RESEARCH DEPARTMENT - PHOSPHATE DIVISION

SHORT FORM REPORT

Report No. 2949

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TITLE: Compatibility of Various Aroclors and Santoxaw M in Mineral Oil.

INTRODUCTION: Presto Recording Corporation, Paramus, New Jersey is interested in the compatibility of Aroclor 1254, 1262 and 5460 and the solubility of Santowax M in a light, low viscosity mineral oil. This work was done to furnish this data.

SUMMARY: Mixtures of 90% Aroclor 1254 and 1262 in 10% oil and 10% Aroclor 1254 and 1262 in 90% oil were made in beakers. All of these mixtures were completely miscible.

The Aroclor 5460 and Santowax M solutions were made by adding the solid material to the oil in a beaker equipped with an agitator and mounted on a hot plate. Heating was necessary to dissolve any appreciable quantity of either the Aroclor or Santowax. The Aroclor is apparently miscible in all proportions at elevated temperature (100-110°C). The solution became saturated at 41% Santowax M at about 86°C.

CONCLUSIONS:
1. The Aroclors tested are completely miscible with the oil under the conditions of these tests.
2. The Santowax M is very slightly soluble in the oil at room temperature, and increases to about 41% soluble at 86°C.

RECOMMENDATIONS: It is recommended that this data be supplied to the Sales Department for transmittal to the customer.

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EXPERIMENTAL DATA: Notebook references: 96769

Materials:		
	Aroclor 1254	Lot 1932
	Aroclor 1262	Lot R-16
	Aroclor 5460	Plant Grade
	Santowax M	Lot 139
	Klearol	L. Sonneborn Sons, Inc. Chicago, Illinois

Aroclor in Klearol:

10% Aroclor 1254 90% Aroclor 1254	Compatible at 25°C
10% Aroclor 1262 90% Aroclor 1262	Compatible when mixed at 50°C No separation upon cooling to 25°C

Aroclor 5460 in Klearol

Solubility, % Aroclor	Temp. °C.
< 0.7	25
> 50	60
70	90
75	100
85	110

Santowax M in Klearol

Solubility % Santowax	Temp. °C.
< 0.6	25
9.4	61
40.6	86

DISCUSSION: The Aroclor 1254 and 1262 were miscible in the oil in the proportions tested, and no doubt then would be completely miscible in all proportions. It was necessary to warm the 1262 to about 50°C to effect solution, but no separation occurred upon cooling to 25°C.

The Aroclor 5460 dissolved rather slowly at room temperature, but went in quite readily as the temperature was increased. Probably more than 85% would have dissolved at 110°C, but the solution was becoming quite viscous. No crystallization or separation occurred upon cooling at any stage of solution, however.

The Santowax M is only slightly soluble at room temperature but increases in solubility quite rapidly as the temperature is raised above 60°C. At 86°C a solution of nearly 41% Santowax in Klearol was obtained. Since the melting point of the Santowax is about 87°C, the tests were not carried above this temperature. The Santowax crystallizes out readily upon cooling the solution.

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