

PRODUCT DEVELOPMENT REPORT
INDUSTRIAL LABORATORY #2
FEBRUARY 1955

C-11

Primer for use on Steel Pipes under hot melt coatings

Hot melt coatings as applied to underground pipe will not adhere well to the conventional type of oleoresinous or alkyd primers. It makes little difference whether the primers are fresh or aged before coating with hot melt materials - adhesion is still poor. In the past we have formulated such materials as 56-R-10 and 99-Y-8 for this type of work. Two new primers have been formulated for Dresser Industries for use on steel pipe. GL-65112 is a red lead, red oxide primer while GL-65113 is a red oxide zinc oxide primer. These primers are now undergoing tests by the customer. Material is reduced 3 to 1 with xylol for spray and it dries in 1 - 2 hours for handling and overnight for recoating.

Freight Car Paints

A drum of hot spray freight car paint 94-R-43 was tested by the Erie Railroad with very satisfactory results. The customer liked the way 94-R-43 worked on the job better than the competitive paint he has been using. We are now making a 15 drum batch for this customer and much more business should result with this material.

VCM Quality Gloss Black

A Black Air Dry Enamel GL-65214 was formulated for Tecumseh Metal Products for use on air conditioning compressors. This enamel is reduced 2 to 1 with xylol for flo coating and is force dried 2 1/2 minutes at 190° F. Various tests conducted by the testing laboratory have found this material to be as good or better than a competitive product in all requirements.

Baking Enamels

GL-65079, Red; GL-65080, Blue Green Metallic and GL-65082 Green Metallic Baking Enamels have been approved by Clinton Machine for use on outboard motors and sizable quantities have been supplied. These enamels are GRV-2133 quality modified with 4 oz/gal. of VM-379.

Seafoam Green 58-G-1037-A and Fiesta Yellow Baking Enamels have been formulated for H. L. Moore Co. in NRV-2286, VM-732 quality for use on desk calenders. These materials reduce 4 to 1 with S-6 for spray and bake 5 minutes at 325°F. GL-64980 is a Green Metallic Baking Enamel for Beaver Pipe Tools made in GRV-2139 quality. A 50 gal. initial batch was made for this customer.

Baking primers were formulated for metal office furniture approximately matching submitted metallic panels:-

- GL-64945 - Mist Green Semi-Gloss Baking Primer
- GL-64946 - Desert Sage Semi-Gloss Baking Primer

These primers are reduced 4 to 1 with S-23 and baked 15 minutes at 350°F. The metallic enamels are to be applied over these primers. 50 gallon quantities have been made.

GLD37415

TRADE PRODUCTS LABORATORY
PRODUCT DEVELOPMENT REPORT
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SPRED PRODUCTS

We have virtually completed the change to rutile titanium in all Spred Satin tints. The savings in cost are running about the same as reported last month and should result in substantial increases in division profits.

Definitely contributing to the cost savings is the spectrophotometric control on shading. We are using production batches shaded to the exact color and intermix strength desired by Mr. Smedley. This is then run on the spectrophotometer to establish a permanent standard. We are finding that the variations between batches that are shaded spectrophotometrically are considerably less than the average variation resulting from visual shading. In addition, the matching under all lighting conditions should be vastly improved.

In connection with Spred Glide-On, we are concentrating our efforts to improve wet adhesion especially to wood surfaces. Our field test jobs have been re-examined and in almost every instance continues to look very good. We have at least one case where excessive moisture from behind the film has created some spalling effect on the masonry surface beneath the Glide-On causing a peeling condition.

Field tests on the new Texture Base continue to look promising although most of this volume is for use as a stipple coating. It may be mentioned that where exceptionally heavy pattern effect is desired that Spred Patch may be mixed with Spred Satin in equal portions or more to permit the application with the flow of exceptionally heavy films. We are continuing work on a special Spred Mastic which will permit use with Glide-On so as to act as a filling type of undercoat.

P. C. Herzog

SPECIAL PRODUCTS LABORATORY

ULTRA FLAT -- The problem comes up periodically of submitting a low cost product on bids for TT-P-0029. This specification is tentative in that it is not in its final revised form. However, it is not expected that Ultra Flat will meet the full requirements, particularly the cleansibility or soil removal tests. However, some contract jobs have been using this material and getting by with it.

