

BUDIT® F Series Eco-friendly foaming

The need for energy efficiency is driving the trend towards lightweight plastics. Foaming of plastics saves weight and offers additional benefits:

- Lightweight due to the cellular structure
- Shrink compensation for better surfaces without sink marks
- Reduced processing time saving energy
- Reduction of plastic resins

The BUDIT® F Series provides endothermic foaming ingredients for chemical foaming processes for extrusion and injection molding. In physical foaming processes, at low concentrations, the cell nucleation can be precisely controlled. The product range gives the following unique benefits to plastic foaming:

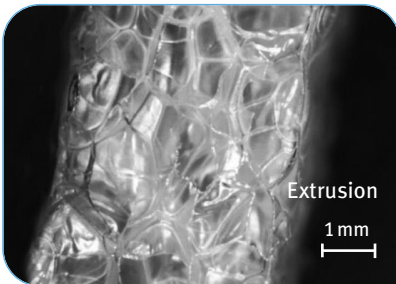
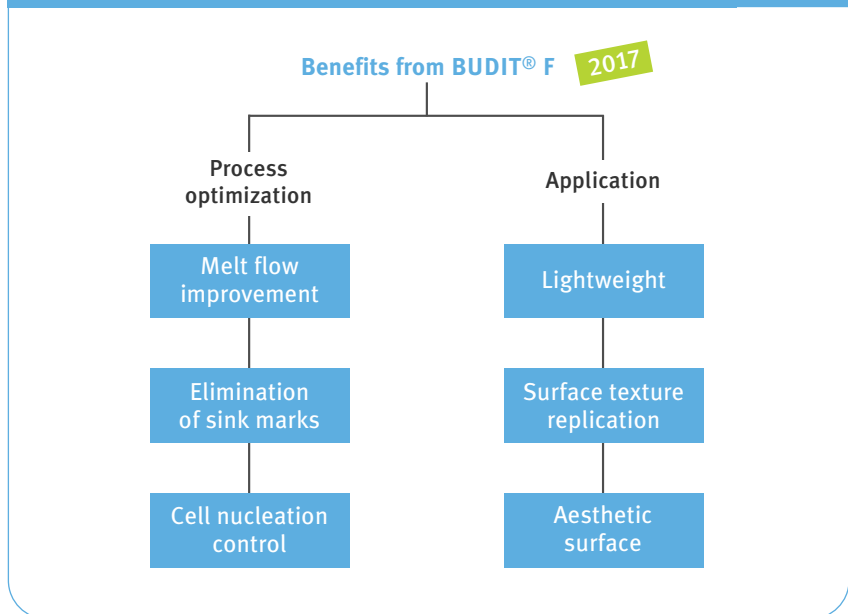
- Eco-friendly due to non-hazardous phosphate chemistry and safe for medical and food contact applications
- Melt flow improvement from defined intrinsic pressure for significantly shorter cycle times in injection molding processes
- Controlled cell formation due to unique kinetic reaction profiles leads to less sink marks and more aesthetic surfaces
- Solutions for the entire polymer range such as silicones, polyolefins, and engineering plastics.

Safe and controlled cell formation

The release of gas (carbon dioxide) within the BUDIT® F Series is initiated by temperature. The endothermic reaction makes the process safe and due to the unique kinetic reaction profile, the cell formation can be precisely controlled.

Multiple benefits

Different product solutions



Process optimization

Especially for complex tool geometries, the melt flow can be improved as the intrinsic pressure moves the melt into the entire tool.

The foaming technology with the BUDIT® F Series allows faster cycles times. Additionally, it eliminates sink marks that normally create irregular surfaces typically resulting in yield losses.

The BUDIT® F Series can be used in very low concentrations.



Performance in the application

Foams with highly uniform and micronized cells can be generated with superior physical properties e.g. for lightweight structures.

Surface micro structures, like satin or even geometric textures, need high pressure in order to get a full replication of the tool. Typically this can only be achieved with long cycle times, thin molds and high pressure. The intrinsic pressure of the BUDIT® F Series propagates the melt deep into the surface texture with superior replication.

A brushed glossy robust surface can be achieved and this is an alternative to expensive tooling and maintenance.

Safe for food contact

Eco-friendly ingredients

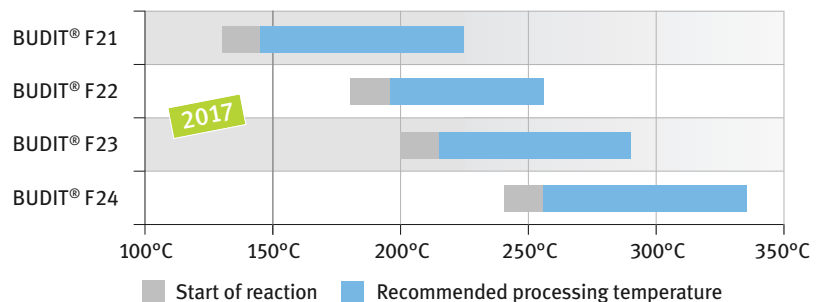
The BUDIT® F Series is based on inorganic specialty phosphates without hazardous azodicarbonamides (listed as SVHC in REACH). They are compliant with the highest environmental safety standards and are suitable for food contact applications.

Product recommendations

	EVA	PVC	PE-LD	PE-HD	PS	PP	ABS	PA	PBT	PET	PC
BUDIT® F21	●	●	●	○	○	○	○				
BUDIT® F22				○	●	●	●				
BUDIT® F23			○	●	●	●	●				
BUDIT® F24								●	●	●	●

BUDIT® for the entire range of thermoplastics

Reaction profiles



Made for direct use

BUDIT® F Series is provided as an easy to handle concentrate. The applications range from low temperature plastics such as EVA to higher temperature polyolefins and engineering plastics. Typical loadings of the BUDIT® F Series are 1%–5% within the compound. This results, depending on the expansion time, in a specific weight reduction up to 50%.

Create savings

In a reference case based on injection molding of polypropylene, a standard endothermic foaming agent was replaced by BUDIT® F.

By using 4% of BUDIT® a 6% higher yield (related to surface defects) could be achieved. Additionally, the cycle time has been reduced by 10%, due to the superior melt flow. This results into savings of raw materials and machine utilization. In this specific project with 200 tons of compound, the use of BUDIT® F generated a saving of 55.000 € per year.

2017 Development product, commercially available in 2017

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