



TD 150 FR Natural

TD 150FR Natural Masterbatch is a halogenated flame retardant catalyst masterbatch for use in Monosil, Ethylene Vinyl Silane Copolymer or Sioplas moisture cureable systems requiring UL-44 vertical flame performance in insulation and jacketing applications

Description

TD 150FR Natural Masterbatch contains a halogen-based flame retardant package designed to reduce cross-linked PE flame spread characteristics and achieve a vertical wire flame performance on #12 AWG wire and larger.

Application

A 50% concentration of the TD 150FR blended with 50% Borealis LE 4421 EVS Resin extruded with good cable making practices will pass the necessary properties such as VW-1 flame and the requirements for XHHW-2 and RHH cables as required by the UL-44 and UL-1581. Alternatively, 50% TD 150FR can be blended with commodity LLDPE resin and 1% Monosil silane mixture and also meet these specifications. The percentage of the let-down may be optimized for a particular cable size. The processing conditions, degree of cure and size of conductor can affect the results and care must be taken into consideration by each cable manufacturer to determine the required formulations for their applications.

Specifications

Cables manufactured using **TD 150FR and LE 4421** in accordance with standard industry practices should meet the following industry cable specifications:

- Underwriters Laboratories Standard 44
- Underwriters Laboratories Standard 1581

Physical Properties ⁽³⁾	Typical Value ⁽²⁾	Unit	Test Method ⁽¹⁾
Density ⁽⁴⁾	1.98	g / cm ₃	ASTM D 1505
Tensile Strength	1800	psi	ASTM D 638
Ultimate Elongation	200	%	ASTM D 638
Heat Aging, 7 days at 121°C			UL 1581
Tensile Strength Retention	>90	%	ASTM D 638
Ultimate Elongation Retention	>75	%	ASTM D 638
Flammability	VW-1	-	UL 44
Hot Creep 29 psi 150°C ⁽⁵⁾	25	%	UL 44

(1) Tested in accordance with the latest issue of the designated Test Methods.

(2) Data represents typical values when added to a moisture curable system. Values should not be used for specification work.

(3) Cable properties when extruded with LE 4421.

(4) Compound property

(5) 21 days in ambient warehouse conditions 80 mil wall

General Processing Guidelines

Filled systems are inherently hygroscopic and will, over a period of time, absorb moisture. While the packaging for the TD 150FR is designed to reduce moisture pick up, drying for 4 to 6 hours at 140-160F is recommended for the best results.

Monosil Extrusion Temperatures

LE 4421 EVS

°F	
Z1	300
Z2	320
Z3	340
Z4	380
Z5	400
Head	385
Clamp	385
Flange	390
Adapter 1	400
Adapter 2	400
Melt	440

°F	
Z1	280
Z2	290
Z3	295
Z4	300
Z5	300
Head	300
Clamp	300
Flange	300
Adapter 1	300
Adapter 2	300
Melt	440

Screw: L/D 24:1

Compression Ratio 3:1

Type: Single flight with Maddock Mixing Head

Liability

Information contained in this publication is accurate to the reasonable knowledge of the publisher. M. Holland does not accept any liability whatsoever arising out of the use of the information in this document or the use, application, adaptation or processing of the products described herein.

All information is given in good faith, without warranty, representation, inducement or license of any kind. No guarantee is given that M. Holland products will be suitable in purchasers' constructions or processes for any particular end use. No one is authorized to make representations or give warranties or assume any other liabilities on behalf of M. Holland except if in writing and signed by a duly authorized M. Holland employee. The purpose of the information contained herein is to assist our present and potential customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. It is the customer's responsibility to inspect and test our products and to consult the related Material Safety Data Sheet before use in order to satisfy itself as to the contents of the products and the suitability of the products for the customer's particular purpose. Although the information contained herein is to our knowledge accurate and reliable as of the date hereof, nothing herein shall constitute any warranty (TPEress or implied, of merchantability, fitness or otherwise) and no statement herein shall be construed as an endorsement of any product or process. M. Holland shall not be liable for special, incidental, or consequential damages arising out of the use of the products based upon a breach of warranty, breach of contract, negligence, strict tort liability or any other legal theory.