

HOFNIL-APP-II Ammonium Polyphosphate (Phase II)

Ammonium polyphosphate (HOFNIL-APP-II) is a widely used flame retardant known for its effectiveness and versatility across a range of applications. It is particularly valued in industries such as paints, coatings, and polymer manufacturing due to its ability to enhance fire resistance in materials. HOFNIL-APP-II is a polymeric compound composed of ammonia and polyphosphoric acid. It typically exists in two forms based on its crystallinity and chain length:

- **Phase I:** Shorter chain, more soluble in water.
- **Phase II:** Longer chain, crystalline, and less soluble in water. Form II is the most commonly used in flame retardant applications due to its stability and effectiveness.

PRODUCT PROPERTIES

Product Name: Ammonium polyphosphate (phase II)

TECHNICAL PARAMETERS		
S. NO.	PARAMETERS	SPECIFICATION
1.	Appearance	White free-flowing powder
2.	Whiteness	92.0 Min
3.	pH (10% Aq. Solution)	4-5
4.	Acid Value, KOH mg/1g	1.0 Max
5.	Solubility in water (25°C), g/100ml H ₂ O	0.50 Max
6.	Nitrogen, w/w%	21-22
7.	Phosphorus (P), w/w%	21.5-22.5
8.	Thermal decomposition onset, °C	285 Min
9.	Average Particle Size, D50, µm	Approx. 15

Product Code: APP-II

Applications of HOFNIL-APP-II (Ammonium polyphosphate):

- **Polyolefin, Especially Polypropylene:** Compounding **HOFNIL-APP-II** with polypropylene enhances its flame retardancy while maintaining mechanical properties.
 - **Intumescent Systems:** **HOFNIL-APP-II** can be used in polyolefin, particularly polypropylene, as part of intumescent systems. It helps form a stable, protective char layer when exposed to fire, which insulates the material and prevents further combustion.
 - **Other Polyolefins:** **HOFNIL-APP-II** can be used to impart flame retardancy into other Polyolefins like PE, TPE, TPV, TPO etc.

- **Thermosets: Unsaturated Polyesters Resin (UPR): HOFNIL-APP-II** is used in UPR to improve their fire resistance, often in combination with synergists.
 - **Epoxy Resins:** It is incorporated into epoxy resins to provide flame retardancy, making them suitable for high-performance applications.
 - **Polyurethane (PU):** In PU castings and foams, **HOFNIL-APP-II** enhances flame resistance and helps form a protective char layer during combustion.
- **Paints and Coatings: Flame Retardant Coatings: HOFNIL-APP-II** is used to formulate coatings that improve the fire resistance of various substrates. Upon exposure to heat, it releases ammonia and phosphoric acid, which help dilute flammable gases and interrupt the combustion process.
 - **Intumescent Coatings:** In intumescent coatings, HOFNIL-APP-II combined with other FR synergists and forms an insulating char layer when exposed to fire.
 - This char layer reduces heat transfer and delays ignition.
 - **Smoke Suppressants:** HOFNIL-APP-II acts as a smoke suppressant by inhibiting the release of smoke and toxic gases during combustion, thus improving safety in fire situations.
- **Construction Materials: Insulation Materials:** HOFNIL-APP-II is used in insulating materials to provide enhanced fire protection. It is also applied to structural components to increase their fire resistance, making buildings safer.
- **Textiles: Flame Retardant Fabrics:** HOFNIL-APP-II is used in the treatment of textiles to make them flame retardant, suitable for applications in clothing, upholstery, and industrial fabrics.
- **Adhesives and Sealants:** Incorporating HOFNIL-APP-II into adhesives and sealants improves their fire resistance, making them suitable for use in construction and automotive industries

Advantages of HOFNIL-APP-II :

- Free from halogens, making it an environmentally friendly alternative to traditional halogen-containing flame retardants (HFFR or ZHFR).
- **HOFNIL-APP-II** has a favourable toxicological and environmental profile, more environmental friendly FR additive.
- **HOFNIL-APP-II** can be used in a wide range of applications, including flexible and rigid polyurethane foams, various thermoplastics, and coatings.
- The intumescent properties and char formation mechanism provide effective flame retardancy, protecting materials from fire damage.
 - It is easier to handle, blendable with other FR synergist, inert for other polymer additives like thermal & UV stabilizers, plasticizers etc.

Shelf-life: 2 years from date of manufacturing.

Packing Size:

20Kg BOPP laminated bag with polythene liner.

Please Note: We are manufacturing other APP phases, blends, and surface coated APP as well. We can provide technical data or assistance in order to make better FR for any kind of material.

For further information, please contact manufacturer:

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