IncroMold™

Mold Release and Anti-Scratch Additives for Molding Processes

Cargill®

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Improve the surface quality of molded articles, whilst also reducing cycle times, reducing machine wear and tear, thereby increasing profits and cost effectiveness by using IncroMold mold release additives. Suitable for polyolefins and polyamide, the IncroMold™ range can be used in a variety of applications, including automotive interior and household articles.

Our IncroMold range of internal mold release additives have been designed to improve your injection molding or compression molding process. IncroMold additives work at the surface of the molded part to reduce friction, allowing more efficient processing and improved part quality time after time.

IncroMold additives deliver enhanced surface finish of molded articles, leading to less rejects and cost saving.

Key Benefits

- **Consistent mold release**
- **Reduced cycle times**
- **Continuous running**
- **Scratch and scuff resistance**
- **Improved flow and dispersion of filled polymers**
- **Improved surface finish**
- **Fewer rejects and less waste**
- **Reduced machine wear and cleaning**
- **Improved pigment dispersion**

1. *Comparison of quality of injection moulded part with and without IncroMold*

Product Selection

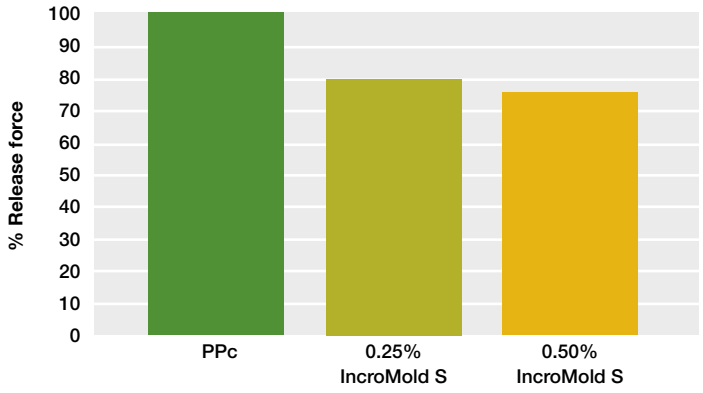
PRODUCT NAME	PHYSICAL FORM AT 25°C	SUGGESTED POLYMER	TEMPERATURE RANGE	SUGGESTED APPLICATION
IncroMold™ F	Bead	Polyolefins, especially PE	Up to 230 °C	Recommended when fast acting mold release is required
IncroMold™ S	Bead	Polyolefins, especially PP	Up to 280 °C	Recommended for excellent mold release
IncroMold™ K	Bead	PP and polar polymers such as Ionomers	Up to and above 280 °C	Recommended when reduced scratch visibility is required
IncroMold™ T	Bead	Polyamides	Up to and above 280 °C	Recommended for molding at high temperatures

The system processing temperature and polarity of the polymer will determine which grade of IncroMold™ is the most suitable. IncroMold products are available as 100 % active beads for direct addition into the polymer melt or to be dosed via a masterbatch. Addition levels of 0.5 % are recommended initially and then levels can be optimized between 0.2 and 1.0 % depending on the desired effect.

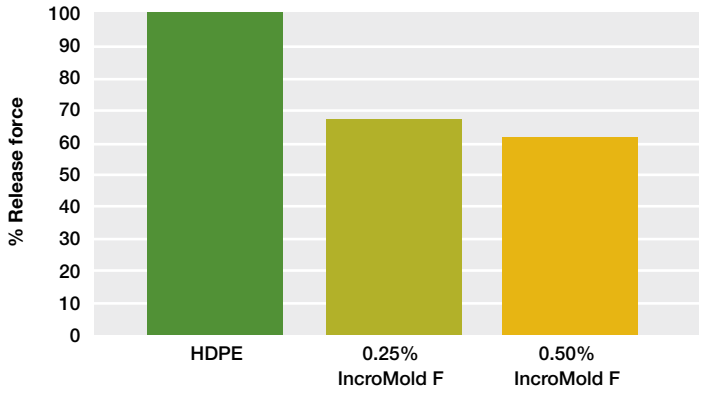
Mold Release Force

Products in the IncroMold range are easy to use additives that can be added directly to the polymer melt prior to molding. As the polymer cools, IncroMold rapidly migrates to the surface of the polymer, reducing the adhesion between the part and the mold, improving the release from the molding tool. IncroMold can reduce mold release force by up to 38 %, leading to improved process efficiency and less wear on machine parts.

