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Marshall Laboratory
January 12, 1970

MARSHALL RESEARCH & DEVELOPMENT LABORATORY RELEASE LETTER # 2173

NEW 1970 COLORS FOR CONSUMER PRODUCTS IN DUCO® SPRAY PAINTS
(LACQUER QUALITY)

This letter proposes the production and national sale of eight new colors in the "Duco" (243-Line) aerosol spray lacquer line for 1970.

The lacquer compositions are prepared according to long-accepted practices for formulating the spray lacquer aerosols. Past production has been satisfactory.

Minor revisions in some compositions were made to use some 253-Line pigment bases in order to get good color matches, and all the new colors have been successfully aligned at Parlin.

Technically, this proposal appears to be acceptable.

E. R. Taylor, Jr.
E. R. TAYLOR, JR.

ERT jr./emm

[Signature]
JAN 15 1970
E. R. TAYLOR

Approval of this release is subject to the completion of a satisfactory alignment program. Marketing believes the expanded color line is needed to be more competitive in the marketplace.

MANAGEMENT DECISION REQUESTED:

Management approval of this release is requested. This proposal involves the following considerations:

1. This letter is written in advance of any manufacturing experience on the new colors in order to meet commercial goal dates set by Marketing.
2. The new products are being scaled-up directly from the laboratory to the Parlin Plant. Necessary alignment of the product will be done at Parlin Plant.
3. All eight new colors are formulated along lines consistent with the currently active spray lacquer formulations. As with existing products in the line, composite grinds are used. Shading is accomplished with 253-Line lacquers.
4. Sprayon Products, Inc. the packager has evaluated all colors from laboratory prepared batches except the red and found them to be satisfactory. The red was submitted to Sprayon as of 11/29/69.
5. Marketing has proposed that all 1970 colors be in a stock position by February 26, 1970. Eight weeks lead time are required at Sprayon, the packager. Alignment is already in progress at Parlin.
6. Existing colors, Chinese Red, Primrose Yellow and Hunter Green, all of which contain lead based pigments, are being dropped. The entire line in 1970 will be on a lead-free pigment basis.
7. Stability data on the new colors is limited to a maximum of five weeks (as of 11/29/69) on all colors but the Red and is satisfactory. Samples of the latter will be under test within 10 days.
8. Hiding for the Red and Yellow replacements for Chinese Red and Primrose are lower than with the existing colors but this was necessary because the pigmentation used to achieve acceptable colors does not hide as well as the chrome pigments previously used.

9. Hiding varies within the line. It was not possible within the framework of the timing schedule to optimize cost/hiding. Additional cost savings on pigmentation are probable with additional laboratory work.

10. A new pigment, W-604 Benzidene Yellow, is required for the new yellow.

11. The W-862 Toluidine Red required for the Red can bleed. The current Chinese Red also contained a bleeding pigment.

TECHNICAL OPINION:

The Laboratory favors approval of this release.

Although we have no manufacturing experience with the new colors, all products have been developed within existing formulating principles for the Duco® spray paint line. The amount and type of alignment work necessary to make this product can best be defined by Parlin Plant since they have all the manufacturing background experience and the necessary production facilities. The Laboratory does not anticipate any manufacturing problems. Sprayon Products has evaluated and approved the products. No problems are anticipated in packaging. The Development Laboratory has reviewed the packaged product received from Sprayon and found it to be satisfactory in overall quality and color.

DESCRIPTION OF PRODUCT:

The products included in this proposal, with proper codes, are summarized in Table I. The products referred to in this release letter conform to the formulating techniques for "Duco" (nitrocellulose) lacquers referred to in Release Letter #2013 and supplementary release letter #2013-C dated Sept. 1, 1968 and #2013-D dated Aug. 22, 1968.

COMPETITIVE SITUATION:

The current line of "Duco" Spray Paints offers only a limited number of colors. With the expansion of the line through the offering of eight new colors, Marketing feels our position will be strengthened and we should capture a larger share of this market.

TABULATION OF COMPOSITIONS:

See accompanying table.

REPRODUCIBILITY:

Reproducibility on the new colors has not been defined but based on previous experience no problems are anticipated.

Quart samples of each color were forwarded to Sprayon, Inc. These samples were packaged to contain the proper composition of solvent and propellant addition.

Based on past performance of Sprayon Products, Inc. who, over the past twelve years has supplied our aerosol requirements, we would expect reproducibility of the proposed quality to be good.

CONTINUING LABORATORY WORK:

The Laboratory will be evaluating package stability of all colors, concurrently with the processing of this letter. Cost reduction studies through reduced hiding will be done if Marketing desires and establishes a sufficiently high priority to justify use of available manpower.

COST INFORMATION:

Cost from the Control Division on the products involved are shown in Table I. These costs are provided for guidance only, and are not official. Official costs should be obtained from the proper channels.

