

PRESS RELEASE

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NPE 2018 Booth #W551

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Trexel at NPE2018 presents advances in microcellular foaming technology

Worldwide leader in foaming technology introduces MuCell® P-Series for thin-wall molding, 2Limit design services and demonstrates synergistic solutions with industry partners.

(Trexel, Inc., Wilmington, MA March 12, 2018)... Trexel is pleased to announce it will be showcasing advances in foaming technology at NPE 2018 with multiple, exciting live MuCell® injection molding demonstrations. TREXEL will also announce new products and design services that provide decisive advantages for its customers in the automotive, technical, consumer and packaging industries.

NPE is the perfect stage to showcase the proven cost savings, part quality and sustainability advantages Trexel has brought to the market for decades. The company has seen increasing expansion of their technology into new markets that can benefit from microcellular foaming advantages.

To further that, Trexel will make two major announcements at NPE to advance the use of MuCell at new and existing customers. The premier Introduction of MuCell P-Series will provide thin-wall molders the ability to lightweight products to a level never before possible. Trexel is also announcing the formation of 2LIMIT, a first of a kind, design service.

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Trexel announces MuCell P-Series product launch to provide lighter, lower cost & more sustainable thin-wall packaging.

Trexel, well established in Automotive and Technical markets, has adapted the MuCell gas dosing process to meet the demanding requirements of fast cycling thin-wall packaging. The adaptations to Trexel's proven MuCell technology provide the P-Series the capability to precisely dose N₂ as a super critical fluid (SCF) at ultra-fast cycle times not previously possible with Trexel's benchmark T-Series.

For the first time ever, the packaging market will be able to exceed the current limits imposed by conventional injection molding. MuCell P-Series enables greater light weighting, increased L/T and the ability to fill from thin-to-thick (stiffer rim for sealing).

It has been demonstrated that the use of MuCell P-Series on existing packaging products provides 30% reduced clamp tonnage, 12% lower injection pressure, 6% weight reduction and 7% cycle reduction. These improvements not only reduce cost of existing products but also provide exciting opportunities to enable new packaging designs with greater L/T and geometries not possible without MuCell. Use of smaller presses and a significant reduction of wear/tear on the mold are also enabled due to the 30% reduction in clamp force.

MuCell P-Series will be in operation at Trexel booth W551 molding a ground breaking 6oz (200ml) yogurt cup with in-mold label. Partners in this high performance molding cell include StackTeck, Milacron Ferromatik, Ilsemann Automation, Verstraete and Total Petrochemicals.



Trexel announces first ever design service dedicated to foamed components.

Injection molding professionals are well aware of the part design freedom that MuCell microcellular technology unlocks including the ability to reduce wall thickness, increase flow length and fill from thin-to-thick.

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The missing link has been finding design engineers skilled in the art of foamed part design who will break the long standing rules of conventional part design to unleash the design improvements enabled by MuCell. 2Limit was formed to fill this gap. Now, for the first time, molding professionals can rely on 2Limit's depth of foamed part design expertise to maximize the benefits for each application. 2Limit offers an array of engineering services to optimize foamed product design. Services options include feasibility review, part design, MuCell filling analysis and even turnkey mold design & build.

2Limit is a joint venture between Trexel and GK Concept. Trexel and GK have accumulated decades of foaming experience with unsurpassed knowledge in implementing part design improvements enabled by MuCell.

2Limit's "design for foaming" services are an industry first and only available through Trexel, GK Concept and 2Limit.

Visit Trexel booth W551 to learn how 2Limit's engineering services can deliver cost savings and improve part quality to take your project "to the limit".



Trexel partners with industry leaders to demonstrate MuCell technology in operation at four booths.

MuCell in action at ENGEL Booth W3303:

For the first time in North America, ENGEL will present a fully automated, integrated production cell for the DecoJect process using MuCell microcellular foaming technology. The DecoJect process combines injection molding, IMG (in-mold graining) and MuCell, opening new possibilities for the production of premium interior automotive components in a one step process. As opposed to conventional in-mold decorating processes, DecoJect does not simply transfer the paint from the foil to the component, but rather the foil is punched out and remains on the component. In this way the surface structure and features are boldly emphasized.

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MuCell foaming technology facilitates the DecoJect process by providing uniform low pressure packing to reduce stress on the thin foil and by replicating mold features without sink or read-through. MuCell provides the additional advantage of enabling a thinner part design thereby reducing part weight.

Other partner companies involved in the project are Georg Kaufmann Formenbau (Switzerland), Galvanoform Gesellschaft für Galvanoplastik (Germany), HRSflow (Italy), ICO SYSTEM international coating (Germany) and Borealis (Austria).

The DecoJect molding cell will produce interior upper door trim with various surface structures from a refined leather grain, including the seam, to a modern carbon look in ENGEL booth W3303.



MuCell in action at Milacron Booth W2703:

Milacron will be combining three advanced technologies to produce an automotive SUV door panel with map pocket. The synergy between Trexel MuCell, Milacron “Core-Back” and Roc-Tool “Heat & Cool” technology results in a lighter, stronger door panel with superior Class-A surface appearance.