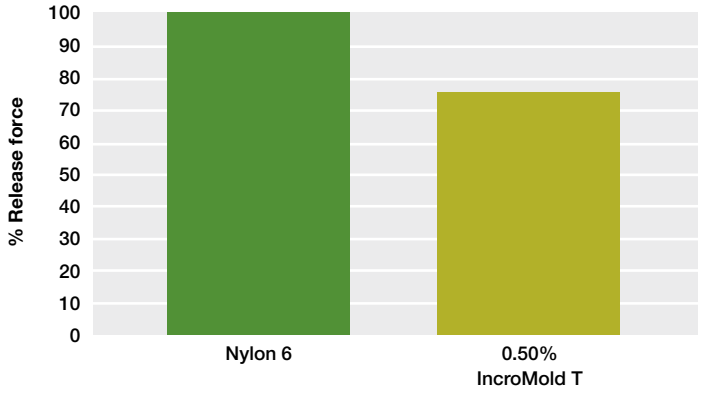
2. *Comparison of mold release force in PPc with and without IncroMold S*



3. *Comparison of mold release force in HDPE with and without IncroMold F*



4. *Comparison of mold release force in Nylon 6 with and without IncroMold T*



Reduced Cycle Times

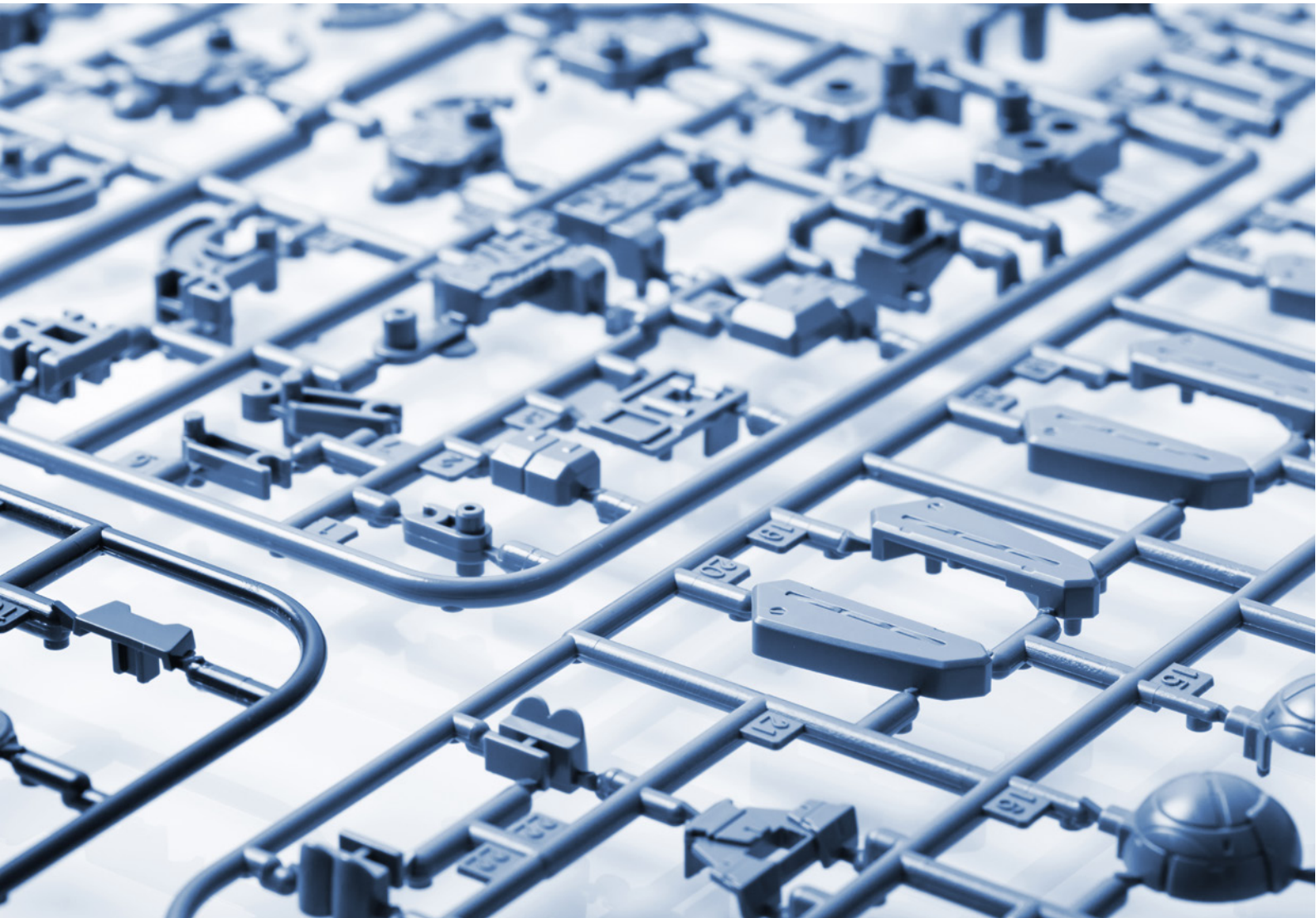
IncroMold™ products can improve polymer flow, leading to easier mold filling and allowing injection at lower temperatures and speeds. This in turn allows reduced cooling time in the mold and a reduction in cycle time. IncroMold products have shown improvements of over 20 % in the number of shots per hour, increasing output and maximizing profits.

