

cc: Dr. J. V. Humn, Cleveland

C 10400

Auxiliaries Research

P.C. and C.
Sales

Detroit

November 15, 1951

W. H. Boehm

- Lithopone -
Mac-O-Lac, Detroit

We received the gallon sample of grinding vehicle and gallon of thin-down vehicle, as requested in my letter of September 24th; and have now made tests in these vehicles, using several types of lithopone. Unfortunately, however, from a consistency standpoint at least, the grinding vehicle had gelled somewhat before we used it and this will give higher consistency than we normally would expect to get from this vehicle, based on previous tests. For your information, the viscosity of the original grinding vehicle as determined by the tube, in comparison to the gallon sample was as follows:

<u>Grinding Vehicle</u>	<u>AVRL</u>	<u>Viscosity</u>	<u>Wt./Gal.</u>
1st sample, 1 qt.	1955	22.2"	7.24
2nd sample, (gelled)	1983	Too heavy to fill tube	7.22

In spite of the fact that the vehicle was gelled, we went ahead and made the paints, using the formula given in my letter of September 24th; and, as per your suggestion of October 12th, we tinted half of the batch to about the shade you suggested, using Solfast Sky Blue PL 316. The consistency and package condition of the paints, using various types of Permolith 40M, Permolith W-320 and Fonolith EL-133, were as follows:

<u>Lithopone</u>	<u>Lot</u>	<u>AVRL</u>	<u>Wt./Gal.</u>	<u>Storers at 75° F. K.U.</u>			<u>Pkg. Cond.</u>	
			<u>T.</u>	<u>A.</u>	<u>1 D.</u>	<u>3 D.</u>	<u>10 D.</u>	<u>10 Days</u>
W-320, Sec. Std.	W3523C	1112	14.23	14.23	128	134	131	No settling.
Fono. EL-133	—	1954	"	14.24	115	121	120	" "
Perm. 40M	—	1953	"	14.26	117	122	120	Considerable, soft settling.
Perm. 40M Bird	04892	1926	"	14.09	117	119	112	" " "
Perm. 40M	04373	1635	"	14.21	123	123	128	V. sl. soft settling.
Perm. 40M Std.	K5123	999	"	14.19	118	122	122	" " "
Perm. 40M R-7	KL625	330	"	14.20	114	120	118	" " "

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The package condition of the tinted paints, after sixteen days storage, was as follows:

<u>Lithopone</u>	<u>Lot</u>	<u>ADRL</u>	<u>Package Condition - after 16 days</u>
W-320, Sec. Std.	W-3523C	1112	No settling; heavy body.
Ponolith EL-133	—	1954	No settling; heavy body.
Pernolith LOM	—	1953	Considerable, reasonably hard settling; heavy body.
Pernolith LOM, 31rd	C-4892	1926	Less than considerable, with a reasonably hard settling; heavy body.
Pernolith LOM	C-4373	1635	No settling; heavy body.
Pernolith LOM, Std.	K-5123	999 S	Sl. soft settling; heavy body.
Pernolith LOM, R7	K-4625	330	Sl. soft settling; heavy body.

You can see from the above that there appears to be considerable variation in the settling properties of the different lots of Pernolith LOM used. We do not know why there should be this difference, but are checking with Coffeyville to see if they can discover in the method of manufacture, why there should be a difference. Both Lot ADRL-1953, received from Mac-O-Lac, and Lot C-4892, 31rd, show rather bad settling properties, while Lot K-5123 and Lot K-4625 show only slight, soft settling. Lot C-4373 and Ponolith EL-133, as well as Pernolith W-320 show no settling after 16 days.

We were unable to detect any difference in the tinted samples and the untinted as regard to appearance or formation of any crystalline substance. None of the paints show this formation. We will hold on to them longer, however, to see if any such things develop.

You will note that the consistencies of all the above paints are heavy. This, however, is due to the gelation of the vehicle and not through any high body caused by the pigments themselves, except in the case of W-320 which is higher and would be expected to be higher.

As soon as we hear from Coffeyville on the possible reason for the difference in these lots I will let you know, in the hopes that we might be able to give you something that will not produce this settling condition noted in this formula.



C. E. Adams

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CHA:af

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