Milacron’s Maxima Performance Series 600wp will be outfitted with a “core-back” technology package that precisely controls the opening of the clamp to a pre-defined position immediately after the part is filled. During the “core-back” process, MuCell cell growth allows the part to expand as the clamp gradually opens. Dramatic strength to weight improvements are achieved as the 1.8mm wall (mold closed) is expanded to 2.7mm wall during “core-back”. An impressive 67% total density reduction is attained. MuCell also reduces clamp tonnage by 30% enabling the large SUV door panel to be run in a smaller 600 Ton machine.

RocTool Heat & Cool technology provides superior class-A surface otherwise unobtainable with a glass filled polypropylene.

The synergistic use of MuCell, Core-Back and Roc-Tool is expected grow rapidly as automotive OEMs strive meet even increasing light-weighting and sustainability objectives.

Other partner companies involved in the project are Asahei Kasei, Inteva, Integrity Tool and MoldMasters.



MuCell in action at Yizumi HPM Booth W3343:

Yizumi HPM will demonstrate remarkable cycle time reduction and clamp tonnage reduction through the use of MuCell Technology.

A large protective case with premium surface appearance will be produced on a Yizumi injection molding cell. Yizumi FoamPro technology combines MuCell, variotherm and ceramic coating technologies to produce a low cost, light protective case with enhanced visual appeal. Five unique surface textures, leather-grain, high-gloss, dull polish, particle and fabric texture, are created on each molded case.

MuCell provides significant part cost, tool cost and sustainability benefits.

- Cycle Time Reduction = 29%. The cycle time is reduced from 69 to 49 seconds with MuCell. The traditional pack/hold phase is eliminated as cell growth uniformly packs the cavity (not screw



force) and a dimensional stable part with less warp is produced with less cooling time.

- Clamp Force Reduction = 30%. Yizumi HPM will demonstrate use of lower cost Aluminum mold construction facilitated by lower clamp force.
- Weight Reduction = 6% MuCell microcellular foaming lowers the density by 6%.

Visitors at NPE can view the protective case in operation at Yizumi booth W3343.

MuCell in action at Trexel Booth W551:

Trexel announces first ever use of MuCell P-Series with StackTeck TRIM technology.

A 4 cavity, 6oz (200ml) IML single serve yogurt cup will be running in Trexel booth W551, in a high performance Milacron Ferromatik F220.

“With the use of MuCell combined with StackTeck TRIM technology we are able to mold a cup that has ultra-thin wall panels of .008” (0.2mm), with an in-mold label at significantly lower clamp force and injection pressure as a result of microcellular foaming,” according to Brian Bechard, President, Trexel.

It has been demonstrated that the combination of TRIM and MuCell technology, conventional lightweight parts with an L/T (ratio of flow length to average thickness) up to 300 can be made thinner with additional light weighting of 35% to 40% at lower clamp force.

Technology partners contributing to the yogurt cup molding cell are StackTeck, Ilsemann Automation, Milacron Ferromatik, Verstraete, and Total Petrochemicals.

(hi res photo to come)



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TecoCell® Chemical Foaming Agents showcased at Trexel booth W551

Trexel, well-known for MuCell physical foaming technology, now applies its unsurpassed expertise to chemical foaming.

Decades of experience provide Trexel the knowledge base to apply the optimal foaming process to maximize results on each unique application. Trexel is the first to offer both chemical and physical foaming solutions and the only resource with an appreciation of the applications that will most benefit from chemical foaming and the ones best suited for physical foaming.

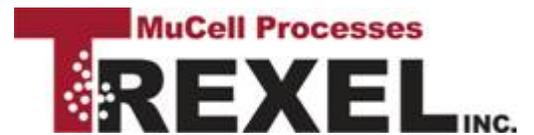
TecoCell chemical foaming agents will be showcased at NPE in Trexel booth W551. TecoCell's patented chemistry dramatically outperforms traditional foaming agents. Through the exclusive use of nano-sized (≤ 0.08 micron) CaCO_3 particles, TecoCell produces the smallest cell size achievable (50 – 200 microns). Ultra-small cell size and uniform distribution result in superior weight reduction, mechanical properties and surface appearance compared to traditional agents. An added benefit is that TecoCell's chemistry results in a cleaner process. All ingredients in the formulation and their reaction products are environmentally friendly. CO_2 , water and citric salts, all inert and benign, are the only by-products.

Brand owners and molders striving to meet sustainability goals will also benefit from reduced carbon footprint of up to 25% through reduced energy consumption, less resin use and faster cycle time.

About Trexel, Inc.

Trexel, Inc., headquartered in Wilmington, MA, has led the development of the MuCell® microcellular foaming injection molding technology and has pioneered many plastic processing solutions. The MuCell® technology provides unique design flexibility and cost savings opportunities by allowing plastic part design with material wall thickness optimized for functionality and not for the injection molding process. The combination of density reduction and design for functionality often results in material and weight savings of more than 20%. The numerous cost and processing advantages have led to rapid global deployment of the MuCell® process in automotive, consumer electronics, medical, packaging and consumer goods applications. Process deployment as well as equipment is supported by teams of highly qualified engineers through

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Trexel subsidiaries in North America, Europe, and Asia.

Trexel recently extended its product offering with the TecoCell® system. TecoCell is a unique chemical foaming technology that provides uniform microcellular structure to injection-molded parts.

For more information, please visit www.trexel.com.

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