We are currently reviewing the position of Ultra Flat in respect to this specification and will make a more complete report at a later date.

DRAMATONES -- The field reports on the use of Dramatone tube colors continue to indicate very excellent reproducibility and good mixing with all interior finishes. The volume is greater than anticipated and the Sales Department reports better than expected acceptance on the part of dealers.

J. G. Kingston

GLD37416

OIL PRODUCTS LABORATORY

SPEED WALL SEMI-GLOSS -- We have found that Thixcin when used in the Speed Wall Semi-Gloss is subject to a precipitation or a reagglomeration tendency after being heated. This is primarily caused by the low solvency of our low odor thinners. Therefore, to make certain that no difficulties are experienced during the summer time when mills are liable to run warmer, we have removed the Thixcin from the Speed Wall Semi-Gloss and new formulas are being printed at the present time.

No change in working characteristics is apparent, our hold out remains good, our lapping and ease of brushing are still very good and the flow and other application properties remain at the same high level of the original formulation. When used in lesser amounts or in dead flat formulations there seems to be no worry about the Thixcin so that it is not being removed from some of the other formulations outside of the Speed Wall Semi-Gloss.

BLACK JAPALAC -- At the current time we are investigating the possibilities of replacing B-101 with B-1 at a savings in cost of nearly nine cents per gallon. Only a very minor change is produced in the color and it is believed that no other deficiencies will be experienced. This might be a source of considerable savings for many other units on other products. We shall keep you advised as to our final conclusions.

J. E. Southwick

COLOR OF WHITE HOUSE PAINTS -- We have taken reflectometer readings of a number of house paints when they were both wet and dry. The table below shows that (Y-1800-X-6) Endurance White can be just as white as most of our competition. There is very little difference between the best and the worst after the films have dried.

PAINT	REFLECTANCE AT	
	16 Minutes	Dry (24 hrs.)
H-1-7-C	854	848
H-1-7-B	849	847
H-1-7-A	864	863
National Lead	844	850
O'Brien	858	850
Sherwin-Williams	848	844
Pittsburgh	850	843
Y-1800 - P-3743	830	830
Y-1800 - P-2219	848	850

H-1-7-C is a laboratory grind of Endurance White (Y-1800-X-6) with bleached linseed oil (O-132) in place of raw oil (O-1).

H-1-7-B is a laboratory grind of Endurance White (Y-1800-X-6) made from the standard formula.

H-1-7-A is a laboratory grind of Endurance White (Y-1800-X-6) made with sublimed white lead (W-1) and lead free zinc oxide (W-33) substituted for 35% leaded zinc oxide (W-6).

Pittsburgh's paint is a lead free type.

Y-1800 - P-2219 is a representative paint the Cleveland plant has been making recently.

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Y-1600 - P-3743 represents the worst that we found in ten factory retains taken at random from Cleveland production of Endurance White (Y-1800-X-6). It was made in February 1954.

Every available factory retain of Endurance White (Y-1800) made in Cleveland since September 1, 1954 was brushed out over a white background and its color noted. Approximately two hours later the color was noted again. Because of the number of paints involved the reflectometer was not used so the observations are subject to normal human error but are, we believe, substantially correct.

An attempt to determine the color of the leaded zinc (W-6) used was made by comparing the chemical laboratory reports of leaded zinc (W-6) with the dates the paint was made.

The following conclusions were reached:

1. The color of the dried films of Endurance White (Y-1800) made in Cleveland since September 1, 1954 has been good.
2. During the first few minutes after application there is a wide variation in the color of different productions of Endurance White (Y-1800).
3. The color of the dried film appears to depend largely on the leaded zinc (W-6) used.
4. No relationship seems to exist between the body of the paint and the initial color.
5. During the past eighteen months most of the leaded zinc (W-6) received in Cleveland has been of good quality.

H. H. Homans

lms
3/11/55

Planes coated under these conditions passed inspection, met the time requirements for coating, showed a denser and much more water repellent as well as water resistant film than Hollingshead. The rest of the 21,000 gallon order was released and an additional 30,000 gallon has been procured.

