

INTER-OFFICE LETTER

FROM

Chicago

OFFICE

Paint Research

DEPT.

FOR Cleveland

OFFICE

DATE

December 8, 1970

MR. A. B. Holton

SUBJECT

Lead Content in House Paints

REFER TO LETTER OF

W. Gram
what do we
save in distribution costs
by having one primer

addition
DEC 14 1970

You have recently called my attention to the fact that there is a bill pending in Congress that would limit the lead content of all house paints, both interior and exterior to one half or one percent. You have asked that we investigate our history of exposures on house paints and come up with recommendations as to what our action should be. I have discussed this problem both with Don Householder and with M. Van Loo and I have reviewed some of our exposures.

It is our feeling that we should not attempt to have this bill stopped. Other companies, particularly Sears, have eliminated lead in exterior house paints for some time. In view of this and in view of the fact that we can make satisfactory house paints without lead content other than for drier and perhaps a little litharge, we feel that our attitude should be one of compliance as soon as possible. In my opinion we perhaps should recommend a six month period in which our major lines could be converted to lead free formulations and 12 months in which all of our Trade/Painter items could be so converted.

It is convenient in discussing this problem to break exterior house paints into three categories: primers, white topcoats, and colors. This kind of categorization will be used in the following discussion.

We probably have less real information on the performance of lead-free primers than we do on lead-free topcoats. However, we do have two or three years of experience with the alkyd primer B46 W 31 Hi-Level House Paint Exterior Undercoater. This is a lead-free primer except for driers and two pounds of litharge (which amounts to less than .5% Pb). This primer, which has a raw material cost of \$143.28, could be used as the Trade primer for both A-100 and SWP as it has been used in the Professional Coatings line. Such a move would save on RMC versus the A-100 undercoater A6 W 32 (\$150.00 RMC), but would lose a little on RMC versus the oil SWP Undercoater A2 W 2 (\$136.79 RMC). I do not have sales figures on these two products, A6 W 32 and A2 W 2, but perhaps we would break about even for RMC. Certainly it would reduce our inventories to have only one primer for these two major house paint lines.

You will recall that we wanted to make the move to alkyd undercoater for both A-100 and SWP for some time. However, we hesitated because of some exposure experience that indicated that the alkyd primer A6 W 32 showed more cracking under SWP than did the oil primer A2 W 2. However, our thinking was that this difference in performance was not due to the fact that one was an alkyd and one was an oil, but rather was due to the fact that the A6 W 32 had a considerably higher PVC/CPVC ratio than did A2 W 2. Actually, B46 W 31, the recommended primer, has a PVC/CPVC ratio close to that of A2 W 2. Our exposures on this lower PVC/CPVC ratio alkyd primer are not yet old enough to tell us whether we have in actuality improved the crack resistance by this move.

However, if we are forced by government legislation to remove the lead from our house paint primer, this is the move that would be indicated.

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Incidentally Devoe and Raynolds and Pittsburgh have had lead-free alkyd primers at least since 1964.

For white topcoats there are two distinct possibilities for lead-free formulations. The best recommendation from the standpoint of performance would be to shift our entire solvent based exterior house paint topcoat production to the west coast alkyd formulation, such as A2 W 28. Incidentally, this move would cost us about \$160,000 in extra RMC according to the sales figures for last year. In the white the difference is about 27¢ per gallon in RMC. For this difference however, we would get faster dry, better durability, less fading, eventual elimination of intercoat peeling (and considerably less of this problem in the meantime), stain free paints, better gloss retention, much less erosion, etc.

The other possibility would be to use a lead-free zinc oxide/oil formula similar to our Fume and Mildew Resistant White A2 W 87. Such a move would require some adjustment in the anatase rutile ratio in order to make a satisfactory gloss white and a move to all rutile of course, for a satisfactory trim and tinting white.

I was surprised upon reviewing our latest set of competitive solvent based house paints to find that as far back as 1964 most of our major competitors had already eliminated the lead from their trim and tinting white formulations. Many had also removed the lead from their gloss white formulations. The attached tables show a tabulation of the label analysis of this group of paints which was picked up from local dealers in 1964.

This set of paints has been on exposure, both under eave and completely exposed facing south, since 1964. There are no trends in performance that follow lead content. It would appear that the differences in dirt collection, mildew, and erosion are due to differences in rutile anatase balance rather than to either zinc oxide or lead pigment content. The erosion rates after 69 months of exposure completely exposed facing south are included for your information.

