THE PROCTER & GAMBLE COMPANY

WINTON HILL TECHNICAL CENTER 6000 CENTER HILL ROAD CINCINNATI 24, OHIO

May 28, 1964

Dr. Robert A. Kehoe
University of Cincinnati
The Kettering Laboratory
College of Medicine
Eden Avenue
Cincinnati, Ohio, 45219

Dear Dr. Kehoe:

Thank you very much for your letter of May 26, 1964, concerning the contribution to the total intake of lead that Crest makes in the case of a small child who may swallow appreciable quantities of the paste. You need not apologize for the delay - we were in no particular hurry for a prompt answer.

I can understand and appreciate your position that any additional intake of lead that is not really necessary for the health and well-being of an individual should be looked at critically and avoided if possible. Any other position could lead eventually to approaching the intake beyond which lead begins to accumulate in the body. As you pointed out, a change in the package, difficult though it may be, is the only answer that would satisfy everyone.

From the general tenor of our conversation in April, I have had little hope that we would be able to convince Swiss government officials that they should change their attitude toward the marketing of Crest in Switzerland.

We do appreciate the time you have taken to talk to us, to think about our problem, and to outline your position by letter so clearly.

Very truly yours,

Donald Wade

Donald Wade
Manager, Professional and
Research Services for the
International Divisions

DW:llh

KE 0006065

May 26, 1964

Mr. Donald Wade, Manager
Professional and Research Services for
International Divisions
The Procter and Gamble Company
6000 Center Hill Road
Cincinnati, Ohio (45224)

Dear Mr. Wade:

I trust that you have not abandoned all hope of hearing from me in reply to your letter of April 17. I am most apologetic for the delay, but I have found it impossible, previously, to give serious consideration to the matter at issue. During the past several weeks I have, indeed, been hard-pressed.

The data which you have given to me, with which I cannot find fault, would seem to have provided the answer as to the significance of the contribution made by the use of toothpaste of this type, in this container, to the total intake of lead by the small child. On the basis of your data and calculations, the maximum quantity of lead which is likely to be swallowed per day (probably not on all days), will be of the order of 20 micrograms. This is the equivalent of the quantity of lead which is taken in daily by the average adult who drinks a liter of the water from the taps in his home or place of work. Certainly no one would argue that this is a dangerous or potentially dangerous contribution.

The real problem which is involved here, as I see it, resides on the fact that this contribution, regardless of its intrinsic insignificance, would not be regarded as necessary, in the sense that the contribution made by food is necessary. It can be argued, with some justice, that every source of lead which contributes regularly to the intake of lead by human beings, should be scanned critically and reduced to the minimum, or, if seemingly unnecessary, eliminated entirely. This seems to be the only way of maintaining the safety of the population against the ingestion of undesirable quantities of lead. (The evidence is that the quantity of lead taken in by the average adult in our general population is of the order of 0.25 mg. per day, and that the average quantity taken in by the unusual individual who eats unusual quantities of somewhat unusual foods may be of the order of 0.42 or perhaps 0.45 mg. per day. The maximum quantity that can be taken in daily with the food and beverages by the adult, without any risk of accumulating significant quantities of lead in the body appears to be of the order of 0.60 mg. per day. The margin of safety is not large, and thus one recognizes the necessity of avoiding the combination of a further series of minor contributions, so as to maintain a reasonable margin of safety in this regard.)

I should say that your Company's product, Crest, should be freed of

this stigma of risk at the earliest feasible time, not so much on account of any immediate danger involved in its use (which clearly is negligible), but in order to avoid liability for an alleged risk, on the one hand, and also to comply with the general policy which I have enunciated above. I would consider it wise to find some type of container that would not pose this problem of contamination with lead, and to make a concerted effort, within the limits of reasonable cost, to do so as promptly as possible.

My advice in this matter may seem to be inconsistent with my view of the insignificance of the potential hazard involved in the continuing use of the tube in which Crest is now distributed. The fact,is, however, that the manner in which I view this situation will not be acceptable to many persons among the laity and among persons in various positions of public responsibility, in this country and abroad. It has been difficult, if not impossible, to combat the idea, which is firmly fixed in the minds of many people who do not think in quantitative terms, that lead is a poison, which, if dangerous in adequate dosage, must be somewhat dangerous in lesser dosages.

It is, of course, very easy for me to advise you to find a container which is acceptable otherwise, and does not yield lead as a contaminant. This may prove to be difficult but I hardly think it will be impossible for technical people of such competence as has been demonstrated in other matters, by your associates in the Procter and Gamble Company.

Cordially yours,

RAK:vr

Robert A. Kehoe, M.D.

KE 0306067

Donald Wade
P&G in Switzerland
lead containers
lined lead tube - crystalline wax
2 100%
2,000
20 002
dd
HW Stevenson

ER & GAMBLE COMPANY

6000 CENTER HILL ROAD CINCINNATI 24, OHIO

April 17, 1964

time to review our problem with us last Monday; appreciated your comments and suggestions.

In answer to your first question, the Crest tube is the standard lead tube of commerce, with a composition about as follows:

Lead	ca. 97 %
Antimony	2.75
Tin	0.3 - 0.5
Copper	0.03 - 0.06
Arsenic	0.05
Sulfur	0.003

The tubes are 0.009" thick, are wax lined, and have plastic necks and caps.

As we pointed out, the lead content of the dentifrice varies with storage temperature and with degree of manhandling of the tube. We believe that a figure of 20 ppm (20 micrograms/gram) is a reasonable maximum value.

Very small children (3 to 5 years of age) swallow varying amounts of dentifrice during normal toothbrushing. A few average as much as 500 mg./brushing, with the majority falling below 300 mg./brushing. If the higher figure is taken, and if the child brushes his teeth twice a day, the total daily intake would be 1 gram of dentifrice, or 20 micrograms of lead. The level of intake and the frequency of brushing are both given high estimates here; a much more likely daily intake would be 300 mg. of dentifrice, or 6 micrograms of lead. (Swallowing of toothpaste also decreases as the child gets older.)

With these figures as a guide, we would be very much interested in your views as to the safety or possible hazard associated with the use of this product. If you have any further questions, please feel free to call me at any time at 562-7151.

Very truly yours,

Donald Wade

N 7470.02

Donald Wade
Manager, Professional and Research
Services for International Divisions

THE PROCTER & GAMBLE COMPANY

WINTON HILL TECHNICAL CENTER 6000 CENTER HILL ROAD CINCINNATI 24, OHIO

April 17, 1964

Dr. Robert A. Kehoe
The Kettering Laboratory
Eden and Bethesda
Cincinnati, Ohio, 45229

Dear Dr. Kehoe:

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Very truly yours,

Donald Wade

N 7470.03

Donald Wade
Manager, Professional and Research
Services for International Divisions

MH 0006069

April 25, 1964

Mr. Donald Wade, Manager
Professional and Research Services for
International Divisions
The Procter and Gamble Company
6000 Center Hill Road
Cincinnati, Ohio (45224)

Dear Mr. Wade:

I've been "swamped" or out of town since your letter of April 17th arrived on my desk, and now (tomorrow) I must go to Philadelphia to a meeting of the American Industrial Hygiene Association in which I am fairly heavily engaged, until next Friday.

As soon as I can get at your problem, I shall give it careful consideration, and write to you in some detail. This is just to let you know that I am not neglecting it.

Very truly yours,

RAK:vr

Robert A. Kehoe, M.D.

Dictated but not read.

KE 0006070

N 7479.04