

QUARTERLY RESEARCH REPORT
PAINT, VARNISH & LACQUER LABORATORIES
THE GLIDDEN COMPANY
(JULY, AUGUST, SEPTEMBER, 1956)

GLD37091

N 2565

TRADE PRODUCTS
RESEARCH REPORT
JULY 1956

GLIDE-ON -- Most of our attention has been directed to continued evaluation of new vehicles and new combinations in order to improve upon our current Glide-On. Of greatest interest to the Company is the introduction of XM-54184, Glidden's own PVA into two colors of Spred Glide-On. It has been agreed that this vehicle will be manufactured at Cleveland and will be shipped in drums to the various plants as they need it to manufacture Aquamarine and Victoria Blue Glide-On. A second commercial batch has been made within the last week and to all appearances it is identical to the first batch run a number of months ago.

It is our belief that the use of this vehicle will bring about a distinct improvement in Glide-On with particular emphasis on lowered chalking and greater water resistance. The two particular colors chosen are the poorest in the line for chalk control and any progress which can be made to improve them will be of distinct help to the field. We will continue to watch our production very closely for any possible signs of adverse effects but through the pilot plant and the first production batch some months ago, we believe that we have countered most of the problems which have come up in connection with the use of Glidden PVA.

We have also attempted to make Spred Glide-On in a match for Spred Satin Flamingo. We find that we cannot do it without going to a new permanent red, costing some \$18.00 per pound. This would make the cost of this shade prohibitive and therefore we will probably not market such a color.

We have completed a review of the various homes painted by the Dewey & Almy Company with their various Everflex Copolymers as well as their PVA. Everflex BG appears at the present time to be the best of all the copolymers examined to date for control of chalking. The only failures encountered in the inspection trip were intercoat failures between coats of oil paint and only one small trace of intercoat failure where an Everflex paint was applied over a chalky oil paint. Exposures over wood surfaces were as old as three years and were in excellent shape and appearance. We are very hopeful that our own Glidden copolymer will prove to be the equal or superior to this material and therefore side by side tests are being evaluated on our exposure fences.

Considerable work is also being done with Geon polymers from B. F. Goodrich. Various special emulsion primers are being evaluated in an attempt to obtain improved adhesion.

SPRED SATIN AND ULTRA FLAT -- A very broad program has been initiated for re-evaluation of all of the various bodying agents and colloids available. We are also reviewing the processes used at the various plants to produce Spred Satin and Ultra Flat in order that maximum viscosity may be obtained. We are finding that the order of addition of various ingredients has a very important effect.

Along with the study of colloids we are investigating the effects of various inerts and flow agents to improve our application characteristics of both products.

A complete line of formulas has been issued for the manufacture of Spred Satin using Firestone PL-14 Latex. A tank car has been received at Reading and initial batches are under way. The only disadvantage we know of Firestone latex is an additional foaming problem over what we have in our present Satin.

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DRAMATONE -- We are attempting to reformulate Dramatones to improve the dispersion of the Ruby Red and Black and to prevent the hard settling which characterizes the Umber Brown, Ferrite Yellow, Red Oxide and Light Chrome Yellow. The other colors are satisfactory. Quite a number of dispersing agents and suspending agents have been tried to no avail. The current formulation made at a slightly heavier body appears to be much more satisfactory as far as the settling is concerned.

HOUSE PAINTS -- A number of formulas have been agreed upon as an outcome of our work during the titanium shortage. We have found in some instances that we can maintain quality and reduce cost through the use of new pigment combinations.

Current demand has forced us to commence experimental manufacture of Flat House Paints. Two such products have been made up for Minneapolis. They will be applied to the various lumber yard offices of one of Minneapolis' principal customers. They are largely based upon experimental products initiated by the Eagle-Picher Lead Company. This vehicle will consist of bodied linseed oil fortified with long oil linseed alkyd.

INTERIOR PAINTS -- Our Pli-Namels have been reformulated to permit a pebble mill grind and a dissolving of the Pliolite resin by our own plants. We find that the savings will be close to 20 cents per gallon of Pli-Namel produced from the dispersion chips previously purchased.

A new high hiding Speed Wall Semi-Gloss has been formulated in the quality of our regular Y-4600 line Speed Walls. This will come closer to giving absolute one coat hiding with this material. The color department is checking the possibility of using it in the current Dramatone systems. A 100 gallon trial batch has been completed for determination of field acceptance.

We have been investigating two qualities of enamel for packaging as Japalac Spray Enamel. Most of us have been convinced that our present Japalac is the best all around product we have ever seen put up in spray cans. However, the four hour dry is slower than the current qualities being pushed by the dealers. It has been decided to use a VCM quality which is out of dust in ten minutes and hard enough to handle in 20 minutes. Six additional colors are now being packaged for testing by our supplier of spray cans.

BASIC RESEARCH -- Our basic research has been participating in the investigation of new bodying agents along with work on new preservatives for use in Spred Satin. Quite a number of our foreign licensees have trouble with iron staining due to reactions with our present chlorinated phenol type of bacteriacide. The use of phenol mercuric acetate in its place requires a complete over-hauling of the Spred formulation.

A great deal of work has also been done on efflorescence. As yet, this work is incomplete.