(R. D. Canfield)

House Paint Cost Comparisons

We have received a number of competitive house paints recently and have taken the label analysis figures from which we developed formulae for cost comparisons to our own products. The same manufacturing units were used on all of these formulae in developing the costs.

Y-1800-x-6	\$1.98
Y-1850-H	2.00
Sherwin-Williams #471 White -	1.76
Pittsburgh Titanic Outside White	1.54
DuPont #42 Two Purpose House Paint	1.63
Sears #143 White Master Mixed	1.99
#547 Devco Outside White	1.56
#111 White - Dutch Boy	1.95 - only one showing 45x Basic Lead Silicate

We felt that these figures would be of interest to the Trade Sales group in any work being contemplated along these lines.

(J.P. Harner)

Nubelites - Terminal Metal Products Co., N.Y.C.

Finishes for Metal Kitchen Ware.

RGL-25683 - White - Bulk Cost: \$2.39 in 500 gallon lots.

RGL-25699 - Pink - Bulk Cost: \$2.41 in 500 gallon lots.

Applied to tin plate and steel. Reduce 4:1 with S-23. Spray, Bake 4 minutes at 325°F.

Black Q.D. Semi Gloss Dipping Enamel - Polaron Products

Applied metal grills and supports.

RGL-25830 - Bulk Cost: \$1.65 in 500 gallon lots.

Reduce 2:1 with xylol for spray or

1:1 with xylol for dip

Air-dry to pack in 1 hour. GRV-2194 quality.

(M. G. Getz)

License Plate Enamels - State of Virginia

Black Background Enamel - RGL-22321-B. - Bulk Cost: \$.94 in 500 gal. lots
7500 gallon order received. Dip full body
Bake 45' @ 275°F.

White Numeral Ink - RGL-25755 - Bulk Cost: \$2.91 in 500 gallon lots.
4500# order received. Apply roll coat full body
Bake 45' @ 250°F.

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PRODUCT DEVELOPMENT REPORT

SAN FRANCISCO

FEBRUARY 1955

Paints, Varnishes, Lacquers

SF-12153-A - VCM Green Box Enamel. V-900 with small amount of 122-C-58. Bakes under mild infra-red in 1 1/2 min. Reduces 4-1 with S-161. Made for General Box Company.

SF-12154 - Semi-gloss White Enamel. A cheap syndicate - type product. Based on SFL-125, a heavy-body medium-oil alkyd, with lots of thinner and several puffing agents. Surprisingly good brushing and flow.

SF-12157 - L.Z.I. Primer, for Standard Oil of California. The latest attempt to improve brushing and lessen sag. Similar to, but not exactly on, L.I.A. 3-7.

SF-12160 - Green Tank Enamel, for J. D. Beaird Co. 2-KB-402 and 181 line bases. Sprays full body. Dries to handle in four hours.

SF-12163 - Dark Silver Gray Nu-Pon, for Minneapolis - Honeywell of Los Angeles. A metalescent for use on cast aluminum, in the epon polyamide quality. To be baked 7' @ 300°F., Infra-red.

SF-12165 - Gray Nu-Pon. A shade off from 287-W-701, which we stock and which is the polyamide type. This is designed for W. R. Ames, who will use it on couplings for aluminum irrigation pipe. They will bake 10' @ 300°F.

SF-12166 - Purple Drum Striping Enamel. An odd mixture of SFL-140 (a medium oil alkyd, soya & D. C. O., in very slow solvents) and 122-C-48, with 181-line bases. Roll coats with more or less reduction with S-43, dries in 8 hours hard, to recoat overnight. For U. S. Steel Products.

SF-12170 - Beige Dipping Enamel. An alkyd urea 181-line baking finish for window screen frames. Rudiger Lang Co. will reduce it 3-1 with S-162, and bake 15' @ 325°F.

SF-12171 - Sand Beige V.C.M. Semi-Gloss Enamel. For Pacific Mill & Fixture Co. 93 line, 181-W-9150 for sheen, V-900, and 2-KB-402. Reduces 4-1 with S-161 for spray. Dries to handle in 2 hours, to pack over night.

