



ColorMatrix™ Excelite™ IM Chemical Foaming Additives for Injection Molding

ColorMatrix™ Excelite™ IM formulations for injection molding feature fully endothermic chemical foaming agents which, when under thermal decomposition, cause gas to evolve. This gas then forms a cellular structure in the polymer matrix.

Processors using Excelite IM additives between 0.12% and 0.5% can achieve density reductions, smoother surface finishes and reduced sink marks while generating a tighter cell structure.

EASE OF PROCESSING

PolyOne's proprietary ColorMatrix dosing equipment makes Excelite IM additives suitable for use in all types of injection molding processes. Through accurate and consistent metering, Excelite IM additives can provide greater uniformity of foaming and shot-to-shot consistency, offering a wider product processing window.

ColorMatrix dosing equipment is highly accurate and delivers Excelite IM additives directly into the machine feed throat,

enabling a more continuous distribution while improving uniformity of cell structure and more consistent density. This process allows greater control over production tolerances, which can lead to reduced scrap rates, improved quality and optimized processing capabilities. In fact, case studies have shown scrap rates can be reduced from 30% to less than 1%.

TARGET APPLICATIONS

Excelite IM chemical foaming additives (CFAs) are engineered for a wide range of injection molded polymers: olefins, PVC, polystyrene, PC/ABS and high heat applications. These CFAs are suitable for use in automotive, construction, commercial, personal care packaging or structural foamed applications. Specific grades are available to meet food contact requirements as well.

KEY CHARACTERISTICS

Excelite IM formulations provide injection molders with:

- Material density and weight reduction
- High concentration of active CFA
- Improved distribution of CFA into polymer matrix
- High cell density with tight cell structure
- Control over consistency and accuracy
- Reduced sink marks
- Ability to improve flow of material
- Cycle time reduction
- Improved dimensional stability
- Improved thermal insulation

EXCELITE IM - PRODUCT FORMULATIONS

PRODUCT NAME	DESCRIPTION	POLYMERS	FOOD CONTACT	CELL STRUCTURE
Excelite IM 3	High density reduction with larger cell size. Utilized for weight reduction, sink mark removal or dimensional stability. Cell nucleator for structural foam applications.	PP, PE, PS, PVC	No	Good
Foam PP	Better, larger cells with lower cell density in standard IM processes; suitable for cell nucleation in structural foam processing	PP, PE, PS, PVC	Yes	Better
FA-110	Best cell structure with higher cell density; provides better structural integrity and lower density in standard IM processes	PP, PE, PS, PVC	Yes	Best