

## Successfully Testing Mold Release Agents

Successfully testing a new mold release means mastering the **3 P's, Process, Performance and Part Quality**. Each of these core elements is critical in validating a new mold release's performance for a specific manufacturing environment. When evaluating a new release agent, start by considering your key objectives.

Whether you are trying to improve release ease, obtain better consistency on the part surface or another specific release requirement, begin with the **Process** part of the equation. **Process** is all about the manufacturing parameters that control your operation. When evaluating a mold release, test under all processes ranges and conditions. This includes using both ends of the mold temperature range, the shortest and longest mold release dry times and using different molds--clean molds, dirty molds and the most difficult to release molds. Whatever material you are molding, such as polyurethane, rubber, composites or concrete, test all of the different indexes or mixtures of the materials used to create product. By testing the full range of **Process** conditions (time, temperature and material) you'll avoid future issues when those **Process** parameters vary.

Having identified the range of manufacturing conditions to test, the second step in successful mold release testing focuses on **Performance**. Here, your people and the supplier's product come together. Successful validation includes identifying the amount of effort needed for both applying the release and actual demolding of parts. Operator satisfaction can be a key indicator of **Performance** excellence. Testing with a range of your staff members, both experienced and those with less time on the job, helps verify that a release can be used effectively. As you evaluate **Performance** you will also want to note whether or not training on application techniques is needed.

**Part Quality** is the final **P** needed to successfully evaluate a new mold release. **Part Quality** is defined differently for different types of parts but often includes the uniformity or special composition of the surface, the glossiness or matte look of the part, the touch and feel of the part surface, consistency of color, the adhesion of paint or other coatings and precise replication of the mold surface pattern. The scrap rate for parts produced using the new release is also a measure of **Part Quality** excellence. At some manufacturers, process engineers evaluate **Part Quality** directly. Companies may also involve their Quality Assurance departments to verify that **Part Quality** meets expectations. For other organizations, using an outside testing and certification lab may be necessary to verify that parts meet specific external standards. Whichever method you use, thorough examination of all aspects of **Part Quality** completes the third **P** in the evaluation process.

When you are involved in evaluating mold release, in addition to **Process, Performance and Part Quality**, don't forget to ask for assistance in your testing. At Huron Technologies, our chemists and technical sales representatives have been involved in hundreds of mold release test cycles. Experience counts. Let us put our experience to work for you!

### 14 Reasons for Testing New Mold Release Agents:

- Manufacturing process changes or changes in materials like polyurethane resins can trigger the need for a new release (*For example, the need for a mold release to meet a 17 second dry time requirement on a new line, when previously the release agent had been used with a 45 second dry time*)
- Cost concerns also drive the need for testing new releases.
- Specific surface requirements for parts, whether it's a specific number for a gloss meter reading, a particular type of visible cell structure, the need to deliver excellent paint adhesion under certain humidity conditions or simply a specific feel to the part surface, can lead to the testing of new release agents

- Better tool protection, which means cleaning tools less frequently or more easily is also a motivator for mold release change
- Consistency of product quality, making sure that drum after drum or tote after tote of release comes from a controlled manufacturing process
- Improved supplier dependability and responsiveness
- Requirements for comprehensive technical services from their supplier including training and documentation
- Local sourcing for ready availability of product without overseas shipping or customs processing
- Choosing to use release agents at full strength to avoid any possibility of errors in dilution rates
- A requirement to consolidate from multiple mold release products to a single product to streamline operations and avoid training on different releases
- Meeting VOC requirements as production rises or new facilities are brought on line
- Wanting to move to a water based release from a solvent based release due to environmental concerns, meeting a corporate mandate, or addressing employee health concerns.
- The need to use a mold release concentrate for savings on shipping costs and storage space
- New business or new product introductions are perhaps the very best reasons that mold release agents are tested.

For more information contact Huron Technologies, Inc. by phone or email:

Huron Technologies, Inc.  
415 Industrial Drive, Leslie, MI 49251  
Ph: 517-589-0300,  
Toll Free: 800-275-4902, Fax: 517-589-0390  
email: [info@hurontech.com](mailto:info@hurontech.com)  
Website: [www.hurontech.com](http://www.hurontech.com)