SF-12177 - Kelly Green Veiling Enamel. A V. C. M. product, used in a special spray gun, to apply a veiling pattern to jalousies. Air dries, for D.N. & E. Walters Co.

SF-12179 - Black Veiling Enamel. As above.

SL-3876 - Parting film, for use on molds for Glidpols. To be used by Anthony Bros. of Los Angeles on large molds for swimming pools.

SL-3877 - Low Sheen White Lacquer. For Unit-Bilt Stone Equipment Co. Reduces 1-1 for spray; dries in 1/2 hour. Sheen 25-30.

SL-3878 - High Solids Lacquer. A 27% topcoat, to match a competitive product. Takes 10-1 reduction for spray. Full gloss. Made from N/C, Cellolyn 104, and NRV-721.

SL-3879 - High Solids Lacquer Sealer. 25% NVM; takes 10-1 reduction. Sands in 1/2 hour. This and the above SL-3878 are for Academy Wood Products, Inc.

14-VB-497 - Wet Ink Varnish, for Western Crown Cork and Seal. Roll Coats full body at 42% N.V.M. Made from SFL-125. (50% 0-5)(Contains 1 oz. Paraffin)

14-VB-498 - Clear Brass Nubelite. For Hillgren Mfg. Co. An alkyd melamine type.

14-VB-499 - Epon Brass Coating. Hillgren Mfg. Co.

14-VB-500 - Epon Urea Brass Coating. Hillgren Mfg. Co.

14-VB-501 - Alkyd Vinyl Brass Coating. Hillgren Mfg. Co.

14-VB-502 - Alkyd Epon Brass Coating. Hillgren Mfg. Co.

14-VB-503 - Bronzing Vehicle. For U. S. Steel Products. Alkyd and urea type. To be used with gold bronze Roll coated and baked 17' @ 340°F.

14-VB-504 - Spray Type Bronzing Vehicle. For U. S. Steel Products. 2-KB-522 and 122-C-48. When pigmented, bakes 17' @ 200°F.

SFL-179 - Castor Alkyd for L.Z.I. Primer. 50% in S-138. N to O body; cure 45" to 50". 30% P.A. To replace SFL-80 and SFL-169. The former dries too slowly and the latter brushes too hard. This vehicle needed for Standard Oil Co's L.Z.I. primer, SF-12157.

SFL-180 - Epon 1007 cut for factory. 27.3% in blend of solvents.

CMC:lah

C. M. Capps

Glidpols

Forestrong Co.

A Tan Glidpol Enamel was requested by the subject company. SF-12155, made by shading 292-W-700-A, was submitted.

Anthony Bros.

The above company requested a Translucent Gel-Kote and a Parting Film. The Translucent Gel-Kote (SF-12147) submitted is actually a thixotropic Glidpol only Cab-O-Sil was used to make the Glidpol thixotropic. SL-3876 was submitted

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for the parting film. The formula listed for Glidpol 3304 could not be used because all of the raw materials are not readily available at this plant. SL-3876 is basically the same as Glidpol 3304 and will be submitted and sold as Glidpol 3304 in the future.

T. R. Anderson

Emulsion

Glide-On

SXM-55074. Gray PVA Masonry Paint: An extremely heavy bodied, high hiding Glide-on type material for complete one-coat hiding over varied surfaces. The white pigment is 100% W-170 and solids are higher. Viscosity is in the 85-90 K.U. range. The material was reduced 16-1 by the painter for brushing.

Ultra Flat

We are unable to get satisfactory flow using W-197 but are getting good flow using W-170 as given in "B" formulation.

As an anti-foam agent we are adding 10 gallons per thousand of a 5-1 solution of S-43 and Nalco X-211 to all ultra flat batches after tinting.

We very much need some type of penetrating wall conditioners to use under Glide-On over very chalky stucco walls which have previously been painted with water slurry type paints one formulation using V-740 appears fairly effective. Any help on this problem would be appreciated as it frequently is not feasible for a home-owner to sandblast or wire brush his house before painting.

Wesley W. Page

WWP:lah