



## BNX® 1035

### Antioxidant & Thermal Stabilizer

**Introduction:** BNX® 1035 is a high molecular weight hindered phenolic antioxidant. It is an effective, non-discoloring, sulfur-containing stabilizer that provides excellent long-term heat stability by preventing thermo-oxidative degradation. BNX® 1035 is widely used for the process stabilization of polyethylene wire and cable resins.

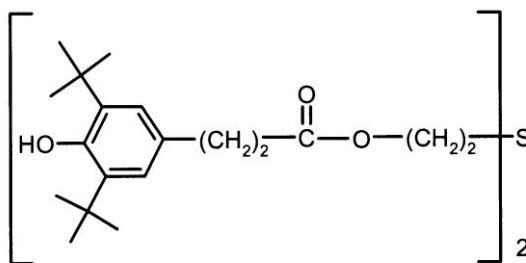
**Material Description:** Antioxidant and Thermal Stabilizer

**Chemical Name:** Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]

**Empirical Formula:** C<sub>38</sub>H<sub>58</sub>O<sub>6</sub>S

**CAS#:** 41484-35-9

**Chemical Structure:**



<b>Physical Properties:</b>	Appearance:	White Crystalline powder
	Molecular Weight:	642
	Melting Range:	63 °C Min
	Ash:	0.1% Max
	Volatile Matter:	< 0.1% Max
	Solubility (10 g/100ml Toluene):	Clear
	% Transmittance:	425nm – 93% Min 500nm – 95% Min
	Specific Gravity (20°C)	1.19

**Solubility:**

**Solubility at 20°C (g/100ml solvent):**

Solvent	Solubility
Acetone	56%
Benzene	56%
Chloroform	35%
Ethyl Acetate	45%
n-Hexane	5%
Methanol	5%
Mineral Oil	0.25%
Toluene	50%
Water	< 0.01%

**Applications:**

BNX® 1035 is a sulfur containing primary antioxidant and heat stabilizer that is widely used for the process stabilization of polyethylene wire and cable resin applications. BNX® 1035 eliminates the concern over micro-contaminants that can affect the insulation properties of the wire, and it also prevents premature gel formation of chemically cross-linked polyethylene during extruder compounding. BNX® 1035 provides efficient processing stabilization and long-term thermal stability with excellent system compatibility and low color that can also be applied in styrenic polymers, polypropylene, elastomers such as EPDM and SBR and for carboxylated SBR latex, polybutadiene rubber and polyisopropene rubber. This high molecular weight phenolic antioxidant also provides excellent stabilization in other petroleum products such as turbine oil and in petrolatum, and higher alphaolefins such as 1-butene and 4-methyl-1 pentene plus polyurethanes, polyesters, segmented block copolymers, ABS, and other rubber modified polymers.

**Advantages:**

- Most widely used antioxidant for PE and XLPE wire and cable resins
- Highly compatible with a wide range of organic substrates
- Non-staining and non-discoloring
- Odorless and tasteless
- Improvement of long-term stability
- Low volatility
- Extensive FDA clearances
- Ease of compatibility with other stabilizers

**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 in polyethylene and carbon black containing polymers range between 0.2% and 0.3% depending on substrate, processing conditions, and long-term stability requirements. Loading levels of BNX® 1035 in polyols range from 0.3% to 0.4%. Exact loading must be determined by compositions of the specific polymer system.

**Packaging:**

BNX® 1035 is available in powder form in a 25 kg (55.1 pound) carton-box, 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:**

**FDA Regulations:**

<u>Existing Regulations</u>	<u>Maximum Concentration</u>	<u>Thickness</u>	<u>Food Allowed</u>	<u>Temperatures Allowed</u>
Antioxidant for polymers, 178.2010 Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]				
Adhesives complying with 175.105	no restrictions	no restrictions	no restrictions	no restrictions
Pressure sensitive adhesives complying with 175.125	0.5%	no restrictions	no restrictions	no restrictions
Petroleum alicyclic hydrocarbon resins complying with 176.170	0.5%	no restrictions	no restrictions	no restrictions
Resins and polymers complying with 176.180	0.5%	no restrictions	no restrictions	no restrictions
Closures and sealing gaskets complying with 177.1210	0.5%	no restrictions	no restrictions	no restrictions
Rubber articles complying with 177.2600	0.5%	no restrictions	no restrictions	no restrictions

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