



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

FABRICS & FINISHES DEPARTMENT

Wilmington, Delaware
February 7, 1940

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DR. J. H. FOULGER
DIRECTOR HASKELL LABORATORY

TOXICITY OF LEAD IN PAINTS ON
CHILDREN'S TOYS AND FURNITURE

This will acknowledge your letter of January 23rd, on the above subject. After reading your letter, and reviewing this matter with our Industrial Sales people, it is our conclusion that there is not a sufficient amount of business in sight, in a special finish for children's toys and furniture, to warrant an expenditure of \$2000.00 to further check the toxicity characteristics of diphenyl guanidine.

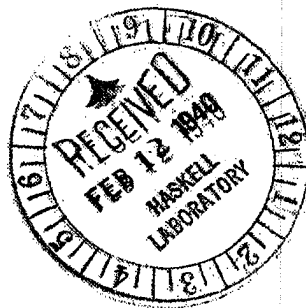
The amount of diphenyl guanidine that we use would be very small since it would be substituted as a drier and not as a pigment. The large quantities of lead, that have been used in the past in paints for juvenile toys and furniture, have been present in the form of lead pigments. As far as our business goes, these lead pigments have been pretty well eliminated, so that the toxicity hazards of such products as we now sell, have been pretty well minimized. Such lead as may be present is in the form of soluble lead drier, which is maintained in practically all products at such a low percentage as to be acceptable to most of the specifications which have recently been laid down for this class of paint.

In view of the above, we do not believe that a study of the type that you have in mind would be approved by our management.

JOHN MARSHALL

By: 
H. H. Hopkins

HHH/vw



Copy to: Dr. G. H. Gehrman, Director
Medical Division

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AJF

January 23, 1940

JOHN MARSHALL
FABRICS AND FINISHES DEPARTMENT

ATTENTION: H. H. HOPKINS

THE TOXICITY OF LEAD IN PAINTS ON
CHILDREN'S TOYS AND FURNITURE

In recent months increasing attention is being paid to cases of chemical poisoning in young children resulting from their swallowing lead pigments which they have chewed off toys and nursery furniture. While this hazard has existed for many years, it is recently being brought to general public attention and may well lead to definite statutory regulations with regard to the nature of pigments employed in preparation of toys and children's furniture.

A few months ago you suggested that diphenyl guanidine might be substituted for lead in certain types of finishes. We have no information on the toxicity of diphenyl guanidine itself. Certain guanidine derivatives and guanidine itself have, from time to time, been considered to cause disturbances of the nervous system and perhaps to be involved in severe gastro-intestinal upsets of children during the summertime. In this latter case the guanidine derivatives are considered as products of abnormal metabolism in the body.

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If it could be proven that diphenyl guanidine is not toxic or less toxic than lead when taken in the mouth there would seem to be open a very good field for the use of pigments containing this compound in place of lead in the painting of children's toys and furniture.

I would suggest that if a possible market for pigments containing diphenyl guanidine exists the problem of the toxicity of diphenyl guanidine be studied in the Haskell Laboratory. In brief, the method of study would consist of the feeding of the diphenyl guanidine to suitable laboratory animals and the study of any signs of toxic action upon these animals (including possible action upon blood cells and blood pigment) and, finally, careful micro-pathological study of the tissues of the animals used in the experiment to determine whether any organs of the body are damaged. Such an experiment would probably last about four months and would cost approximately \$2000.00.

I would be very pleased if you would consider this matter and inform me as to whether such a study could be approved.

HASKELL LABORATORY OF
INDUSTRIAL TOXICOLOGY

John H. Foulger, M. D.
Director

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