

## Huber's Safire® 400 Nitrogen-Phosphorus Fire Retardant Technology

Highly Effective Halogen-Free Fire Retardant Additive for Polymers

### Product Description

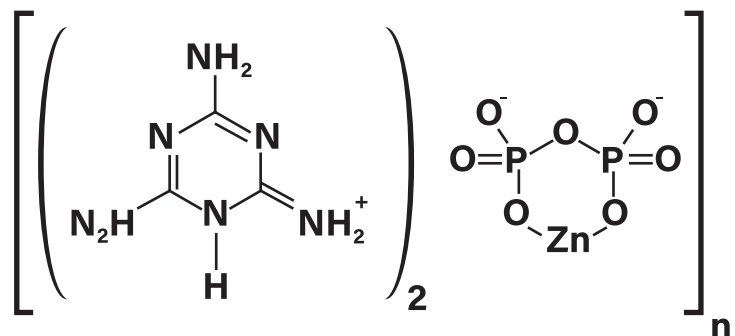
**Safire® 400** nitrogen-phosphorus fire retardant (FR) technology from Huber Advanced Materials is designed to impart enhanced fire retardancy, smoke suppression and char formation compared with commonly available phosphate products. Huber has applied its fire retardant additive expertise in this novel category to create effective FR solutions for the most demanding applications, including thermoplastics, thermosets and coatings. The Safire® 400 technology also offers synergistic opportunities with our existing array of alumina trihydrate (ATH), magnesium hydroxide (MDH) and Kemgard® molybdate products.

The Safire® technology system is versatile and can be utilized as an effective flame retardant and smoke suppressant in these popular resin systems:

- Epoxy
- Polyamides (PAs)
- Polyesters (PBT; PET)
- Polyurethanes
- Polyolefins
- Elastomers



Safire® 400 Molecular Structure

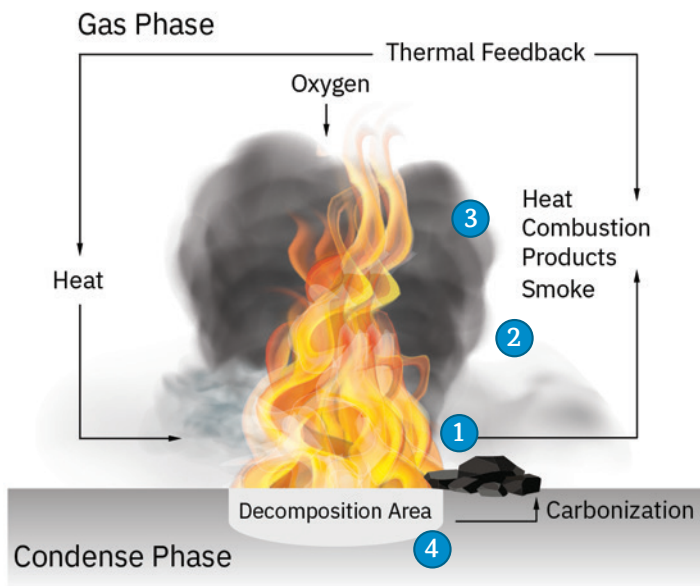


### The Safire® Technology

is designed to help you meet the most rigorous demands in these specific applications:

- Electrical and Electronics
  - Wire and Cable
- Building and Construction
  - Transportation

## How Safire® 400 works as a Halogen-Free Fire Retardant



### Safire® 400 is designed to support FR mechanisms:

- 1 Catalyzes strong char formation (confirmed via lower weight loss)
- 2 Strong char layer supports effective intumescent effect
- 3 Zn as a synergist to support smoke suppression in most polymer matrices
- 4 Acts as a heat sink due to endothermic decomposition<sup>1</sup>

#### Additional benefit:

The presence of Zn helps suppress arcing and tracking values in electrical insulator plastics

<sup>1</sup> Based on DSC results

Patented halogen-free molecule designed to impart superior fire and smoke performance to meet today's evolving fire safety standards.

#### Key Safire® 400 Benefits include:

- Nitrogen-Phosphorus fire retardant with broad process window up to 320°C
- Suitable in both thermoplastics and thermosets
- Improved fire performance (lower fire growth rate)
- Reduced smoke opacity and toxicity
- Excellent thermal barrier
- Reduced or eliminated blooming effect
- Higher CTI performance in engineered thermoplastics
- Lighter color on compound (natural color)

Safire 400® is an excellent synergist with phosphinates and other halogen-free fire retardants.

For more information or to order a Safire® 400 product sample, visit [www.huberadvancedmaterials.com](http://www.huberadvancedmaterials.com)

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