

Introducing: Somos® DMX-SL™ 100

One step closer to direct manufacturing



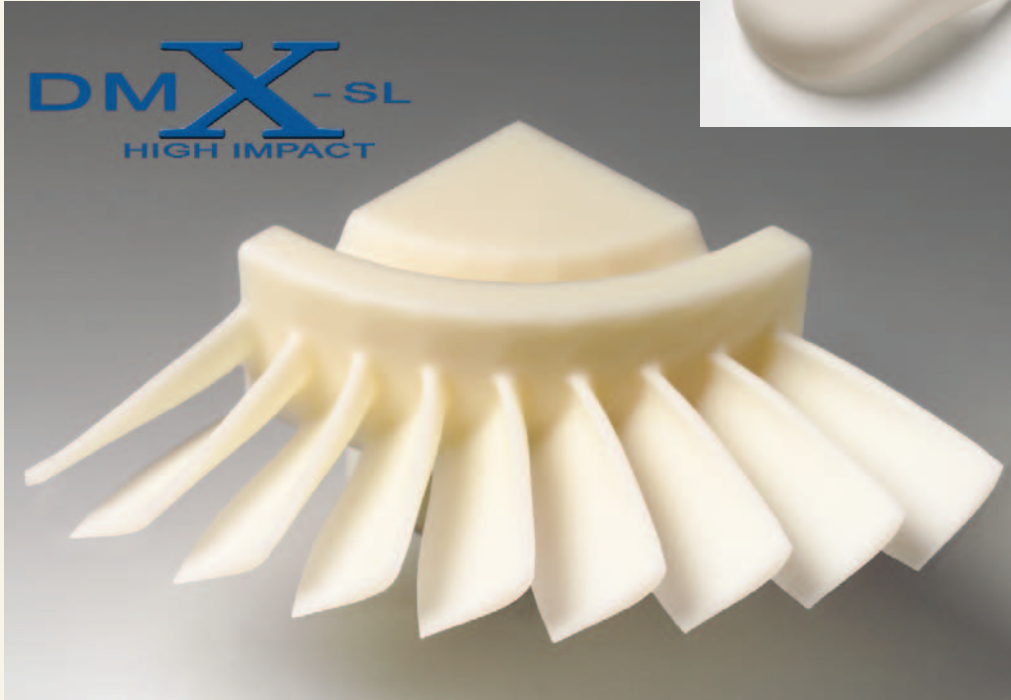
The rapid prototyping industry has grown from the technology of solid imaging. The utility of being able to create a three dimensional object from a CAD rendering has been limited only by the physical performance of the imaged resins. While mechanical performance of SL resins has improved dramatically in recent years, the engineering plastic properties required for full direct manufacturing—that is, cost effective direct building of custom plastic parts without the need for tooling—has remained elusive.

Though stereolithography has successfully been used to date for some specific direct manufacturing applications (i.e. hearing aid shells and interior products such as custom lamp shades), this use has been largely limited by material properties. “Current SL resins on the market (and there are over 40 between Somos and other suppliers) are more brittle than traditional engineered plastics such as

polypropylene, ABS, polycarbonate and nylon,” says Somos Technical Service Manager Brian Bauman. “In addition, SL parts often become even more brittle over time, which is unacceptable for direct manufacturing applications.”

The limitations of SL resins lies in their photopolymer technology: they require light to initiate the chemical reaction that turns liquid to solid. Once light is removed, the reaction should stop—but in reality, “dark” reactions can proceed slowly, causing property changes. The useful lifetime of parts made from these types of resins is limited. Therefore, while SL resins perform well in rapid prototyping applications, their usefulness in direct manufacturing has been restricted to products that do not require much durability.

Determined to bring a solution to market, DSM Somos has combined the efforts of the DSM Somos R&D team with the extensive resources of DSM Research in the Netherlands to develop the industry's first SL resin targeted for high durability applications and direct manufacturing. After three years and significant development and testing efforts, Somos DMX-SL™ 100 is being introduced as a significant new chemistry platform for direct manufacturing development.



Somos DMX-SL 100 parts have superior surface finish over other RP technologies such as sintering.

Portion of fan blade, Somos DMX-SL 100 parts are accurate and durable.

Based on a unique technology which produces resins with extremely high impact strength and resistance to breakage, DMX-SL is very different from traditional SL resins.

“Nothing frustrates RP users more than spending hours building and precisely finishing a part only to lose everything by accidentally dropping it on the floor and watching it break into pieces,” says Somos Marketing Manager Eva Montgomery. “Somos DMX-SL addresses this problem. In in-house testing, DMX-SL parts were repeatedly subjected to high impact stresses without breakage. These parts are truly durable!”

She continues, “We believe Somos DMX-SL 100 is a revolutionary product for the RP industry. Other RP technologies that utilize molten or sintered thermoplastics have traditionally been chosen when part durability was critical, but with a sacrifice in part aesthetics or dimensional

consistency. With DMX-SL, RP users can now have custom-built parts that are durable, accurate and have excellent detail—a development that brings SL one step closer to direct manufacturing.”

Look for more information about Somos DMX-SL in the next issue of “The Part We Play” customer newsletter.

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