

Costs Associated with Mold Release

When considering the cost of mold release, remember the costs associated with mold release are often greater than the actual mold release product. When you or your organization are working to contain costs while improving quality--here are the ten most common costs associated with mold release usage:



1. Management of the application quality and the application rate
2. Scrap caused by overuse or under use of mold release
3. Rework costs for parts not meeting quality standards
4. Mold cleaning requirements and the associated production downtime
5. Plant housekeeping requirements resulting from overspray and migration of mold release not captured by ventilation
6. Equipment to apply release agents
7. Application efficiency
8. Productivity loss caused by an "ineffective" mold release
9. Workman's comp issues from exerting too much force in removing a molded part
10. Packaging disposal costs

Starting through this list at the beginning, let's examine the ten issues to see how they can contribute to the bottom line.

The first three points are closely related. Excellence in operations begins with committing staff time to set goals for part quality and the application standards for mold release. While the metrics for quality may vary by part or by site, setting standards and communicating what those standards are, can save time and therefore, money. When operators are left to set and measure their own quality performance, the job often doesn't get done effectively. With known standards, attention can be focused on meeting those standards. This logic also applies to the physical application of mold release. Whether considering the pressure and output settings for spray guns, the amount of time applying mold release or the necessary dry time for the release agent to cure, defined operating procedures and metrics help ensure consistency and profitability.

The focus on quality standards and defined operating parameters means fewer scrap parts. Defined operating procedures can also reduce the number of parts requiring rework and improve productivity. "Fixing" a single part with defects often requires more operator time than making multiple parts correctly the first time. Savings for this group of issues include consuming less management and operator time by managing to defined quality standards, less material cost associated with scrap and less operator time required to "fix" defective parts.

Mold cleaning is triggered by the build up of accumulated polymer and mold release spray. For some

operations, cleaning is as simple as steadily wiping down each mold, after demolding, to remove the extraneous material. Other molding operations may be required to send the mold out for rigorous external cleaning. Recently, a manufacturer tripled the number of times their molds could be used between cleaning as a result of changing mold release agents. Not only did this manufacturer save on the costs associated with cleaning; in addition, they also improved productivity significantly.

The housekeeping associated with mold release usage is another area in which money can be saved. For example, overspray of mold release, and the migration of mold release not captured by ventilation, can require frequent cleaning to avoid slippery floors. Overspray and release migration can also trigger challenges in painting or other post processing of parts. Migrating release spray can result in scrap parts when the substance interferes with paint adhesion. Modifications to the ventilation equipment and correctly placing it within the production line can help minimize cleaning costs. Excessive use of mold release--when application standards haven't been defined and communicated, results in a negative impact on profitability.

Production costs associated with spray guns, brushes and even robotic systems to correctly apply the release is another cost reduction opportunity. As production processes change, evaluation of other application technologies can result in cost savings. For example, upgrading to spray guns when the old process was to wipe on the release, may be economically sound if operator time is less or if spray gun usage results in improved application consistency and less scrap. Moving from spray guns to robotic systems for high volume production can have the same type of benefits. Whether wiping, manually spraying or using an automatic, robotic system, the efficiency of mold release application can cut costs and scrap while improving quality.

An ineffective mold release product adversely affects productivity. Enhancing mold release robustness and effectiveness results in fewer scrap parts. Effective mold releases are formulated to broaden manufacturing process parameters. For example, release agents can be custom formulated to meet a specific dry time requirement. A robust release agent will produce molded parts under a variety of operating conditions. To cut productivity losses, manufacturers need a committed release agent provider, capable of custom formulation.

Matching the right mold release agent to the production process can also mean lowering workman's comp costs. The workman's compensation issues often result from repetitive demolding stress when the release is too tight. When extra force must be applied injury can occur. Workman's compensation issues are costly to resolve and can lead to additional problems and complaints.

Another expense tied to mold release is container disposal costs. Often times container disposal costs depend on the container size and the solvents used. Cost savings can be achieved by using returnable containers, by ordering release agents in concentrate form or by staging multiple containers for disposal at the same time. The savings must be balanced against shipping costs for returnables, quality issues associated with consistently diluting concentrate and any issues associated with storing empty containers on site until the requisite number of used containers have been accumulated.

While mold release pricing is often a focus when controlling costs, the range of other associated expenses connected with the use of mold release can offer significant opportunities for savings. Knowledge of manufacturing operations, commitment to effective training and a rigorous quality effort are critical in taking advantage of the savings opportunities. Please feel free to contact us at 1-800-275-4902 for assistance in defining a specific release agent for your requirements.