

BYK-MAX FR 4145

Efficient halogen-free flame retardancy in thermoplastic applications

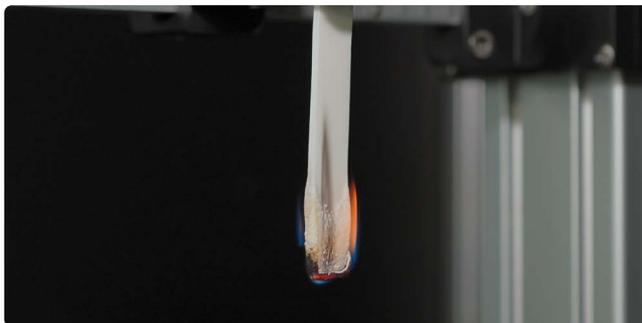
Thermoplastics are versatile and economic materials, making them useful for many applications. If these applications require effective flame retardancy, such as in the construction or automotive sector, flame retardants must be added to thermoplastics in order to meet requirements.

In addition, there is increasing demand in the market for halogen-free flame retardants for technical and environmental reasons. The majority of these products are based on metal hydroxides, which often need to be used in high concentrations and are difficult to incorporate. In addition, they can negatively affect the mechanical properties of the

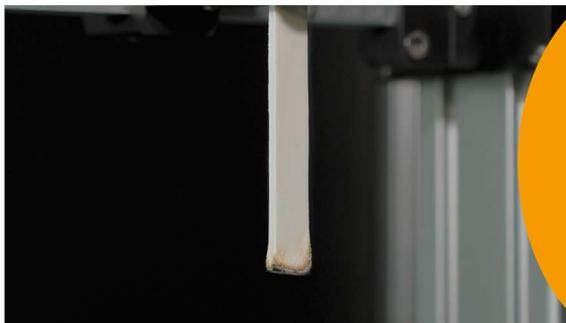
final product. BYK has therefore developed phyllosilicate-based flame-retardant synergists, which increase the effect of conventional halogen-free flame retardants and therefore allow less of them to be used.

The new BYK-MAX FR 4145 results in a significant increase in the efficiency of the flame retardant, reduces dripping tendency, and improves crust formation. Because it is supplied as a concentrate, it is very easy to incorporate and does not produce dust, meaning that additional occupational safety measures are not required.

Excellent flame retardancy in a halogen-free, thermoplastic compound with BYK-MAX FR 4145



Control – without synergist, ATH content 58 %
Sample thickness: 3 millimeters
The UL 94 standard is not satisfied.



With 12.5%* **BYK-MAX FR 4145**, ATH content reduced to 53 %
Sample thickness: 3 millimeters
The UL 94 standard is satisfied and meets the V-0 classification.

Test system: halogen-free, ATH flame-retardant LLDPE/EVA compound

*The recommended level of 12.5 % additive (as supplied) based on the total formulation corresponds to 5 % phyllosilicate content

Benefits

- Optimal delivery form: Easy to incorporate and dust-free
→ No additional occupational safety measures required
- Increases the flame retardancy in halogen-free thermoplastic compounds (in accordance with UL 94)
→ Enables lower flame retardant content (e.g. ATH) in the formulation
- Improves crust formation
- Reduces dripping tendency
- Reduces water absorption
- Maintains important mechanical and electrical properties of the compound

BYK-MAX FR 4145 increases the effect of standard metal hydroxide flame retardants such as ATH and prevents ignition and dripping.

This means that the ATH content of the compound can be reduced.

Improved crust formation with BYK-MAX FR 4145



Control – without synergist, ATH content 58 %

With 12.5%* **BYK-MAX FR 4145**, ATH content reduced to 53 %

Test method: Cone calorimeter test

*The recommended level of 12.5% additive (as supplied) based on the total formulation corresponds to 5% phyllosilicate content

Technical properties

- Organophilic phyllosilicate composition in an ethylene vinylacetate carrier
- MFR (190 °C, 10 kg): 2 g/10 min
- Color: light brown
- Supplied as: Pellet



Your local contact

BYK-Chemie GmbH
Abelstraße 45
46483 Wesel
Germany
Tel +49 281 670-0

info@byk.com
www.byk.com

ADD-MAX®, ADD-VANCE®, ANTI-TERRA®, AQUACER®, AQUAMAT®, AQUATIX®, BENTOLITE®, BYK®, BYK-AQUAGEL®, BYK-DYNWET®, BYK-MAX®, BYK-SILCLEAN®, BYKANOL®, BYKCARE®, BYKETOL®, BYKJET®, BYKOZBLOCK®, BYKONITE®, BYKOPLAST®, BYKUMEN®, CARBOBYK®, CERACOL®, CERAFAK®, CERAFLOUR®, CERAMAT®, CERATIX®, CLAYTONE®, CLOISITE®, DISPERBYK®, DISPERPLAST®, FULACOLOR®, FULCAT®, GARAMITE®, GELWHITE®, HORDAMER®, LACTIMON®, LAPONITE®, MINERPOL®, NANOBYK®, OPTIBENT®, OPTIFLO®, OPTIGEL®, POLYAD®, PRIEX®, PURABYK®, PURE THIX®, RECYCLOBLEND®, RECYCLOBYK®, RECYCLOSSORB®, RECYCLOSTAB®, RHEOBYK®, RHEOCIN®, RHEOTIX®, SCONA®, SILBYK®, TIXOGEL® and VISCOBYK® are registered trademarks of the BYK group.

The information herein is based on our present knowledge and experience. The information merely describes the properties of our products but no guarantee of properties in the legal sense shall be implied. We recommend testing our products as to their suitability for your envisaged purpose prior to use. No warranties of any kind, either express or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding any products mentioned herein and data or information set forth, or that such products, data or information may be used without infringing intellectual property rights of third parties. We reserve the right to make any changes according to technological progress or further developments.

This issue replaces all previous versions.