P. C. Herzog

PCH/lms
8/3/56

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Notes up to 1956
GLIDE-ON

Continued attention has been given the evaluation of new latexes in various pigmentations. Mr. ~~Bowell~~ reports exceedingly interesting and well confirmed differences in inerts causing blistering in various formulations. Some inerts cause blistering at high pigment volumes ~~and in the low pigment volumes~~. Others are exactly the reverse. *NOT ALL INERTS CAUSE BLISTERING AT ALL VOLUMES, SOME AT ALL VOLUMES*

At the present time there are five major qualities which are regarded as showing sufficient durability over oil primed wood that test houses should be painted as soon as possible. It is regrettable that we cannot as yet recommend these systems without the assistance of a good exterior oil primer like our Endurance Basecoat. Considerable study is being given this particular aspect of the problem which we believe is tied up with the degree of water repellancy of the films. Not included in the list of five proven polymers is our own Glidden Copolymer which is being given considerable attention. Mr. ~~Bowell~~ is using this copolymer and building a special formulation around it to develop the maximum value from this material.

Mr. Rode is attempting to introduce this copolymer into the tried and proven Glide-On formulation. We anticipate that it should be a definite improvement in Glide-On over current vehicles and more immediate use could be made of it in this way. The ultimate in improvement might come from Mr. ~~Bowell~~'s work as a still further refinement and outstanding product.

Just as quickly as preliminary work can be completed we would like to proceed with test houses on one or both of the systems in order to catch up with the other vehicles now being exposed. We believe that the new Emulsion Vehicle Research Laboratory has done an outstanding job in development of this material in such a very short period of time by comparison with the years which our outside suppliers have had.

SPRED SATIN AND ULTRA FLAT

Reformulation of all of the Satin colors to permit the use of Firestone PL-14 Latex has continued. Our first tank car has been used successfully and close examination of the samples to date has produced no undesirable features. We look forward to the Firestone people being one of our major latex suppliers.

We have run into considerable trouble during this past month with the bacterial spoilage of our Dow Latex. This is a recurrence after our previous troubles this summer. Dow had claimed that all latex being shipped was sterile and no further decomposition would be noticed. However, Cleveland, New Orleans and Atlanta all have spoiled latex on hand which was transmitted directly into carefully pasteurized tanks. Some of this is being returned to Dow for reclamation rather than risk contamination of some of our paint. We are working closely with the Dow people on the elimination of this trouble and are taking steps to treat each tank car as it is received.

A recheck has been completed upon the current formulations of Ultra Flat. Productions as old as eight months produce very satisfactory paints of usable consistency. Only two batches out of 25 have shown any sizable drop in viscosity but would still be usable. Four out of the 25 claimed better than 10% but are still in a reasonable range. All the rest remained constant. While our foam control has improved considerably it is still not as satisfactory as we would like.

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A very extensive series of trials using Glidden PVA Copolymer as the basis for better adhering interior paints has been initiated. All facets of the adhesion problem are being studied including the effects of hiding pigments, inerts, emulsifiers, colloids, as well as blending with other copolymers and the effect of "keying" agents.

At the present time a superior adhering paint could be made from Methocel combinations with styrene acrylic polymers. We would sacrifice flow, stability, ease of cleansibility, as well as going to a much more costly combination.

A considerable portion of the laboratory time has been spent on preparation for the National Managers' Meeting, as well as demonstrations for the local Sales Meetings.

We are facing a very serious reduction in our laboratory staff this month when five of our people report back to college and one man transfers to sales. Replacements have not been found as yet.

DRAMATONE

Preliminary reports indicate that a new version of Dramatone is possible which will prevent the current hard settling which has plagued us in four out of our nine shades. The change will necessitate a roller mill grind because of the extra body. Some definite progress has also been made when improving the dispersion of Ruby Red and Black.

HOUSE PAINTS

A plant batch has been completed of our Endurance Basecoat using half of 45X lead silicate to replace half of lead carbonate. Results were satisfactory except that the viscosity came out too thin and is not explainable. To verify this result we shall have to run another test batch.

We have decided to adopt the Reading formulations for Flat Shingle and Shake Paints. It varied only slightly from the Cleveland formulations and Reading has had several months of extra experience with their product. We did not choose to market the San Francisco product nationally even though they have had far greater experience with it and it appears fully satisfactory for the Pacific Coast Region. It is felt here that the San Francisco formulation would lack stability sufficient for national marketing. We have no objection to San Francisco retaining their present line for their own use. We hope to put out this Shingle and Shake Paint material on numerous structures as a field test for flat house paint. In the meantime, further evaluation will be completed on both the Cleveland and Reading formulations for this latter usage.

INTERIOR ENAMELS

A considerable cost savings and quality improvement has been completed in our Pli-Namel line. This has been accomplished through use of pebble mill grinds rather than dispersion bases. At this writing detailed costs are not available.

We have completed our formulations on white and five colors of a very special fast dry enamel of VCM quality to be packaged in Japalac spray enamel cans. Our first plant batches have been successfully packaged and the balance of the colors will be loaded shortly.

Our laboratory is investigating the potentials of several iso-cyanate modified oils in exteriors as well as for general interest. Dr. Kiefer has passed along some very interesting aluminum soap containing oils for general examination and determination of interest.

We are attempting to develop an Epon Alkyd for Florenamel so as to arrive at an outstanding quality for this product. Florenamel is one of the few items in our line that are not the equivalent to the best competitive products.

P. C. Herzog

PCH/lms
8/31/56

GLD37096