Mold Release Agents

Internal Mold Release Agents for Injection Molding and Blow Molding

Summary

A polymer sticking to a metal surface during processing can cause defects such as part deformation and/or surface blemishes in a molded part. If processing conditions or the mold surface cannot be changed to satisfactorily improve mold release then a mold release agent may be used.

Mold release agents may be classified as either external or internal. **External** agents are usually sprayed onto mold surfaces and generally silicone based. Care must be taken when using external agents to avoid inconsistent application, which can cause issues with part quality, e.g. difficulties in ink or paint adhesion. In addition, external agents must be applied continually, often every 5 to 10 shots.

Internal mold release agents are added at the extruder. Internal mold release agents are typically of the same chemical classes as anti-static and slip additives. This is not surprising when considering the need for some degree of chemical compatibility in the bulk phase, as well as the ability to migrate quickly to the polymer/mold interface and to possess sufficient thermal stability, etc. Ampacet offers a variety of internal mold release agents, via masterbatch, for both injection molding and blow molding.

Product Overview

Primary applications for mold release agents:

Injection Molding – The active mold release additive chosen is dictated by the resin system employed. For polyolefins primary fatty acid amines are typically preferred. Erucamide (greater thermal stability) and oleamide (lesser thermal stability) are most often chosen for polyethylene and polypropylenes. Mold release agents for other resins include: Styrenics - bisamides and wax esters; polyamides – secondary amides, bisamides, wax esters; polyesters – bisamides, wax esters, oxidized polyethylene waxes; polycarbonate – wax esters, oxidized polyethylene waxes.

Blow Molding – In aiding the removal of a finished part from its mold the recommendations for injection molding apply. Zinc stearate is usually found to be most effective to eliminate sticking to the core rod in injection blow molding.

Products/Codes for Polyolefins (*)

Production Code	Resin	Application	LDR Suggested	FDA (**)
10090	LDPE	Injection Molding Extrusion Blow Molding	2% to 4%	Yes
4000058-N	PP	Injection Molding Extrusion Blow Molding	1% to 2%	Yes
10069	LDPE	Injection Molding	1% to 2%	Yes
100664	LDPE	Core rod release – Injection Blow Molding	1% to 2%	Yes
100665	PP	Core rod release – Injection Blow Molding	1% to 2%	Yes

(*) Ask Ampacet for recommendations for other polymers.
(**)Ask Ampacet for details regarding regulatory compliance.

For more information on **Mold Release Agents**, their use and complete Regulatory Status, contact your Ampacet Account Executive or visit **www.ampacet.com.**

Ampacet Website: www.ampacet.com
Global Regional Headquarters:
Ampacet North America: 660 White Plains Road, Tarrytown, NY 10591-5130
Ampacet South America, S.A.: Dardo Rocha 2454 – 2o Piso, (B1640FTH) San Isidro, Buenos, Aires, Argentina
Ampacet Europe, S.A.: Zoning Industriel Riedgen, L-3451 Dudelange, Luxembourg
Ampacet Asia: Eastern Seaboard Industrial Estate (Rayong), 64/19 Moo 4, Highway 331, Pluakdaeng, Rayong 21140