Chicago — Auxiliaries Research

Coffeyville — May 15, 1953

J. B. Boehner — Columbus Coated Fabrics
Lithopone

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Mr. Fred Porter, Mr. Tom Rogers, and the writer visited the plant of the above company on Tuesday, May 12, to discuss lithopone with them. Through possibly a chain of circumstances we were able to talk to the chemist in charge of coating instead of W. M. McCloud, the purchasing agent, and Mr. Bill Hagee, the technical director. Both Mr. McCloud and Mr. Hagee were quite courteous, but were tied up with some other business, and for this reason referred us to Mr. J. Lemon, who is in charge of their coating operations in the laboratory. Both Mr. McCloud and Mr. Hagee showed considerable interest in trying to give us the information that we wanted, in that they came into the conference occasionally to listen in on the discussion.

We believe that possibly through the above series of circumstances that we were able to penetrate more deeply the cloud which has surrounded this potential account for the last 15 years. At least we obtained direct information from the chemist in charge of the coating, who has tested samples submitted during recent years. In our effort to satisfy this account with our lithopone we assumed from the start that we had nothing in particular to lose and therefore kept driving away, as it were, to try to reach the bottom of the difficulty. Mr. Lemon assured us that they were very sincere in their testing, and that they would be happy to give us some of their business if we could produce a satisfactory lithopone for their purpose.

He further indicated that their ties were not such that they were committed to any other company which prevented them from purchasing from us. He was also rather frank to admit that even though they might approve a sample that it was still up to us to convince the management that they should purchase our lithopone. In other words, it was quite obvious that just to satisfy the laboratory and plant on the lithopone didn't mean that we were in. After that it was entirely a matter to be settled between our sales department and the purchasing agent.

Mr. Lemon was quite frank to admit that their laboratory tests did not tell the whole story, and that on various occasions the laboratory had approved samples only to find when they put them into plant production, some small factor was not up to standard. This was the case with the 500# shipment of lithopone which you called Bib and shipped on order received May 12, 1952. The laboratory saw nothing particularly wrong with this sample, but when it got to the plant it produced low gloss and made the cloth somewhat stiff, but did have proper leveling. This Bib is apparently the phthalic anhydride treated lithopone made on a 30% base, but I am not sure whether it was Bird classified or not.

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One of the surprising things that came from this conference was that Columbus Coated is not satisfied with Albalith 90 and do not use it as such. The disadvantage of this lithopone, so far as they are concerned, is that it has poor hiding and poor color. The other lithopone which they use is Penolith HR8 which likewise is not satisfactory, but does give whiteness and hiding power but low gloss. A 50/50 blend of Albalith 90 and HR8 seems to give them the best performance. I think this explains why we have never had any rejections or criticisms on the low body of our lithopone, as they didn't pay any particular attention to the body of the lithopone anyway. As a matter of fact they did not know exactly what we were talking about when we said that Albalith 90 was high body and HR8 was low body, or gave, respectively, high consistency and low consistency. Our attempt in the past to try to match the body of Albalith 90 was unnecessary, apparently. You have therefore been right in recent years in submitting a medium oil absorption lithopone like Pernolith 40M. Although they seemed to be somewhat vague as to the term "body and consistency", they did indicate that it was extremely undesirable to have to thin the paste during operation.

They further indicated that zinc oxide was extremely undesirable, causing excessive stiffness of the paste during application. They do use a high acid linseed oil vehicle of about acid value 20. This, no doubt, explains another reason why they like Penolith HR8, because it is, as the term indicates, nonreactive and therefore low zinc oxide. Albalith 90 likewise runs low zinc oxide, but is high body.

Mr. Loman indicated that both Albalith 90 and Penolith HR8 were special lithopones, not necessarily made directly for them, but selected from production for them. I really think that we do have the potential possibility of satisfying and selling this account, but it is not going to be an easy proposition satisfying the laboratory, and it is going to take some selling, so we gathered, to convince the purchasing agent.

I might mention also that this account has practically discontinued the use of latex for coating, largely because it is more economical to use the linseed oil. They apparently make very few changes in their formulation and do very definitely expect one lithopone to perform equally as well as another lithopone just by direct substitution in their formula without any adjustments. This, of course, makes our task considerably more difficult, but Mr. Loman didn't feel antagonistic toward suggestions that we might try in the laboratory to improve various properties through slight changes in formulation, although apparently they themselves do not try to make the material work, but merely test on a stated formula and it either does or does not work to their complete satisfaction. Apparently, any slight deficiency on any phase of performance would be cause for rejection.

