INTERNAL CORRESPONDENCE

PLAINTIFF'S EXHIBIT
UC-916

UNION CARBIDE CORPORATION

270 PARK AVENUE, NEW YORK, NEW YORK 10017

To (Name) Bonding & Elastomer Materials Salesmen
Division
Location
Floor Number

Date October 17, 1974
Originating Dept. Bonding & Elastomer Materials
Floor Number 32nd Floor
Answering letter date
Subject Phenolic Molding Materials
BMMA-5440 Asbestos-Free

Copy to Messrs. M. Bilancetti
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R. J. Ricciardi
F. W. Wurtzell

1) WAK - for your info. We generate the data for updating standard product

2) Files/RSCS - info/product file

Attached is a Data Sheet for the asbestos-free version of BMMA-5440.Black 25 D.C. which may be copied and given to customers currently using the standard BMMA-5440. Printed sheets will be made available for the Data Book towards the end of 1974. It should be noted that the asbestos version is slightly inferior in respect to electrical properties and ASTM deflection temperature. However, these are not expected to be significant in most applications.

Samples of the new 5440 are undergoing tests for yellow card approval at Underwriters Laboratories and it is expected that results will be available by the end of November or early December.

To date all customers have reported favorably on the performance of the new 5440. Again you are asked to do everything possible to expedite the changeover.

Data Sheets for BMRS-5440 will be issued as soon as sufficient data has been obtained to develop reliable figures.

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P. B. Potter

P. B. POTTER

PBP/map
Attachment

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...Division of Union Carbide Corporation reserves the right to alter the formulation and to discontinue the production of this product at any time.

'BAKELITE' PHENOLIC MOLDING MATERIAL

BMMA-5440 Black 25 D.C.

General Purpose

October 1, 1974

DESCRIPTION:

BMMA-5440 Black 25 D.C., without asbestos, is a wide latitude, general purpose compound which molds with an exceptionally smooth surface and has good dimensional stability at elevated temperatures and in high humidities.

PROPERTY	SPECIMEN	TESTING METHOD	UNIT	TYPICAL VALUE
Specific Gravity	...	D792	...	1.39-1.43
Bulk Factor	...	D392	...	2.4 Max
Pourability	...	D792	seconds	-
Molding Shrinkage	1/8 x 4 in. disk	D955	inch/inch	0.003-0.006
Izod Impact Strength	1/2x1/2x2-1/2 in.	D256	ft. lb./in. notch	0.30
Tensile Strength	1/8 in. specimen	D651	psi	6,800
Flexural Strength	1/4x1/2x5 in.	D790	psi	8,600
Modulus of Elasticity in Flexure	1/4x1/2x5 in.	D790	psi	11×10^5
Compressive Strength	1/2x1/2x1 in.	D695	psi	29,200
Dielectric Strength, Short Time	1/8x4 in. disk	D149	volts/mil	306
Volume Resistivity	1/8x4 in. disk	D257	ohm-cm.	6.1×10^{12}
Dielectric Constant, 60_3 cycles	1/8x4 in. disk	D150	...	7.23
10^6 cycles	1/8x4 in. disk	D150	...	6.37
10^6 cycles	1/8x4 in. disk	D150	...	5.17
Dissipation Factor, 60_3 cycles	1/8x4 in. disk	D150	...	0.15
10^3 cycles	1/8x4 in. disk	D150	...	0.08
10^6 cycles	1/8x4 in. disk	D150	...	0.04
Deflection Temp. at 264 psi	1/2x1/2x5 in.	D648	deg. F.	335
Water Absorption, gain in weight	1/8x2 in. disk	D570	per cent	0.28
Granulation	Grades Available: 6, 9, 12, 15			
Plasticity	Can be tabletted with the usual equipment.			
Tabletting Quality				
Heat Resistance	Moldings of this material may discolor, but otherwise experience indicates that exposure to temperatures exceeding 300°F. ordinarily is not recommended but higher temperatures may be withstood if exposures are not prolonged. Trial under expected service conditions is advisable and it is suggested that heat resistance requirements be discussed with a Union Carbide Plastics Company Representative since the effects of elevated temperatures vary for different properties.			

