

FROM L. Nusser
CITY Cleveland

DATE September 18, 1972 FOR Dr. H. J. Kiefer

ANSWERING LETTER OF

SUBJECT FORMULATING FOR REPLACEMENT FOR
LEAD PIGMENTS AND NON-EXEMPT SOLVENTS
Meeting of September 6-7, 1972

cc: Mr. W. D. Kinsell
Mr. I. J. Foote
Mr. R. Haviland, #1
Mr. H. M. Werner
Mr. E. Romay
Mr. E. B. Euchner, DPJ
Mr. S. T. Bowell, DPJ
Mr. J. Southwick, DPJ
Mr. W. Tomc, DPJ
Dr. G. Pekarek, DPJ
Mr. G. Phillips, DPJ
Mr. F. G. Hidalgo, DPJ
Mr. H. Scott, DPJ
Mr. A. Adkins, Rdg.
Mr. J. Schlegel, Rdg.
Mr. E. W. Henschel, #1
Mr. K. T. Loye, #1
Mr. R. C. Andrews, #9
Mr. P. Gualano, #9
Mr. L. C. Johnson, #9
Mr. R. E. Minucciani, #14
Mr. J. C. Pedarre, #16
Mr. P. V. Robinson, DPJ
Mr. R. Shong, DPJ
Dr. J. Evans, DPJ
Mr. J. G. Kingston

Mr. J. W. Watson, Atl.
Dr. G. G. Davis, Tor.
Mr. C. E. Craft, St. Louis
Mr. R. B. Johnson, Mpls.
Mr. K. P. Steinkoenig, L.A.
Mr. W. B. Clyde, Portland
Mr. W. Mills, Montreal
Mr. W. O. Bayer, Balto.
Mr. L. Story, Vancouver
Dr. S. M. Hirsty, Gates
Mr. S. C. Kennell, Macco
Mr. H. P. Wertman

A meeting was held at the Research Center on September 6 and 7, 1972, to discuss what had been done within the Company and to lay plans for future work in the following areas:

- a. Replacements for lead containing pigments.
- b. Reformulation of Glidden vehicles to utilize Rule 66 exempt solvents.

Present: A. Adkins, Rdg.
J. Schlegel, Rdg.
E. W. Henschel, Central
K. T. Loye, Central
R. C. Andrews, Nubian
P. V. Gualano, Nubian
L. C. Johnson, Nubian
R. E. Minucciani, S.F.
J. C. Pedarre, Carrollton
P. V. Robinson, DPJ
J. Evans, DPJ
R. P. Shong, DPJ
J. G. Kingston, DPJ

GLD007143

The meeting followed the agenda.

I. Replacements for Lead Pigments

Copies of the following items were distributed to all in attendance:

- a. A letter by Don Jenkins (8/25/72) listing 22 End Use items, e.g. desks, lawn mowers, etc., which the Legal Department had declared exempt from the restriction on lead pigments, - or expressed in another way - could be coated with lead-containing paints. The last item listed was "Sanitary Gel-Kotes." Some present took exception. I am to try to obtain clarification or substantiation.
- b. A chart prepared by Mr. Kingston "Yellow Pigments under Investigation." This contained pigments reported by the Regions and DPJRC in response to Mr. Hidalgo's request for a report on products tested to date.
- c. A 4-page report by Mr. Pedarre "Replacement of Lead Containing Pigments." This contained information on pigments from Imperial, Hoechst, American Cyanamid, and Kentucky.

The Carrollton Laboratory has developed three 318 line bases (two yellows and a red) using non-lead pigments which can be used alone or in combination with each other to replace chrome yellows and moly orange. A comparable series in the 248 line will be completed within two weeks. Mr. Pedarre will send information on weight percentages of the non-lead dry pigments to match the lead ones.

The Research Center has just issued formulas for a light yellow (EGL-73015), a medium yellow (EGL-73016) and an orange (EGL-73017) in the 294 line quality for Gel-Kotes using non-lead pigments.

Mr. Henschel suggested offering iron oxides (at lower cost) for customer consideration.