Reduced Machine Wear and Tear

IncroMold products can reduce the wear and tear on machinery by improving polymer flow in the process. This will help to increase the lifetime of the machinery and save money.

Post-Molding Benefits

IncroMold can also provide many post-molding benefits including lower torque release, improved de-nesting, reduction in assembly force, improved pigment dispersion and a reduction in the number of rejects.

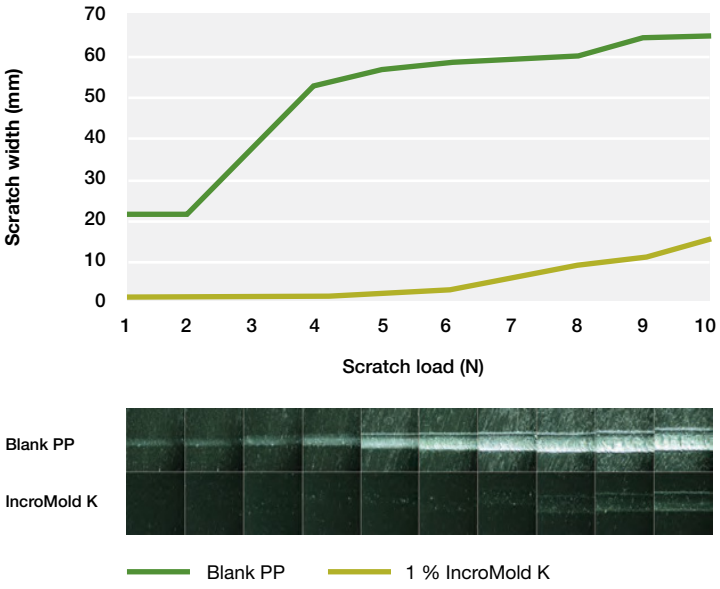


Scratch Resistance

Polymers naturally exhibit high friction which can lead to scratching and scuffing in the molded part. Scratch and scuff resistance is important to maintain a high quality look, especially in automotive parts such as dashboards and door panels.

IncroMold™ K is ideally suited to improving scratch width and appearance by reducing the friction at the polymer surface, particularly in PP copolymers.

6. *Comparison of scratch whiteness in plaques with and without IncroMold K at various loadings*



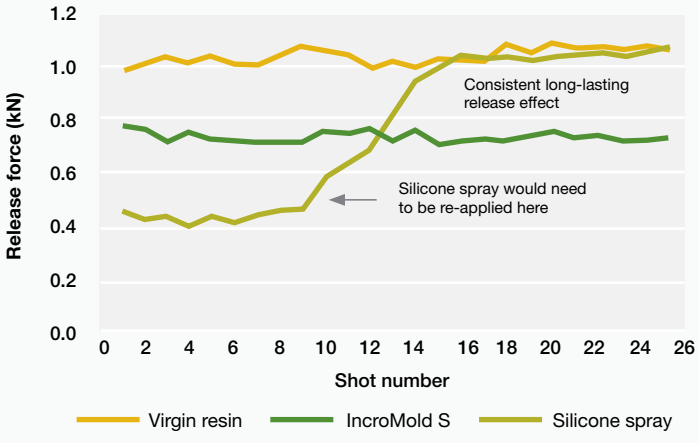
Case Study

IncroMold S for cost reduction in PP

A manufacturer of polypropylene parts for electric showers wanted to increase production output and save costs. They were producing 71 shots per hour but had to use silicone spray as a mold release agent. The silicone spray was applied inconsistently and was difficult to remove from the surface of finished parts, resulting in a sticky residue on the part.

IncroMold S was recommended for use at 0.5 % to eliminate the use of silicone and allow continuous production. The customer found that they were able to produce 82 shots per hour, (an increase of 15 %) as well as reduce cycle time from 55 to 44 seconds, (an improvement of 20 %). By using IncroMold S, the customer observed that the improvement in mold release also resulted in more consistent quality parts, less rejects and a reduction in pin marks.

5. *Mold release force of blank polymer resin compared with IncroMold additive and silicone spray*



Further Information

Cargill Bioindustrial sales and distribution are coordinated through an extensive worldwide network of technical and commercial experts. For further information or guidance please contact us:

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