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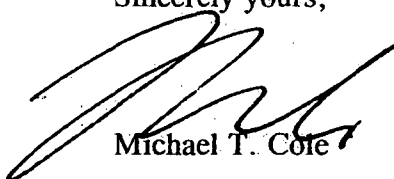
Randall Bono, Esquire
The Simmons Firm
301 Evans Avenue
Suite 300
P.O. Box 559
Wood River, IL 62095

Re: Durez Division of Occidental Chemical
Our File No. 04716/01604

Dear Randy:

Pursuant to your request, I have enclosed documents dealing with molding compounds produced by Plenco and Rogers.

Sincerely yours,



Michael T. Cole

MTC:ras
Enclosures

SC-EEI-0750

Pleneo

F. L. Lign

Date December 24, 1969

9 lb of material received

By F. L. Lign

MOLDING COMPOUND REPORT

Product PE-558 (1/2 inch long) Color Brown Form 3/16 in. Modules, 1/2 in. long

From Let's Hammer, Bowling Green, Ky. Date Rec'd 10/18/69

Competes with Durez

Application Size #3 and #4 starter base cores and housing

Bleeding () Non-Bleeding ()

Customer's Comments PE-558 has better dielectric properties and
much better for drilling than the 2-3727.

Comments After Test PE-558 is similar in composition to DUREZ
23727, including the presence of crocidolite asbestos.
The PE-558, however, has better dielectric properties,
especially at elevated temperatures. In this respect
DUREZ 23727 is not an equivalent to PE-558.

FOR INTRA-COMPANY USE ONLY

COMPRESSION MOLDING PROPERTIES

POWDER PROPERTIES

S-Cup Mobility	0.070 in. 5.9 wt 49.9	36/14.8 50/12.6	App. Density	73.1
S-Cup cure at	170 in. flex	75/9.6 100/8.4	Funnel Flow	
Flexure		1.98 x 10 ⁶	Preforming	
Impact/inch		7.381	Screen Test On	M %
Tensile		7.74		M %
Hor. Deflection		422.7		M %
M. Gravity		75 (130 TX)		M %
Shrinkage	8-Tow	1.842		M %
Coverage		.0017		M %
B-Cup: RF Preheat		sec.		M %
Close Time		sec.		M %
Cure (Timer)				M %
Gloss			Total	%

B-Cup Remarks

Cap cure 180°C.

30 mm Torque

Cap. App.

PLUNGER MOLDING PROPERTIES

Mold Temperature

Preheat		Flexure (in. bar)	Gate Vent
Aux. Rom Pres. (min.)		Impact/in. (in. bar)	
M. Gravity		Tensile	
Shrinkage		Cure (in. bar)	

COMMENTS ON MOLDING

ELECTRICAL TESTS

Dielectric Strength (Compression) S/T 186 v/mil S/S 122 v/mil

Dielectric Strength (Pfinger) S/T _____ v/mil S/S _____ v/mil

Volume Resistivity

Power Factor and Dielectric Constant (cycle)		Arc Resistance	
		Method	
Dry (Cond: 8)		Max.	sec. sec.
Wet: 24 hrs.		Min.	sec. sec.
Wet: 100 hrs.		Avg.	sec. sec.
Wet: 400 hrs.		Remarks	
Wet: 1200 hrs.			

Field Dielectric Test 6KV - 1 hour, 1 hour, 3 1/2 min

5321 Mrg Absn. 0.90%
0.171 Lg Resn. 0.23%

CHEMICAL RESISTANCE TESTS				Water Absorption (ASTM)	
	Weight	Thick	Width	Length	Appearance
96 hr. Boil. H ₂ O	%	%	%	%	
96 hr. Boil. 10% H ₂ SO ₄	%	%	%	%	
96 hr. Boil. 0.5% NaOH	%	%	%	%	
24 hr. Boil Soap	%				

Cap Bleeds	Appearance	Transmission
4 Solvents		
Alcohol		
Phenol	mg.	pH
		NH ₃

Comments on Chemical Resistance

Conc. Mixture 3.2%
TCL Mixture 0.6%

CHEMICAL ANALYSIS TESTS

Ash 59.37% N 1.32% Type Resin Furfural

CaO % Hexa on Resin 1.5%

Acetone Extract 32.45% Color of liquor Light Orange

Color of residue Coloring agent

B-Naphthol Extract %

Filler Content (Microscope)

