PHOSLITE B631C

A: Product description

Proprietary synergistic flame retardant system based on Phosphorus and Bromine for use in Polyolefins.

B: Physical properties

Appearance:	Fine powder
Odor:	odorless
Color	off-white
Bulk density (Kg/m3):	1000
Phosphorus (%)	21.0-24.0
Bromine (%)	9.5-11.0
Particle size average :	< 10 microns

C: Toxicology

Oral toxicity: 200 mg/kg < LD_{50} (rat) < 2000 mg/kg
Classification Xn; R22, R41
Maximum allowable workplace concentration: not stipulated

D: Transport

ADR/RID: not restricted for transport.

E: Applications

Phoslite B631C additive flame retardant is a very effective solution for flameproofing Polyolefins (PP homo- and co-polymer, some selected TPO grades)

PP homo-polymer: typically Phoslite B631C additive is used at concentration of around **1%** to provide flame retardancy (UL 94 V2 at 1.6 mm and 3.2 mm) to PP. This formulation shows the following results: LOI around 27, GWFI at 960°C (both at 3.2 and 1.6 mm) and GWIT at 750°C at 3.2 mm and 825°C at 1.6 mm.Thanks to its very fine particle size, Phoslite B631C can be successfully used for flame-retarding PP films.The very low dosage allows to manufacture V2 compounds with a percentage of bromine around 0.1% in PP homo, so than in some markets, the final compound can be considered as halogen free.

PP co-polymer: typically Phoslite B631C additive is used at concentration of around **2%** to meet UL 94 V2 at 1.6 mm and 3.2 mm. GWFI at 960°C (both at 3.2 and 1.6 mm) and GWIT at 775°C (1.6 mm. and lower thicknesses) can be obtained using standard co-polymers

TPO: Phoslite B631C is used at **2.5%-3%** in combination with Adflex Q100F/Hifax CA10A to obtain a classification UL-94 V2 at 3.2mm e 1.6mm.

Fillers: Phoslite B631C additive is used to provide flame retardancy at UL 94 V2 level for thicknesses of 1.6 mm and 3.2 mm

- at concentration of around **1-1.5%** in 30% glass fiber reinforced compounds
- at around **2%** in homo-PP 20% talc filled (only high purity talcs do not affect final FR properties)
- at concentration of around **1-2%** in 30% CaCO3 (Calcium Carbonate) reinforced compounds

The additive leaves full freedom of colorability to the compounder and the moulder. Phoslite B631C does not increase equipment's corrosion, even without any extra addition of anti-acids and show an outstanding thermal stability.
Phoslite B631C does fully comply with the requirements of the RoHS and WEEE directives.
Additional application data and further developments can be discussed with Italmatch Chemicals Technical Development Center.

F: Processing

Phoslite B631C additive is endued with high thermal stability, therefore does overcome extrusion and moulding under standard PP processing conditions. Phoslite B631C does not interact with the common processing additives like: stabilisers, crosslinking agents, processing aids, inorganic fillers, pigments, etc. Acid scavengers like: synthetic hydrotalcite, metal hydrates are however not recommended, Ca stearate and Na benzoate may affect FR properties if present at high concentration level in the compound, i.e. > 500 - 2000 ppm.

G: Packaging

The product is available in 15 Kg plastic bags.

H: Storage and handling

The product is stable if maintained in the original bags and in a dry place at room temperature.
Keep the product away from strong oxidizing substances and hot alkaline solutions.
Handle the product in compliance with good industrial practice avoiding dust formation.