

## MPM<sup>®</sup> 4010 Mixed Tocopherol Stabilizer Blend

### Introduction:

MPM<sup>®</sup> 4010 is a synergistic blend of a new liquid phenolic antioxidant (Mixed Tocopherols), with a standard hindered phenol primary antioxidant (BNX 1010), in the form of a free flowing solid pellet. The mixed tocopherol (MT) component enhances the stabilization efficiency of the additive package thereby achieving improved melt flow and color stability in many polymer and adhesive systems. This may allow for cost savings by reducing the total amount of additives needed.

BNX<sup>®</sup> MT, which is the synergistic component of the stabilizer blend, is produced from natural products such as corn and soybeans, and is considered to be GRAS (Generally Recognized As Safe) under FDA regulations for Food Contact Applications. It has been shown to give superior antioxidant performance in a variety of polymer systems including polyolefins, ABS, and styrenic block copolymers compared to conventional hindered phenol AO's, and also compared to Vitamin E (pure alpha-tocopherol).

### Material Description:

Antioxidant blend

### Chemical Name:

10% Mixed Tocopherols, 90% Tetrakis [Methylene-3 (3',5'-di-tert-butyl-4-hydroxyphenyl) propionate] methane (BNX<sup>®</sup> 1010)

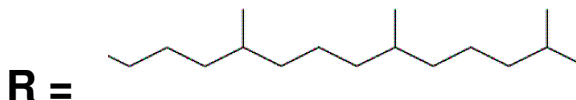
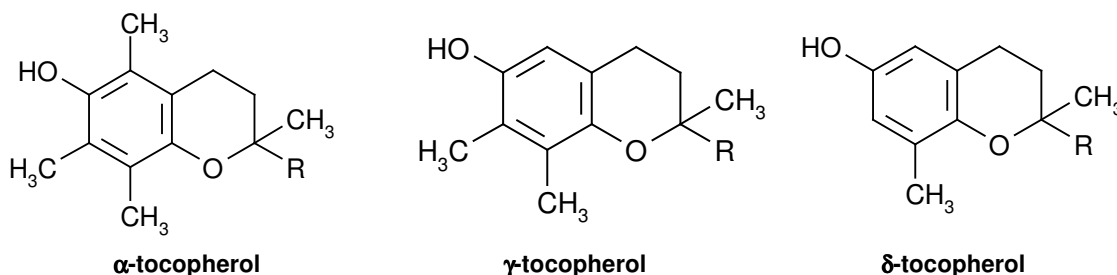
### Empirical Formula:

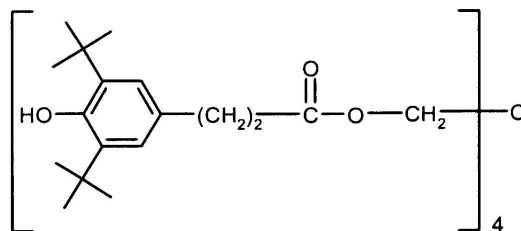
A mixture of  $\alpha$ -Tocopherol (12%),  $\beta$ -Tocopherol (1%),  $\gamma$ -Tocopherol (65%), and  $\delta$ -Tocopherol (20%) with C<sub>73</sub>H<sub>100</sub>O<sub>12</sub> (BNX<sup>®</sup> 1010)

### CAS#:

59-02-9 ( $\alpha$ ), 148-03-8 ( $\beta$ ), 54-28-4 ( $\gamma$ ), 119-13-1 ( $\delta$ ), 6683-19-8 (BNX<sup>®</sup> 1010)

### Chemical Structure:



**BNX 1010****Physical Properties:**

Appearance:	Compressed pellets
Color:	light tan
% Mixed Tocopherol	9-11%
% BNX 1010	89-91%

**Applications:**

MPM<sup>®</sup> 4010 can be used as a stabilizer for polyolefins, styrenic block copolymers (SIS, SBS, SIBS), ABS, polystyrene, and hot melt adhesives.

**Advantages:**

- Highly effective antioxidant and thermal stabilizer for a wide variety of polymers.
- Low volatility: permits reduced AO losses under high temperature operating conditions
- MPM<sup>®</sup> 4010 can be used at lower levels in many polymers compared to that of standard hindered phenols to achieve equivalent thermal stabilization.
- BNX<sup>®</sup> MT is classified as GRAS (**G**enerally **R**ecognized **A**s **S**afe) under FDA regulations for Food Contact Applications
- BNX<sup>®</sup> MT is derived from agricultural products and is perceived as a “Green” alternative to petrochemical-derived antioxidants
- BNX<sup>®</sup> MT offers improved taste and odor properties

**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 0.05% and 1.0% depending on substrate, processing conditions, and long-term stability requirements. Exact loading must be determined by compositions of the specific polymer system.

**Packaging:**

MPM<sup>®</sup> 4010 is available as a free flowing pellet form in a 50 kg (110.2 pound) fiber drum, net weight, with an inner PE liner.

**Storage:**

MPM<sup>®</sup> 4010 will remain stable with normal handling. Drums should be stored in a cool, dry area. Extended storage at elevated temperatures or exposure to direct sunlight could reduce the product life. Keep Drums closed/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:**

This product is sanctioned for use in direct food contact applications. For further information, please call or write your Mayzo representative.

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