On Acetone Residue Asbestos and Crocidolite

On Molded Surface Asbestos and Crocidolite

Hot Plate Odor at 165°C

Comments on Chemical Analysis

MISCELLANEOUS TESTS

E-scale F-73.2
Rockwell Hardness S-71.2 Nigrometer Heat Distortion

Flame Resistance Ignition Time sec. Burning Time sec.

Remarks

Modulus of Elasticity in Tension

Heat Resistance

11
11000

Date 1/25

By J. Longobardi

MOLDING COMPOUND REPORT

Product PE 558 Color Black Form 1/2" x 1/2"

From Little Himmer Date Rec'd 1-25-65

Competes with Durez 23727/Blin

Application _____

Bleeding () Non-Bleeding ()

Customer's Comments This material (PE 558) is in the two soft series of plastics and the Durez 23727 they had purchased is in the stiff series. It is just what they need for optimum molding properties.

Comments After Test PE 558 is equivalent to Durez 23727/16 in all respects.

FOR INTRA-COMPANY USE ONLY

COMPRESSION MOLDING PROPERTIES

POWDER PROPERTIES

S-Cup Mobility	620 F 15% 30/25 20/28 1.1 245	App. Density	57.2
S-Cup cure at	200 F 10% 100 X 56	Funnel Flow	
Flexure	in. bar 5.52.0	Preforming	
Impact/inch	in. bar 161	Screen Test On	M %
Tensile	5.89.0		M %
Hot Deflection	2 F (22.76)		M %
M. Gravity	1.845		M %
Shrinkage	3.5 0.018		M %
Coverage			M %
B-Cup: RF Preheat	sec.		M %
Close Time	sec.		M %
Cure (Timer)			M %
Gloss		Total	%

B-Cup Remarks

Cap cure 180°C.

30 mm Torque

Cap. App

PLUNGER MOLDING PROPERTIES

Mold Temperature

Preheat		Flexure (in. bar)	Gate Vent
Aux Ram Pres (min)		Impact/in. (in. bar)	
M. Gravity		Tensile	
Shrinkage		Cure (in. bar)	

COMMENTS ON MOLDING

ELECTRICAL TESTS

Dielectric Strength (Compression) S/T _____ v/ml S/S. _____ v/ml

Dielectric Strength (Plunger) S/T _____ v/ml S/S. _____ v/ml

Volume Resistivity

Power Factor and Dielectric Constant (_____ cycle)		Arc Resistance	
		Method _____	
Dry (Cond. B)		Max.	sec. _____
Wet 24 hrs.		Min.	sec. _____
Wet 100 hrs.		Avg.	sec. _____
Wet 400 hrs.		Remarks _____	
Wet 1200 hrs.			

CHEMICAL RESISTANCE TESTS					Water Absorption (ASTM) <u>0.21%</u>
	Weight	Thick	Width	Length	Appearance
96 hr. Boil. H ₂ O	%	%	%	%	
96 hr. Boil 10% H ₂ SO ₄	%	%	%	%	
96 hr. Boil 0.5% NaOH	%	%	%	%	
24 hr. Boil Soap	%				

Cop Bleeds	Appearance	Transmission
4 Solvents		
Alcohol	_____	_____
Phenol	_____ mg.	pH _____ NH ₃ _____

Comments on Chemical Resistance

CHEMICAL ANALYSIS TESTS

Ash 5.66 % N 1.36 % Type Resin 3.56 Furfural 1.15
 CoO % Hexa on Resin 1.2 %
 Acetone Extract 1.32 % Color of liquor
 Color of residue Coloring agent
 B-Naphthol Extract 1.15 %

Filler Content (Microscope)

On Acetone Residue

On Molded Surface

Hot Plate Odor at 165°C

Comments on Chemical Analysis

MISCELLANEOUS TESTS

Rockwell Hardness E-8.5 Nigrometer Heat Distortion
 Flame Resistance: Ignition Time sec. Burning Time sec.