...recommendations, test results, property values, and suggestions are offered herein as a guide in the use of these materials and ... not a guarantee of their performance. The property values given are those to be expected in the product at the time of manufacture. These values are dependant upon using the testing methods as indicated. Properties more certain to be realized are ...assured with lesser frequency than others as is usual where manufacturing operations are closely controlled. If applications ...require continual verification of a certain property or properties, requirements should be discussed with a Union Carbide Plastics Division Technical Representative.

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Union Carbide Plastics Division of Union Carbide Corporation reserves the right to alter the formulation and to discontinue the production of this product at any time.

NEW PRODUCT DATA SHEET

'BAKELITE' PHENOLIC MOLDING MATERIAL

BMMA-~~5440~~ 5138
Black 25 DC

Tentative

DESCRIPTION: BMMA-5440 is a wide latitude, general purpose compound which molds with an exceptionally smooth surface and has better dimensional stability at elevated temperatures and in high humidities than counterparts in the same specific gravity range. This improved product is made for all types of molding. Though it is particularly well suited for decorative appliance parts, it can also be used for electrical and functional parts requiring good dimensional stability.

PROPERTY	SPECIMEN	TESTING METHOD	UNIT	VALUE
Specific Gravity	...	D792	...	1.40
Bulk Factor	...	D392	...	2.1 max.
Pourability	...	D792	seconds	--
Molding Shrinkage	1/8 x 4 in. disk	D955	inch/inch	.004
Izod Impact Strength	1/2x1/2x2-1/2 in.	D256	ft. lb./in. notch	0.29 min.
Tensile Strength	1/8 in. specimen	D651	psi	7,300 av.
Flexural Strength	1/4x1/2x5 in.	D790	psi	9,800 av.
Modulus of Elasticity in Flexure	1/4x1/2x5 in.	D790	psi	1.05×10^6 av.
Compressive Strength	1/2x1/2x1 in.	D695	psi	31,200
Dielectric Strength, Short Time	1/8x4 in. disk	D149	volts/mil	340
Volume Resistivity	1/8x4 in. disk	D257	ohm-cm.	3.2×10^{12}
Dielectric Constant, 60_3 cycles	1/8x4 in. disk	D150	...	7.0
10^3 cycles	1/8x4 in. disk	D150	...	6.0
10^6 cycles	1/8x4 in. disk	D150	...	4.5
Dissipation Factor, 60_3 cycles	1/8x4 in. disk	D150	...	0.13
10^3 cycles	1/8x4 in. disk	D150	...	0.08
10^6 cycles	1/8x4 in. disk	D150	...	0.04
Deflection Temp. at 264 psi	1/2x1/2x5 in.	D648	deg. F.	350
Water Absorption, gain in weight	1/8x2 in. disk	D570	per cent	0.24
Granulation Plasticity Tabletting Quality Heat Resistance	Grades Available: 6, 9, 12 Can be tabletted with the usual equipment. Moldings of this material may discolor, but otherwise experience indicates that exposure to temperatures exceeding 300°F. ordinarily is not recommended but higher temperatures may be withstood if exposures are not prolonged. Trial under expected service conditions is advisable and it is suggested that heat resistance requirements be discussed with a Union Carbide Plastics Company Representative since the effects of elevated temperatures vary for different properties.			

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The recommendations, test results, property values, and suggestions are offered herein as a guide in the use of these materials and are not a guarantee of their performance. The property values given are those to be expected in the product at the time of manufacture. These values are dependent upon using the testing methods as indicated. Properties more certain to be realized are measured with lesser frequency than others as is usual where manufacturing operations are closely controlled. If applications require continual verification of a certain property or properties, requirements should be discussed with a Union Carbide Plastics Division Technical Representative.