

BNX[®] 1076 TF

Antioxidant & Thermal Stabilizer

Introduction: BNX[®] 1076 TF is an organotin-free, sterically hindered phenolic antioxidant. It is an effective, non-discoloring stabilizer that provides excellent long-term heat stability by preventing thermo-oxidative degradation during processing and service life. This antioxidant also provides good compatibility with resins and excellent extraction resistance. With the absence of organotin compounds, BNX[®] 1076 TF can be used in a wide variety of organic substrates such as plastics, synthetic fibers, elastomers, adhesives, waxes, oils, and fats with minimal health and environmental concerns.

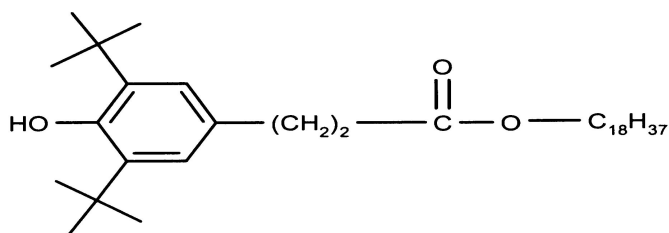
Material Description: Antioxidant and Thermal Stabilizer

Chemical Name: Stearyl-3-(3',5'-di-tert-butyl-4-hydroxyphenyl) propionate

Empirical Formula: C₃₅H₆₂O₃

CAS #: 2082-79-3

Chemical Structure:



Physical Properties:	Appearance:	White Crystalline powder
	Molecular Weight:	530.9
	Melting Range:	49 - 54°C
	Color of Toluene Solution:	25 APHA Max.
	Color of Fusion:	60 APHA Max.
	Volatile Matter:	< 0.5%
	Ash	< 0.1%
	Solubility (10 g/100ml Toluene):	Clear (25°C)
	% Transmittance:	425nm – 97% Min 500nm – 97% Min

Solubility at 20°C (g/100ml solvent):

Solvent	Solubility
Acetone	26%
Benzene	57%
Chloroform	57%
Cyclohexane	40%
Ethanol	1.5%
Ethyl Acetate	42%

n-Hexane	31%
Methanol	0.6%
Toluene	50%
Water	< 0.01%

Applications:

BNX[®] 1076 TF is an Organotin-free, primary antioxidant that can be applied in polyolefins, such as polyethylene, polypropylene, polybutene-1 and other polymers such as engineering plastics, styrene homo- and copolymers, polyurethanes, elastomers, adhesives, and other organic substrates. This high molecular weight phenolic antioxidant also provides excellent stabilization in other polymers such as styrenics, rubber modified styrenics including ABS, SAN and segmented block copolymers, saturated and unsaturated elastomers, PVC, urethane and acrylic coatings, adhesives and petroleum products. BNX[®] 1076 TF can also be used in combination with other secondary antioxidants like Benefos[®] 1680 to provide enhanced performance. BNX[®] 1076 TF can also be used synergistically with light stabilizers and UV absorbers.

Advantages:

- Highly compatible with a wide range of organic substrates
- Easily incorporated by melting techniques due to its low melting point
- Non-staining and non-discoloring
- Excellent resistance to extraction
- Odorless and tasteless
- Improvement of long-term stability
- Low volatility
- Extensive FDA clearances
- Ease of compatibility with other stabilizers
- Reduced health and environmental concerns

Loading**Instructions:**

The loading data and results are based on laboratory work (and field-testing) under controlled conditions and do not necessarily indicate the result that the buyer or user will attain. For this reason we strongly recommend testing of your own system under the actual conditions of processing and end-use prior to full scale testing. The recommended loading concentrations of BNX[®] 1076 TF in the polymers range between 500 ppm and 2000 ppm. In polyolefins the loading concentrations range between 0.1% and 0.4% depending on substrate, processing conditions, and long-term stability requirements. Concentration levels of BNX[®] 1076 TF in hot melt adhesives range from 0.2% to 1%, and in synthetic tackifier resins, BNX[®] 1076 TF concentrations range between 0.1% and 0.5%. Exact loading must be determined by compositions of the specific polymer system.

