

January 7, 1955

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HOUSE PAINTS CONTAINING PHENYL MERCURY OLATE

Following the visit to Haskell Laboratory by Mr. Stuart Graves and yourself, we have discussed the problem presented by the inclusion of phenyl mercury oleate in house paints and have the following proposals to present for a study of the hazards involved in the use of this material.

We recommend testing the following four products:

1. Polyvinyl acetate house paint P-100-E-23523
2. The above product with the phenyl mercury oleate omitted.
3. A typical oil-base house paint containing 0.2 per cent phenyl mercury oleate
4. The product (3) with the phenyl mercury oleate omitted.

We should like to test these four paint products for acute toxicity by oral administration to rats. This would give us a rapid test in which it is possible that significant differences might show up and which would give us a toxicity range on which to base the rest of the program.

We should then like to test the four paints on rabbits using skin application with repeated daily exposures. The amount of chemical to be applied at each exposure would be an approximation of the amount which it might be reasonable to assume could be easily spilled on the hands of a painter. A minimum of four animals per test chemical would be required. The absorption and accumulation of mercury in the livers and kidneys of test animals would be determined. Half the animals would receive five applications (one per day) and then be sacrificed, whereas the other half of the animals would receive ten applications before sacrifice. Determination of the mercurial levels in the livers and kidneys would enable us to obtain a picture of the build-up of mercury levels in the organs on repeated application.

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The above tests would be carried out using wet fresh paint. We feel it also advisable to determine the possible primary irritation and sensitization properties of the dried paint film. We propose to do this by applying paint to an ordinary "Band-Aid" bandage, allowing the paint to dry to a film and then applying the bandage to the skin of human volunteers. A pilot test could be carried out using about ten volunteers from our own laboratory. This would enable us to determine whether or not a severe reaction results so that we could later do a larger scale test employing 200 volunteers. We feel that the larger number is advisable to obtain a significant result.

We estimate that the cost of the work outlined above will be about \$6,900. The following table will explain the way in which this total cost figure has been obtained:

<u>Test</u>	<u>Cost per Compound</u>	<u>Costs for Compounds</u>
Approximate lethal dose (oral) with rats	\$ 600	\$ 2,400
Skin absorption test with rabbits - chronic repeated exposures	1,000	4,000
Primary irritation and sensitization pilot test using dried paint film on bandages with ten human volunteers	--	<u>500</u>
Total		\$ 6,900

The skin "patch test" on 200 human volunteers will cost an additional \$2,000.

We shall be glad to answer any questions you may have concerning these proposals. It is our recommendation that the entire program be undertaken in order to obtain an idea of the potential hazard from paints containing phenyl mercury oleate.

Very truly,
J. W. Williams

Jonathan W. Williams
Assistant Director

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