Remarks

Modulus of Elasticity in Tension

Heat Resistance

File Com

Date 2-14-64

By J. Kama & G. J. Jorgensen

MOLDING COMPOUND REPORT

Product PE 407 Color Brown Form fluff
From Cutler Hammer Date Rec'd 1/11/63

Competes with Durez

Application:

Bleeding (☒) Non-Bleeding (☐)

Customer's Comments:

Comments After Test

We do not make a similar material. This is 40% stronger in impact than 18975. It is fluffy with low apparent density and difficult to handle because of low bulk factor. All other tests show equivalent values to 18975.

FOR INTRA-COMPANY USE ONLY

COMPRESSION MOLDING PROPERTIES

S-Cup Mobility .020 in
+5%

S-Cup cure at 75/14.2 in. 100/12.2
1.90 x 10⁶

Flexure 1/4 in. bar 17,160

Impact/inch 1/2 in. bar 1,210

Tensile 5,760

Hol. Deflection 58 (125TK)

M. Gravity 1.801

Shrinkage 8T 100.25

Coverage

B-Cup: RF Preheat

Close Time

Cure (Timer)

Gloss

POWDER PROPERTIES

App. Density fluffy
 Funnel Flow
 Preforming
 Screen Test On M %
 M %
 M %
 M %
 M %
 M %
 M %
 M %
 Total %

B-Cup Remarks

Cap cure 180°C

30 mm Torque

Cap. App.

PLUNGER MOLDING PROPERTIES

Mold Temperature

Preheat

Aux. Ram. Pres. (min.)

M. Gravity

Shrinkage

Flexure (in. bar)

Impact/in. (in. bar)

Tensile

Cure (in. bar)

Gate Vent

COMMENTS ON MOLDING

Min. Plunger

Cure @ 310°F

PE 407

15 1/2 T @ 40 sec

1' 20 sec

18975/116

15 1/2 T @ 10 sec

55 sec

ELECTRICAL TESTS

8/11/64

Dielectric Strength (Compression)

S/T 162 v/mil

S/S 123 v/mil

Dielectric Strength (Plunger)

S/T _____ v/mil

S/S _____ v/mil

Volume Resistivity

Power Factor and Dielectric Constant (_____ cycle)		Arc Resistance	
		Method <u>B</u>	<u>1 line</u>
Dry (Cond. B)		Max. <u>18.2</u> sec.	sec.
Wet 24 hrs.		Min. <u>15.2</u> sec.	sec.
Wet 100 hrs.		Avg. <u>17.4</u> sec.	sec.
Wet 400 hrs.		Remarks _____	
Wet 1200 hrs.			

CHEMICAL RESISTANCE TESTS

Water Absorption (ASTM) 0.24%

	Weight	Thick	Width	Length	Appearance
96 hr. Boil. H ₂ O	%	%	%	%	
96 hr. Boil. 10% H ₂ SO ₄	%	%	%	%	
96 hr. Boil. 0.5% NaOH	%	%	%	%	
24 hr. Boil. Soap	%				

Cap Bleeds

Appearance

Transmission

4 Solvents

Alcohol

Phenol

mg.

pH

NH₃

Comments on Chemical Resistance

Cons 6.4%

CHEMICAL ANALYSIS TESTS

Ash % 52.22 N % 1.97 Type Resin 2 step Furfural Neg
CaO % Hexa on Resin 14.0% Benzol Extract 14.6% Benz Sol B-Naphthol 8
Acetone Extract % 40.41 Color of liquor orange

Color of residue _____ Coloring agent _____

B-Naphthol Extract % 38.96

Filler Content (Microscope)

On Acetone Residue _____

On Molded Surface Long fiber esters

Hot Plate Odor at 165°C _____

Comments on Chemical Analysis _____

MISCELLANEOUS TESTS

Rockwell Hardness _____ Nigrometer _____ Heat Distortion _____

Flame Resistance: Ignition Time sec. _____ Burning Time sec. _____

Remarks _____

Modulus of Elasticity in Tension _____

Heat Resistance _____