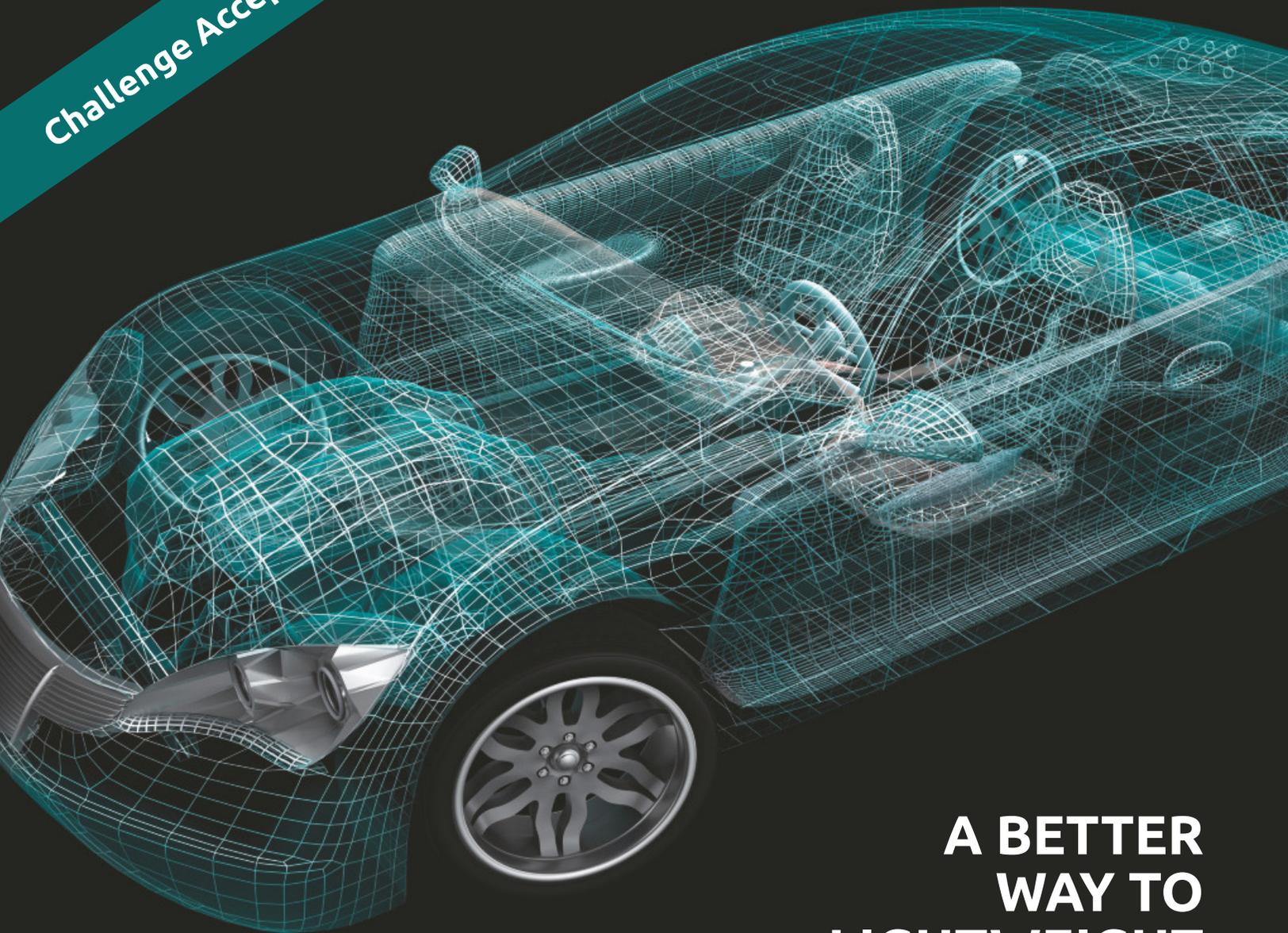


Challenge Accepted.



A BETTER WAY TO LIGHTWEIGHT

 **AVIENT™** > CASE STUDY: EXCELITE™ IM CHEMICAL FOAMING ADDITIVES



LIQUID CFAs PROVIDE A TOP TIER-1 MOLDER WITH A CONSISTENT SOLUTION

THE CHALLENGE

With more major OEMs introducing lightweighting initiatives, the use of chemical foaming additives (CFAs) is becoming more common among automotive injection molders. This is resulting in new challenges, such as balancing the use and performance of CFAs against production costs.

In this case, a top tier-1 automotive molder was routinely running cycle times longer than originally quoted, as inconsistencies in CFA performance were creating processing issues and generating more scrap. This meant the molder was running longer cycle times to manage shot-to-shot irregularities and control dimensional stability. They were consequently faced with higher than expected conversion costs.

THE SOLUTION

The Avient technical team leveraged expertise in liquid formulations with the science of dispersion to develop Excelite™ IM, a CFA solution that targeted automotive injection molding applications and would help address the issues of this tier-1 molder.

Using conventional CFA ingredients, a special conditioning process was used to prepare the raw material for optimal foaming performance upon polymer interaction. By using proprietary stabilizing agents, greater control of the dispersion of the active particles was achieved. These particles were prevented from flocculating and re-agglomerating in the liquid matrix. This tier-1 molder could now achieve a uniform, statistical distribution of active CFA content with an added degree of control that is unrivaled in the industry today.

THE IMPACT

Avient was able to offer on-site support to the molder for trials using Excelite IM. Quickly, Excelite IM demonstrated efficacy by creating a finer and smoother cell structure (see Fig. A and Fig. B). This offered

significant improvement in dispersion and dimensional stability, and an additional 2% density reduction, lowering final part weight. Of greatest impact was a reduction in cycle time by an impressive 20%, while CFA use-rate dropped by 80%.

Dispersion and performance of the additive was critical to success. The molder achieved a finer, more uniform cell structure, with a higher cell density, and was able to maintain a Class-A surface finish.

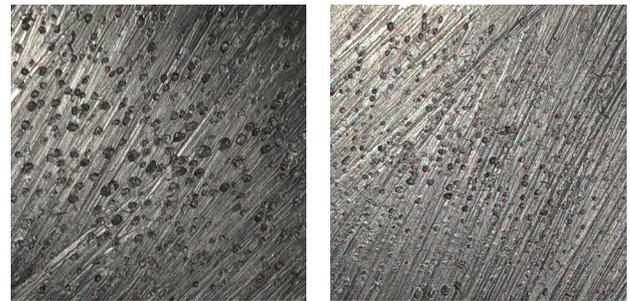


Fig. A
Conventional CFA

Fig. B
Excelite

Excelite IM Chemical Foaming Additives:

- The only patented liquid CFA in North America and Europe
- Supported with customized dosing equipment and technical assistance
- Typically contains 70% active CFA content, dispersed in proprietary liquid vehicles



Interested in learning about how Avient can help your business? Contact us at +1.844.4AVIENT (1.844.428.4368).