



STONER-MUDGE, INC.

GRANT BUILDING

PITTSBURGH, PA.

November 13, 1934.

Mr. Robert E. Kehoe,
University of Cincinnati,
Cincinnati, Ohio.

Dear Mr. Kehoe:

We are writing you at the suggestion of Mr. William P. Yandt, of the Bureau of Mines, in Pittsburgh. We have been in touch with Mr. Yandt on the more or less academic question of whether a small content of lead monoxide would be detrimental to health when present in enamels used for the interior of food container caps. It is Mr. Yandt's opinion that the amount of lead present would not be considered a hazard due to the fact that it is present in extremely small quantities and is, furthermore, ground into the vehicle, which happens to be Vinyloid resin. Each particle of lead monoxide is apparently surrounded by the resin because an iron cup may be coated with a clear solution of the resin and this may be subjected to the action of acid solutions without any attack on the lead. The actual amount of lead present in - let us say, the coating on a 2" diameter tin cap would be between one and one and a half milligrams.

It is my impression that the human body can assimilate one milligram of a lead compound per day without detrimental effects on the health. The lead in this coating is, of course, not in an assimilable condition, and even if it were, it is entirely surrounded by an insoluble vehicle which is not affected by acid and alkali attack. If it was thought that there would be any danger to the health from the use of this enamel in this respect, a coat of clear resin could be deposited on top of the enamel as still further precaution against contact of the lead with food.

We might mention also that the pigment in this enamel would be titanium dioxide in the proportion of about twelve of this pigment to one of lead monoxide. The amount of lead present, therefore, in a given area of film is extremely small.

Mr. Robert E. Kehoe

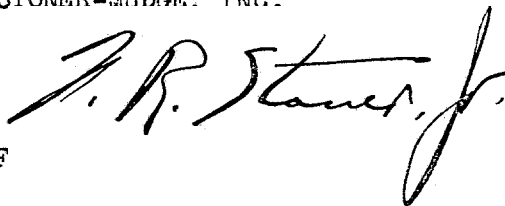
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November 13, 1934.

Mr. Yandt felt that you would be willing to give us your opinion in this matter.

Yours very truly,

STONER-MIDGE. INC.

A handwritten signature in cursive script, reading "A. R. Stoner, Jr." The signature is written in dark ink and is positioned below the typed name "STONER-MIDGE. INC.".

FRS:JK

F

November 20, 1934

Mr. F. R. Stoner, Jr.
Stoner+Wudge, Inc.
Grant Building
Pittsburgh, Pa.

Dear Mr. Stoner:

I believe it would be possible for me to give an opinion on the questions raised in your letter of November 13th if you would give me a little more information. I should like to know a bit more about the composition of the material in question, especially with regard to its lead content. For this purpose it would be necessary to know the upper and lower limits of the lead concentration. If there is available any other information as to the observed effect of acid solution, etc. on the material, I should like to have the data.

In the second paragraph of your letter, you state that it is your understanding that the human body can assimilate approximately one milligram of a lead compound per day without detrimental effects. I believe this is an extremely questionable statement for it is my opinion that lead poisoning is very likely to develop in a certain percentage of individuals who absorb lead in these quantities. The average lead ingestion under conditions of modern American life is now approximately 0.25 mgs. per day. Most of this is not absorbed. However, if an additional milligram per day were to be added to this, and if there were any promise of the actual absorption of a considerable proportion of this, in my opinion it would represent a serious hazard. Obviously the degree of danger would depend upon the actual amount taken in, and more particularly the proportion absorbed into the tissues. There is a very definite suspicion attached to the use of containers and other substances which come in contact with food if they have more than a minute lead content. Accordingly, I should not wish to express an opinion on this subject until we had at hand such information as would enable me to arrive at a fairly sound conclusion with regard to the possibility of absorption. I might point out to you also that quite apart from the actual facts in the matter as regards absorption, the manufacturers and distributors of lead-containing products have to consider their liabilities which may develop out of misconceptions of the hygienic significance of their products. However, if you will supply me with the information which I have

Mr. F. R. Stoner, Jr.

requested, I think I can give you an opinion as to the probable effects of the use of the material you describe.

Very truly yours,

RAK:IS

Robert A. Kehoe, M.D.