be worked in to minimize the impact on production. Planning ahead streamlines the trial process.

5. Also consider the molding time which must elapse to test the mold cleaning process and the preventative mold maintenance cycle. Excellent release ease may be your primary goal, but you must also be able to clean your molds efficiently and it is important to maintain the life of the mold between cleaning cycles. It may take many cycles before the mold needs a thorough cleaning and conditioning. Plan ahead to test this aspect of mold release performance as well.

6. Identify all staff who will be part of the evaluation process. You may be the final decision maker. However, there are times when including your vendor representative, the quality engineer, other process engineers or line supervisors in your evaluation process is appropriate. Perhaps headquarters R & D, purchasing, an external testing lab or your customer's staff may be a part of the approval cycle. Knowing all the parties and making certain they know the primary evaluation criteria minimizes the surprises that can occur in getting changes approved.

7. As you are testing take the time to **note your operating parameters**, i.e. temperatures, dry times, output pressure settings and **detailed specific results** so that your tests are well documented. At Huron Technologies we document the test results for trials in which we participate. In evaluating performance,

start by observing how easily the parts release, note the general appearance of the part and check the surface quality suitability for subsequent post processing, i.e. paint adhesion. Documented test results inspire confidence.

By taking the time to go through this checklist of preparations for your new release agent trial, you will actually save time and your results will be compellingly documented. A well planned change improves your manufacturing success. If you would like a copy of **Huron Technologies' Release Agent Test Form** to capture your test results, please call **1-800-275-4902**.

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