File E253880
Project 05CA10998

May 6, 2005

REPORT

on

COMPONENT - PLASTICS

Techflex Inc
Greeley, CO

DESCRIPTION

PRODUCT COVERED:

Component - Plastics; polyethylene terephthalate material (PET) and polyamide (PA).

MATERIAL DESIGNATION: Grade designated NYC-1, PET-1 and PETFR-1

GENERAL DESCRIPTION OF MATERIAL:

Grade: Grades NYC-1, PETFR-1, and PET-1 are expandable braided sleevings. NYC-1 is a carbon infused nylon. PET-1 is a polyethylene terephthalate (PET). PETFR-1 is a flame retardant polyethylene terephthalate (PET) material.

MATERIAL MODIFICATIONS - There shall be no changes in the formulation or composition of the material unless previously cleared through Underwriters Laboratories Inc.

FORM OF SHIPMENT - The materials are produced and shipped in the form of flexible sleeving.

COLOR (NOT FOR UL REPRESENTATIVE USE):

The materials covered by this report may be pigmented in the colors shown on Table I. Maximum pigment loading of the materials does not exceed 0.5 percent organic.

GENERAL DESCRIPTION OF INVESTIGATION (NOT FOR UL REPRESENTATIVE USE):

Flammability - Tests to evaluate the flammability characteristics were conducted. The results are summarized in Table I.

Thermal Aging - Samples were assigned a Relative Thermal Index based upon generic base polymer type.

The resulting Thermal Indices are as noted in Table I.

TECHNICAL CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

USE - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

CONDITIONS OF ACCEPTABILITY - The following are among the considerations to be made in judging the use of this material in an end-use product.

1. The material is identified in the accordance with the marking requirements outlined in UL 94 and it can be determined that the part is made from the material specified (the part is molded by a Recognized Fabricated Part 'QMMY2' Manufacturer).

2. The materials have been evaluated for flammability in accordance with UL 94, IEC 60695, and CAN/CSA-C22.2 No. 0.17. UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94, IEC 60695, and CAN/CSA-C22.2 No. 0.17 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances. Refer to Table I for flammability classification. The flammability classification with consideration to color and thickness should comply with the flammability level acceptable for the applicable UL end-product standard or requirements outlined in the Standard for Polymeric Materials - use in Electrical Equipment Evaluations, UL 746C.

3. The engineer must consider the need to investigate the part for other than the properties investigated, in accordance with the applicable UL end-product standard and/or the requirements outlined in the Standard for Polymeric Materials - use in Electrical Equipment Evaluations, UL 746C.

4. Unless otherwise noted in the material footnote, suitability for use when exposed to ultraviolet light, water, oils, soaps, chemicals, X-rays, and the like has not been determined by this investigation.

5. The Follow-Up Services Procedure for a device employing parts molded of this material should specify these parts to have wall thickness, color and material identification and traceability in compliance with the above.

TABLE I

MATERIAL PROPERTIES

Material Designation	Color	Min. thk mm	UL94 Flame Class	R.T.I.°C Elec	R.T.I.°C Mech with Imp	R.T.I.°C Mech w/o Imp	HWI	HAI	HVTR	D495	CTI	HVAR	Diel Str+ Kv/mm	Vol Res ohm-cm	Dim Stab %	$H_2 0$ Abs. %	HDT °C	Ten Imp kJ/m^2	Ten Str MPa	Izod Imp J/M	Flex Str MPa	GWI °C	GWF °C	Ball Pres °C
NYC-1	BK	-	-	65	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PETFR-1	BK	2.02-2.26	HB	75	75	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PET-1	BK	2.58-2.84	HB	75	75	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TEST RECORD NO. 1

SAMPLES:

Samples of the material grades NYC-1, PETFR-1 and PET-1 were submitted by the manufacturer for examination and test.

Grades NYC-1, PETFR-1, and PET-1 are expandable braided sleevings. NYC-1 is a carbon infused nylon. PETFR-1 is a flame retardant PET. PET is polyethylene terephthalate material.

GENERAL:

Test results relate only to the items tested.

The following tests were conducted.

HORIZONTAL BURNING TEST; HB	UL 94 (5th Ed), Section 7 (ASTM D635, IEC 60695-11-10)

The test methods and results of the above tests have been reviewed and found in accordance with the requirements in Standard for Flammability of Plastic Materials for Parts in Devices and Appliances, UL 94, Fifth Edition; Standard for Polymeric Materials - Short Term Property Evaluations, UL 746A, Fifth Edition.

A summary of the results follow.

UL 94 - Tests for Flammability of Plastics Materials for Parts in Devices and Appliances, Fifth Edition

Grade	Thk mm	Color Black
NYC-1	-	-
PETFR-1	2.14	HB
PET-1	2.71	HB

UL746A - Polymeric Materials - Short Term Property Evaluations, Fifth Edition

Grade	Material	Reference Dates			
		IR		TGA	DSC
NYC-1	PA		N3-21-05	05-01-05	05-02-05
PETFR-1	PET		N3-22-05	05-03-05	05-04-05
PET-1	PET		N3-23-05	05-05-05	05-06-05

CONCLUSION

Samples of the components covered by this Report have been found to comply with the requirements covering the category and the components are judged to be eligible for Component Recognition and Follow-Up Service. Under the Service, the manufacturer is authorized to use the Recognized Marking described in the Follow-Up Service Procedure on such products which comply with said Procedure and any other applicable requirements of Underwriters Laboratories Inc. Only those products which properly bear the Recognized Markings are considered as Recognized Components by Underwriters Laboratories Inc.

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