



Mayzo Makes It Possible

## Benefos® 1680

### Phosphite Antioxidant and Processing Stabilizer

#### Overview

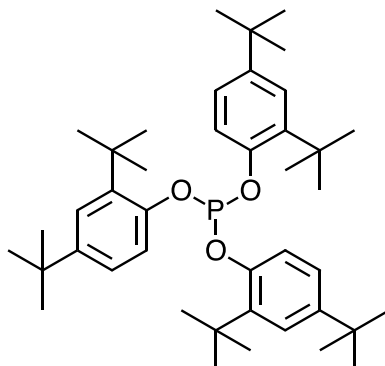
Benefos 1680 is a phosphite antioxidant used as a melt processing stabilizer in a wide range of organic substrates, including plastics, adhesives, sealants, tackifier resins, elastomers, and lubricants. Benefos 1680 often gives best results when combined with a primary antioxidant (for example BNX® 1010 or BNX® 1076).

#### Chemistry

Chemical Name: Phenol, 2,4-bis(1,1-dimethylethyl)-, 1,1',1''-phosphite

CAS Number: 31570-04-4

Chemical Structure:



#### Typical Properties

Product Form: Solid  
Melting Range: 183 – 187°C  
Molecular Weight: 646.9 g/mol

#### Solubility (percent by weight, 20°C)

Acetone	1.8	n-Hexane	11
Benzene	34	Methanol	<0.01
Chloroform	36	Methylene chloride	36
Cyclohexane	16	Toluene	40.5
Ethyl acetate	4	Water	< 0.001

#### Applications

Benefos 1680 is a highly effective processing stabilizer in polyolefins, including polyethylene, polypropylene, polybutene, and in olefin copolymers such as EVA. It is also recommended for use in other polymers such as polyamides, polycarbonates, polyesters, polyurethanes, styrenic polymers, elastomers, adhesives, sealants, lubricants, and many other organic substrates.

## Advantages

- Extends performance of phenolic primary antioxidants (for example BNX 1010, BNX 1076)
- Highly compatible with a wide range of organic substrates
- Provides excellent melt stability and color control in polyolefins during processing
- Low volatility
- Protects polymers from chain scission and crosslinking
- Resistant to hydrolysis
- Extensive FDA clearances
- Compatibility with other stabilizers and additives

## Guidelines for Use

Recommended loading concentrations range between 0.02% and 0.2% in polyolefins and between 0.05% and 0.25% in other substrates. Combinations of Benefos 1680 with phenolic primary antioxidants (BNX 1010, BNX 1076, and others) often show synergistic performance. Benefos 1680 is also suitable for use in combination with other antioxidants (for example thioethers) and light stabilizers, including hindered amine light stabilizers (HALS), UV absorbers, and benzoates. The exact formulation to be used is dependent on the substrate, performance requirements, and other factors, and should be determined by the user based on testing to simulate actual conditions of use. Please contact Mayzo for specific recommendations.

## Storage

This product may be stored up to two years in a sealed container. Containers should be kept tightly closed when not in use and stored in a cool, dry place.

## Safety

Please consult the Safety Data Sheet (SDS) prior to handling or using this product.

## FDA Regulations

Benefos 1680 has extensive FDA clearances under 21 CFR §178.2010, including in elastomers used in rubber articles, nylon resins, polycarbonate resins, polystyrene and rubber-modified polystyrene polymers, olefin polymers and copolymers, ethylene-vinyl acetate copolymers, acrylic and modified acrylic plastics, adhesives, pressure sensitive adhesives, petroleum alicyclic hydrocarbon resins, rosins and rosin derivatives, and in many other applications. It has also been cleared for use in lubricants under 21 CFR §178.3570. Please contact your Mayzo representative for complete details, including restrictions of use.

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