Packaging:

BNX[®] 1076 TF is available in powder form in a 50 kg (110.2 pound) drum, net weight, with an inner PE liner.

Storage:

This product may be stored up to two years in a sealed container. Containers should be stored in a cool, dry area. Extended storage at elevated temperatures or exposure to direct heat or sunlight could reduce product life. Keep containers sealed when not in use.

Toxicity & Safety:

This material is not intended for use in products for which prolonged contact with mucous membranes or abraded skin, or implantation within the human body is specially intended, unless the finished product has been tested in accordance with the Food and Drug Administration and/or other applicable safety testing requirements. Because of wide range of such potential uses, Mayzo, Inc. is not able to recommend this material as safe and effective for such uses and assumes no liability for any such uses. Read and understand the Material Safety Data Sheet before using or handling this product.

FDA Regulations: Supplement

<u>Existing Regulations</u>	<u>Maximum Concentration</u>	<u>Thickness</u>	<u>Food Allowed</u>	<u>Temperatures Allowed</u>
Antioxidant for polymers, 178.2010 Stearyl-3-(3',5'-di-tert-butyl-4-hydroxyphenyl) propionate				
Olefin copolymers complying with 177.1520 (c), excluding primarily non-crystalline copolymers described in items 3.4 and 3.5	0.25%	no restrictions	no restrictions	no restrictions
Olefin polymers complying with 177.1520 (c), item 3.4	0.25%	no restrictions	all foods for which polymer is approved	no restrictions
Olefin polymers complying with 177.1520 (c), item 3.5	0.25%	no restrictions	non-fatty foods	no restrictions
Adhesives complying with 175.105	no restrictions	no restrictions	no restrictions	no restrictions
Semi-rigid and rigid acrylic and modified acrylic plastics complying with 177.1010	0.01%	no restrictions	no restrictions	no restrictions
		Note: repeat-use food contact plastics only		
Semi-rigid and rigid acrylic and modified acrylic plastics complying with 177.1010	0.2%	no restrictions	foods containing no more than 15% alcohol	no restrictions
Polystyrene and rubber-modified polystyrene complying with 177.1640	0.25%	no restrictions	no restrictions except for fatty foods In fatty foods the finished rubber modified polystyrene polymers shall contain not less than 85 weight percent of total polymer units derived from styrene monomer.	no restrictions
Acrylonitrile-butadiene-styrene copolymers (used in accordance with prior sanction or in compliance with 174-178 and 179.45 ; ABS is not approved under one section as are most polymers)	0.5%	no restrictions	no restrictions	no restrictions
Semi-rigid and rigid vinyl chloride plastics modified with methacrylate butadiene-styrene copolymers complying with 178.3790	0.05%	no restrictions	no restrictions	no restrictions
Rigid polyvinyl chloride 178.3790	0.2%	no restrictions	no restrictions	no restrictions
Polycarbonate resins complying with 177.1580	0.3%	no restrictions	no restrictions	room temperature or below fill and storage
Ethylene-vinyl acetate copolymers complying with 177.1350	0.1%	no restrictions	no restrictions	no restrictions
Nitrile rubber-modified acrylonitrile-methyl acrylate copolymers complying with 177.1480	0.2%	no restrictions	no restrictions	150°F max. (as for polymer)
Styrene block polymers complying with 177.1810	0.3%	no restrictions	all foods for which polymer is allowed	150°F max.
Vinylidene chloride homopolymers and/or vinylidene chloride copolymers complying with regulations in Parts 175, 176, 177, 179, and 181 . The vinylidene chloride copolymers shall contain not less than 50% of total polymer units derived from vinylidene chloride	0.2%	no restrictions	no restrictions	no restrictions
Chlorinated isobutylene isoprene complying with 177.1420 (a) (3)	0.025%	no restrictions	no restrictions	no restrictions

Rubber articles complying with **177.2600**

0.5%

no restrictions

no restrictions

no restrictions

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