

File E319559  
Project 11CA22857

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Report

On

Component - Plastics (QMFZ2)  
COMPONENT - Plastics Certified For Canada (QMFZ8)

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DESCRIPTION

PRODUCT COVERED:

Component - Plastics; Polyvinylchlorid/ Nitrile Butadiene Rubber (PVC/NBR) .

USR and CNR Material Designation: B-13mm and HF-13mm.

Note: USR - United States Standards Recognized.  
CNR - Canadian National Standards Recognized.

GENERAL DESCRIPTION OF MATERIAL:

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

Form of Shipment - The material is produced and shipped in the form of sheet.

COLOR (NOT FOR UL REPRESENTATIVE USE) :

The material covered by this report may be pigmented in the color shown on Table I and Table II. Maximum pigment loading of the material does not exceed 0.5 percent organic or 5.0 percent inorganic by weight unless otherwise indicated below:

Material Designation	Maximum Pigment Loading by Weight	
	Percent Organic	Percent Inorganic
-	-	-

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 and Table II.

Thermal Aging - Samples were either

- a) Assigned the Generic Relative Thermal Index based upon generic base polymer type, or
- b) Assigned elevated Relative Thermal Index after being subjected to a specific set of functional testing procedures before oven aging and at certain intervals during oven aging of the material. For actual properties tested and end-of-life times refer to the Test Record.

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 and CAN/CSA-C22.2 No. 0.17-00. UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 and CAN/CSA-C22.2 No. 0.17-00 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 and Table II 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		H W I	H A I	H V R	D 4 5	C T I	H V R	Diell Str+ KV/mm	VOI Res ohm-cm	Dim Stab %	H <sub>2</sub> O Abs. %	H D T °C	Ten Imp KJ/m <sup>2</sup>	Ten Str Mpa	Izod Imp J/M	Flex Str Mpa	G W I °C	G W F °C	Ball Pres °C
				Elec	Mech with Imp																		
B-13mm	BK	9.8-10.8 (A)	V-0	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		13.0 (B)	V-0	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HF-13mm	BK	13.0 <sup>Ⓢ</sup>	V-0	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: A - Average density is 0.050 g/cc.  
 B - Average density is 0.070 g/cc.  
 Ⓢ - Average density is 0.050 g/cc.

TABLE II  
CANADIAN MATERIAL PROPERTIES

Material Designation	Color	Min. thk (mm)	Flame Class	H W I (s)	H A I (No. of Arcs to Ignite)	H V A R (mm/min)	C T I (Volts)
B-13mm	BK	9.8-10.8 (A)	V-0	-	-	-	-
		13.0 (B)	V-0	-	-	-	-
HF-13mm	BK	13.0 <sup>©</sup>	V-0	-	-	-	-

Note: A - Average density is 0.050 g/cc.  
 B - Average density is 0.070 g/cc.  
 © - Average density is 0.050 g/cc.