

## BNX<sup>®</sup> DLTDP Thioester Antioxidant

**Introduction:** BNX<sup>®</sup> DLTDP is a thioester antioxidant. High solubility and superior properties make BNX<sup>®</sup> DLTDP particularly suitable for protection of plastics, rubber, synthetic fiber, fats and oils and petroleum products against deterioration, discoloration and rancidity. Used in combination with primary phenolic antioxidants, it has been proven particularly effective as a result of synergist effects.

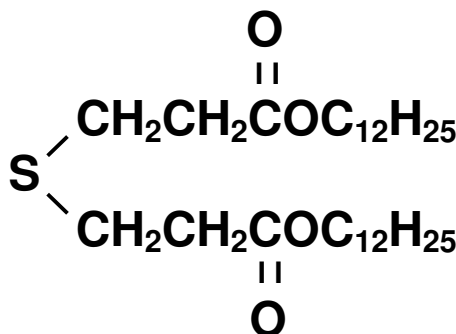
**Material Description:** Thioester Antioxidant

**Chemical Name:** Dilauryl Thiodipropionate

**Empirical Formula:** C<sub>30</sub>H<sub>58</sub>O<sub>4</sub>S

**CAS #:** 123-28-4

**Chemical Structure:**



**Physical Properties:**

Appearance:	White Crystalline Flake
Molecular Weight:	514.86
Melting Range:	39 - 42°C
Flashpoint (Ignition):	399.2°F (204°C)
Specific Gravity:	0.896 (176°F/80°C)
Acid Value	1.00 maximum

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

Solvent	Solubility
Acetone	55
Ethanol	4
Ethyl acetate	60
n-Heptane	52
Toluene	65
Glycerin	Insoluble
Ethylene Glycol	Insoluble

Propylene Glycol	Insoluble
Water	Insoluble

**Applications:** BNX<sup>®</sup> DLTDP is used as a stabilizer for polyolefin and polyethylene applications. It improves the weather and heat resistance of the products, and protects them against loss of hardness or deterioration in high-temperature processes. In addition, BNX<sup>®</sup> DLTDP provides good utility as an antioxidant for polypropylene and polyethylene film for food wrappings. Limit of addition of the substance to food as a result of use in food wrappings is 0.005%. BNX<sup>®</sup> DLTDP can also be used as an antioxidant for fats and oils (FDA limit of addition to fats and oils is 0.02%). BNX<sup>®</sup> DLTDP can also be used as an antioxidant for PVC, acrylic resin, ABS resin and other plastics. BNX<sup>®</sup> DLTDP has been successfully used as an additive for lubricating oils. BNX<sup>®</sup> DLTDP can also be used as a plasticizer for natural and synthetic rubber or plastics.

**Advantages:**

- Readily soluble in a wide range of organic solvents.
- Excellent compatibility with plastics, rubber, petroleum.
- Excellent compatibility with fats and oils.
- BNX<sup>®</sup> DLTDP is generally considered free from serious toxic effects.
- Provides excellent protection in high temperature polyolefin applications.
- Synergistic performance with primary phenolic antioxidants.

**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 range between 0.02 – 1.0% by weight. Exact loading must be determined by compositions of the specific polymer system.

**Packaging:** BNX<sup>®</sup> DLTDP is available in a 50 pound carton drums with PE liner.

**Storage:** BNX<sup>®</sup> DLTDP should be stored in a closed system and be kept in a dry and dark place.

**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:** BNX<sup>®</sup> DLTDP has been approved by the Food and Drug Administration as:

- an antioxidant in food packaging materials and as a preservative in edible fats and oils when used in accordance with FDA regulations 181.24, 182.3109, and 182.3280.
- in packaging materials is not considered an additive by virtue of “prior sanction.” The restriction on use in this case is that the antioxidant may not migrate to food in an amount to exceed a concentration of 0.005% in the food.

- an antioxidant in polymers intended for food packaging under FDA regulations 178.2010.
- a component in accordance with FDA regulations: 182.3280, 182.3109, 175.300, 181.24, 176.170, 175.390, 177.1210, 175.380, 177.1350, 177.1010, and 178.2010.

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