It is suggested that the Cleveland Laboratory house paint control ^{oil type} group now formulate both trim and tinting and gloss white versions of A2 W 87. The gloss white might well have one-third less anatase content than A2 W 87 since we have noted that A2 W 87 does tend to chalk more than A2 W 4. If there is any savings in such lead-free formulations, these savings in RMC should be put into the inclusion of Vancide PA (but only if such savings allow the inclusion of at least one pound of Vancide PA per 100 gallons).

Louie Ludwig has reviewed the color formulations in the A-100 line and finds no usage of lead pigments. It is suggested that the Cleveland Control group complete such a review for the solvent based paints such as SWP.

It also is suggested that the Cleveland house paint control group should now

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Mr. A. B. Holton

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Lead Content in House Paints

arrange to purchase one gallon samples of our major competitors' solvent based house paint lines so that a label analysis comparison can be made with 1970 formulas as has been done with 1964 label analysis.


Director of Paint Research

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Enc.

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1964 LABEL ANALYSIS

LEAD CONTENT IN HOUSE PAINTS
(Chalking Type)

<u>Lead Content</u>	<u>Erosion</u>	<u>Type of Paint</u>	<u>Supplier</u>
None (Except Drier)	7	Alkyd/Oil/Chlorowax (No ZnO)	Sears
None (Except Drier)	5	Oil (15% ZnO)	Sears
None (Except Drier)	6	Oil (16% ZnO)	Pittsburgh
None (Except Drier)	5	Oil (19% ZnO)	du Pont
None (Except Drier)	6	Soya Linseed Polyester (20% ZnO)	Devos and Reynolds
None (Except Drier)	5	Oil (23% ZnO)	Moore
None (Except Drier)	-	Oil (25% ZnO)	Sears
None (Except Drier)	4	Oil (29% ZnO)	Sears
7.3% Pb (in 15/85 PbZnO)	5	Oil	Glidden
11.1% BSiWL	3	Oil	Pratt and Lambert
14.7% BSiWL	5	Oil	Wards
37% 12/88 PbZnO	4	Oil	S-W
30% BCWL/BSiWL	5	Oil	National Lead
100% BCWL	8	Oil	National Lead

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1964 LABEL ANALYSIS

LEAD CONTENT IN HOUSE PAINTS

(Trim and Tinting Type)

<u>Lead Content</u>	<u>Erosion</u>	<u>Type of Paint</u>	<u>Supplier</u>
None (Except Drier)	6	Y ₅ Oil, 4/5 Alkyd (No ZnO)	Sears
None (Except Drier)	8	Alkyd/Oil/Chlorowax (No ZnO)	Sears
None (Except Drier)	8	Oil (17% ZnO)	Glidden
None (Except Drier)	4	Soya Linseed Polyester (21% ZnO)	Devoe and Raynolds
None (Except Drier)	6	Oil (25% ZnO)	Pittsburgh
None (Except Drier)	8	Oil (27% ZnO)	du Pont
None (Except Drier)	7	1/10 alkyd, 9/10 oil (29% ZnO)	Wards
None (Except Drier)	4	Oil (35% ZnO)	Pratt and Lambert
36% 12/88 PbZnO	6	Oil	S-W
30.7% BCWL/BS1WL	5	Oil	National Lead

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1964 LABEL ANALYSIS

LEAD CONTENT IN HOUSE PAINT PRIMERS

<u>Lead Content</u>	<u>Erosion</u>	<u>Type of Paint</u>	<u>Supplier</u>
None (except drier)		Soya Linseed polyester	Devooe and Raynolds
None (except drier)		1/3 oil, 2/3 alkyd	Pittsburgh
5.6% BSiWL		Linseed/estergum/phenolic	Benjamin Moore
7.8% BCWL 4.7% BSiWL		1/2 oil, 1/2 alkyd	Pratt and Lambert
13% BCWL		Oil	du Pont
23.9% BSiWL		Alkyd	Wards
24% BCWL		Oil	S-W
27.5% BSiWL		Oil/Ester gum	Sears
32.8 BCWL		Linseed/Tung/Rosin	Glidden
49.7 BCWL/BSiWL		Oil/Phenolic	National Lead

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