cc: J. V. Hunn

Chicago — Auxiliaries Research

Coffeyville

January 29, 1954

J. B. Boehmer

Johns-Manville Co. - Lithopone

The above company uses in the neighborhood of 750 tons of lithorone per year in coating some of their products. At this time they are using a half and half combination of Pemolith HC and Permolith 60M. Therefore, we are in a position to have half the business on this basis. However, due to the fact that Du Pont has gone out of the lithopone business, they want a replacement for the above combination, but do not find our Permolith W-320 quite high enough in hiding power to be satisfactory for the complete replacement of HC and 60M.

It is my understanding that New Jersey Zinc Company has produced a satisfactory replacement for Pemolith HC, but in spite of this, Johns-Manville still would rather have one lithopone to replace the combination now being used. New Jersey Zinc is working on this, as we have likewise been working on it here in the laboratory.

We have now been able to produce a lithopone which we believe will give equal or slightly better hiding power than the combination of HC and 60M by two methods. The first method is merely to increase the N grade sodium silicate up to 3% instead of the present 2% being used on Permolith W-320, and adding aluminum sulfate to the point where filtering is satisfactory but not sufficient to give stoichiometrical amounts. As you know, we formerly used 3% on W-320, but through the years have dropped our treatment down somewhat because the demand for high-dry-hiding pigments was not great. However, the Johns-Manville formula is such that it emphasizes and utilizes the high-dry-hiding properties, and for this reason the higher treatment is the more desirable.

Laboratory batches show that the 3% treatment will give a hiding power comparable to the above combination, as previously indicated. However, we feel that another approach should also be made, as laboratory samples also show that when the 3% N grade sodium silicate is fixed with barium chloride instead of aluminum sulfate even better results are obtained.

As we discussed over the phone yesterday, you will make up two small lots of lithopone as follows:

1. Increase the regular W-320 treatment to 3% N grade sodium silicate, followed by the addition of aluminum sulfate to the proper amount but below the stoichiometrical point. Mill this at no higher than R-5 on the Raymond mill.

. Use Permolith 60M slurry as a base material.

2. Repeat the above with 3% N grade sodium silicate, but fix

the silicate by the addition of barium chloride using no more than about one-third stoichiometrical.

Our laboratory batch shows that this material filtered easy even though the pH was up around 9.7. Mill at no higher than R-5 set.

3. We believe the third variation is in order to try to reduce the pH to more nearly normal range of around 8 - 8.5, approximately. This can be done, based on laboratory trials, by first adding sulfuric acid to the silicate treated slurry to bring the pH down to 9 - 9.5 before adding the barium chloride. This approach, if satisfactory, should produce more uniformity, as the slurry is pre-adjusted. Mill at no higher setting than R-5.

Since these samples are extremely important and Mr. Egeler is anxious to submit a sample as soon as possible, you should use all proper speed to get the samples out to us for test. Just as soon as you get a sample ready please send a gallon can, one by parcel post and one by express, both preferably special delivery, to see if we can't get the samples here in time. As you know, parcel post, special handling, has not been received here until after 5 or 6 days, or even a week. Maybe if we send them special delivery we can get them the next day. We will immediately test the materials upon receipt. Please also send a letter giving all your physical tests to save further time.

I think I emphasized to you the necessity for speed, based on information from Mr. Egeler, so that as you indicated yesterday, you would start the plant immediately on making 60M material for this purpose. Mr. Egeler even gave serious consideration to submitting the laboratory samples so as to not wait for the plant sample, but apparently Johns-Manville indicated they were willing to wait selection of a material to give a while longer to the job.

C. M. Adams
Mineral Products Laboratory

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cc: HMC, Jr. JVM CED GW

0007-SWP-043741