

Cross Index: - Goodyear Rubber
Company
353 Line

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Memorandum Report #M-265:

100L RETURN TO MARSHALL LABORATORY LIBRARY

Philadelphia Laboratory
September 9, 1949

PLIOLITE S-5

"INDEXED"
REFERENCE COPY 80'53

NOT FOR CIRCULATION

Pliolite is a styrene-butadiene copolymer which is made and sold by the Goodyear Rubber Company. It is offered to us in competition to chlorinated rubber.

Summary and Conclusions:

Pliolite S-5 excels chlorinated rubber in paints for brushing and odor. It is nearly comparable for chemical resistance and promises a cost saving at equal build if settling proves satisfactory so that millbases can be made and do not have to be bought from Goodyear.

Ten gallons will be made up and given out locally for basement floors. If the tests are satisfactory, it will be recommended for replacement of chlorinated rubber. A project will be written to request funds for development of a line of colors and for field tests.

Details:

Application Properties:

Brushing of pliolite paints is better than chlorinated rubber paints and the lapping is equal. Both have excess flow. The chlorinated rubber paints have an objectionable odor which comes from cellusolve acetate solvent. The odor of pliolite paints (100% H-200) is better than the chlorinated rubber paint, but is still worse than regular interior architectural paints which seldom contain more than 10% of H-200.

Film Properties:

The films are about equally hard. Pliolite has better adhesion to steel than chlorinated rubber. Chemical resistance is as follows:

Alkali Sealing	Equal
Alkali Resistance 5% NaOH	Pliolite Slightly Better
Glacial Acetic Acid)	Chlorinated Rubber Slightly Better
6N H ₂ SO ₄ }	6 Hrs. " " "
.1N HCL }	No Failure in 6 Hrs.
Concentrated HNO ₃ 16N }	Equal
" H ₂ SO 36N } 30	Equal
	Minutes

Costs:

Pliolite has recently been reduced .05 per pound to .54/#; chlorinated rubber sells for .44/#. Due to a difference in specific gravity of the materials, the cost advantage is reversed when we consider volume.

Comparative Volume Costs

Pliolite S-5	\$4.70
Chlorinated Rubber	5.97

Costs of Paints

	<u>Volume Solids</u>	<u>Cost/Gal.</u>	<u>Cost at Equal Volume Solids</u>
353-808 Chlorinated Rubber	25.7 %	\$ 1.82	"
R-52444 Pliolite	27.	1.47	\$ 1.42

Equal volume solids can probably be obtained by the proper blend of unmilled resin with milled resin.

PHILADELPHIA LABORATORY

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