Some of the factors which they consider highly desirable are flow, softness (lack of stiffness of the cloth), toughness, high gloss, smoothe, whiteness, good coverage, good leveling, and of course no increase in stiffness or body of the paste during application. By flow they mean uniform, smooth application from their knife onto the cloth. They also indicated that the paste should have a sharp break. This was not too clear to me, but I gathered that they meant that the material wouldn't string. Furthermore, they do not like to increase the pressure of the blade against the cloth; this seems to be set, and is seldom adjusted for greater or less tension. This, of course, puts another burden on us in trying to satisfy them, because possibly in some cases, just a slight adjustment of tension one way or the other might make a given lithopone work satisfactorily, but our lithopone must work without adjustment, apparently, just like the others. This may seem rather harsh, but it apparently explains the thousand and one little reasons that we have had during the last 15 years as to why a sample of lithopone submitted to them was not satisfactory. I believe that if you will review the record, some of which are given in your letter of March 4, you will find it is first one little cause and then the other. These "little causes" are apparently big in their estimation, however.

I might say that they indicated that the dispersion characteristics of B4A were satisfactory, although here again they go entirely by guess as to how fine they grind their paste. All they could say was that they grind it fine, but apparently have no measurement for this. I don't know whether this means that they set the mill and leave it set or not. At any rate, any sample of lithopone that we submit apparently will have to meet all the above characteristics, both in the laboratory and the plant, before the chemist will approve them, and then it will become a problem of selling. Apparently, we have never gotten to the second stage yet, as there has always been some little thing wrong with our lithopone, based on their test.

I would like to point out that the 500# lot of lithopone B4A looked very good to them except that it was low gloss and produced stiffness of the fabric. I don't have the slightest idea in the world, and I am pretty sure they don't either, as to why one lithopone would produce a stiff cloth and the other one a flexible cloth, so as far as I am concerned, we are just guessing and hoping that what we submit will not have this property.

Mr. Lemon has agreed to send us vehicle, together with primed cloth, ready for coating for our tests. He indicated that there were 5 or 6 coats applied to the cloth before the final coat containing lithopone was applied. Possibly through this testing we can determine differences in stiffness, but all their tests are more or less subjective and are not based on instruments. Gloss is determined by direct

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observation, softness by feel; texture or dispersion is determined by the microscope, based on standards which they have set up.

The formula used for testing their lithopone consists of the following: 100# of pigment; 55# of #15 (their vehicle); 16# of mineral spirits, with 0.05% manganese and 0.08% cobalt added on the basis of the oil content as driers. They cure their coating for 4 hours at 180° F. in the plant. In the laboratory they cure for 2 hours at 180° F., which they have found to duplicate the plant operation.

I believe, as preparation for another onslaught to try to produce a lithopone satisfactory to them, that you should send us about 5# of each of the lithopones which you have submitted in recent years and had them rejected for one reason or another. This should give us a basis for becoming familiar with their difficulties. In the meantime I think it would be well also to give some thought to other potential treatments to obtain the desired effects, keeping in mind that the #44 apparently was satisfactory except for low gloss and produced stiffness in the cloth. We will not only test these lithopones, but will make some changes in formulation to see if we can improve certain characteristics, in the hope that they likewise would be willing to make slight changes to improve the performance. This I believe they will be willing to do, but will more or less depend on us for the suggestion.

In submitting lithopones, be sure you identify what the material is, giving us as many characteristics as possible as a guide to formulation, as well as additional treatment to obtain the desired effect. I don't think I need to say that we shouldn't become discouraged in our attempt to satisfy this account, particularly since we have been working on it for 15 years. However, I would like to say that we do feel that Mr. Lemon was sincere in his efforts and convinced me that the various little factors for rejection were significant to them; but, of course, the disappointing thing is that they apparently are so unwilling to make any changes in formulation to improve certain characteristics which are normally extremely desirable. However, this is the situation, and we will have to consider this in trying to satisfy them. Mr. Lemon promised to send the samples of vehicle and primed cloth to us immediately, so we should get started while the irons are apparently in the fire, since this is the first time that we have been able to talk to the technical men in charge of the coating. I believe in the past it has, in general, been handled directly by the purchasing agent, and about all we knew was the reason for rejection.

I am sending you a sample of the cloth containing #44 which they indicated had too low gloss and produced a stiff cloth.

C. H. Adams
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