San Francisco recommended trying Chemetron's RT5000 Saugatuck Red. They are working with Cal Ink on lead-free pigments in 100% N.V. polyester vehicles.

Research Center will issue a report on exposures on replacement pigments by Mr. Tomc's group.

A program is in progress in Mr. Tomc's lab on replacements for lead pigments in metal primers. A comparable program on primers for wood is

GLD007144

being carried out on the West Coast. Reports from the two labs will be sent in to my office and will be distributed to all Regions from here.

Mr. Shong will supply me with data sheets on Halox pigments for distribution to all regional labs.

Mr. Andrews will report on what Nubian has done with the lead replacement pigments in the areas of coatings for coil and appliances and in lacquers.

Mr. Kingston explained that in writing up new formulas (a) if lead is present as a constituent show the calculated amount, and (b) if no lead is added as an ingredient, mark the Pb block of the formula "-.06%."

It was agreed we should have a standard expression for formulas and production slips for lead-free formulas such as "use only the shading bases listed on the formula. Use no lead pigments for shading." The idea of special marking of containers for lead shading bases was also recommended. I am to present both suggestions to Mr. Werner for consideration by the Quality Assurance Group.

II. Reformulation of Glidden Vehicles to Utilize Rule 66 - Exempt Solvents

We reviewed each resin listed on the chart I had prepared "Glidden Industrial Vehicles - Status vs. Rule 66." A copy of the revised chart, incorporating the additions and corrections made at the meeting, is attached. The chart will be re-issued from time to time as new developments occur.

Mr. Robinson recommended Lithium Ricinoleate as a replacement for lead as a catalyst. Mr. Minucciani reported seeds occurred when Li catalyst was used in a resin containing triphenyl phosphite. Mr. Loye has had good results using Li (20% Lithium Tenchem) (C-585) at a level 8 times that of the lead it replaced.

Mr. Robinson's group at DPJRC will work on the following vehicles to develop a recommended Rule 66 exempt solvent combination, but the Regional labs (as shown on the "status" chart) will do the actual reformulation:

V-1127 - Nubian
V-1537 - Nubian
V-2301 - Central
V-7601 - Central
V-2072- Nubian
V-2302 - Reading

GLD007145

We discussed a series of questions concerning general procedure:

- a. The priority of conversion of the selected vehicles at each laboratory will be determined locally.
- b. Obtaining the solids portions of the resins out of production reactors can obviate the need for cooking lab batches. Reading has done this in some cases.
- c. The solvent computer program (SCOMP) developed at DPJRC was described and demonstrated by Dr. Wilkens and Mr. Scott. This should be of real value in developing starting point and unusual solvent combinations.
- d. Scaling up from lab batches will vary with time, experience and complexity of the formula. Sometimes it is valid to go directly into a large reactor; on other occasions small pilot batches should be made first.
- e. New exempt formulas should state the composition of the solvent portion, item by item.
- f. Reformulations of existing vehicles to exempt solvents should be assigned new formula numbers and also an X-suffix to avoid any error in mistaking an exempt for non-exempt and vice versa. This was an unanimous recommendation.
- g. Reformulation of existing coatings to exempt solvents should likewise be assigned new formula numbers and an "X" suffix.
- h. As a general rule the exempt formulas should be made with solids as high as practically possible to give the formulators maximum freedom in selecting the free solvents to fit the conditions of method of application, cost, flash point, etc., that may be specified in the end product.
- i. The Regional labs will request literature from the solvent suppliers in their areas on the exempt solvent blends they are offering. I shall contact the Cleveland area suppliers. This information will be consolidated and distributed to all. We need this data to know what our customers are using as reducers and/or what we might recommend to them.

The meeting should prove to be valuable to all. It was arranged primarily

GLD007146

September 18, 1972

at the request of the Technical Directors and the chemists directly involved, to exchange experiences, questions and ideas. It provided an opportunity for them to get a better grasp of what has been accomplished so far, what facilities are available at the Research Center to help them, and to utilize the Western Region's experience in living with Rule 66. It should help immensely in minimizing duplication and in imparting to the regions a feeling of participation in the guidance of the total effort.

LN

LN:ed

L. Nusser

GLD007147