The relatively wide difference between the cost of individual products in the same line is because of higher cost of tinting pigments used and/or the higher level of TiO_2 needed to obtain satisfactory hiding.

MANUFACTURING PROBLEMS:

Since there is no change in the basic vehicle composition of these formulations, versus those currently being produced, we anticipate no unusual problems in production. Color and quality standards have been sent to the Parlin Plant. The Parlin Plant and the Development Laboratory have jointly reviewed the formulas and agreed to changes which plant personnel believe will aid in alignment.

The plant is aware of timing involved in this proposal.

SIMPLIFICATION:

One new pigment, W-604 benzidene yellow will be added. The present "Duco" spray paint line is composed of thirteen colors. Marketing plans to drop or obsolete five of the colors as follows:

890-63525	2445-C	Copper
243-84495	2434-C	Hunter Green
243-84492	2430-C	Primrose Yellow
243-84493	2435-C	Horizon Gray
243-84490	2432-C	Chinese Red

Approval of this release will have an adverse effect on simplification. Eight new products will be added to our file and three new formulas will be added to our file.

PATENT INFORMATION:

There are no known patents which would interfere with the action proposed in this release letter. An up-to-date status of 243-Line "Duco" Spray Paints is presented in Release Letters #2013 and supplementary Release Letters #2013-C and #2013-D.

CONFIDENTIAL INFORMATION:

No unusual or confidential information is contained in this release letter.

FORMULA CARDS:

Supply and package formulas are in file. Color standards have been supplied Parlin.

MARSHALL DEVELOPMENT LABORATORY

W. F. Welsh
W. F. WELSH

WFW:dk

APPROVED: *T. R. Matthews*

DATE: *12/12/62*

APPROVED: _____

DATE: _____

Table No. 1

Ingredient	Chemical or Trade Name	243-67454 Pom Pom Yellow	243-67455 Autumn Brown	243-67456 Persian Blue	243-67457 Avocado	243-67458 Bronze Green	243-67459 Harvest Gold	243-67460 Mayflower Pink	243-67480 Cherry Red
H-49	Redistilled Toluene	102.08	119.57	94.68	100.28	102.87	89.51	106.20	70.16
RL-233	Medium Oil Coconut Alkyd	75.00	79.39	98.63	109.41	81.26	148.91	125.55	86.90
G-608	Ester Gum	64.19	52.28	45.11	50.44	54.46	69.38	57.58	63.54
PX-7420	1/2 Sec. Nitro Cellulose	18.43	44.52	13.29	14.63	46.68	20.14	16.99	47.94
PX-7400	1/4 Sec. Nitro Cellulose	71.88	74.53	51.80	57.16	77.80	78.35	65.13	59.05
W-74	R-966 Titanium Dioxide	174.98	-	90.99	72.31	27.66	116.42	123.66	7.76
W-10	Zinc Oxide	7.78	-	5.15	5.51	-	7.87	6.61	-
W-604	Benzidene Yellow	4.82	-	-	-	-	-	-	-
W-362	Red Iron Oxide	-	29.08	-	-	-	-	-	13.39
W-630	Ferrite Yellow-Orange	-	45.45	0.77	23.67	73.05	31.30	-	-
W-222	Molacco Black	-	2.90	-	0.26	-	-	-	-
W-552	Monastral® Blue	-	-	1.20	0.43	-	-	-	-
W-750	Monastral Green	-	-	7.20	-	-	-	-	-
W-582	Milori Iron Blue	-	-	-	-	3.89	3.39	-	-
W-612	Green Gold	-	-	-	-	-	-	-	-
W-819	Monastral Red	-	-	-	-	-	-	2.83	-
RL-233	Medium Oil Coconut Alkyd	43.57	-	-	-	-	-	-	-
H-6	Burly Acetate	248.70	296.88	206.38	185.03	245.05	191.38	234.80	334.47
H-79	Cellulosive Acetate	19.45	15.52	10.12	15.84	12.10	15.65	13.22	22.30
H-35	Methyl Ethyl Ketone	38.90	-	28.13	40.11	45.82	42.56	35.87	-
H-44	Methyl Isobutyl Ketone	24.27	-	16.81	23.67	-	25.72	21.71	30.06
H-22	Castor Oil	2.87	6.74	-	-	6.05	-	-	4.49
HE-112	Dibutyl Phthalate	4.82	23.20	-	-	24.21	-	-	4.49
VH-5379	Silicone Solution	2.87	3.84	0.77	0.86	4.32	1.01	2.12	2.21
G-697	Phosphoric Acid	-	-	-	0.86	-	1.01	1.41	-
253-0612	Green Gold Shading Base	14.91	-	-	-	-	-	Trace	Trace
253-0222	Carbon Black Shading Base	Trace	13.56	9.35	9.12	-	Trace	3.54	-
253-0630	Ferrite Yellow Shading Base	6.48	12.62	6.95	24.36	-	-	-	-
H-40	Methyl Isomyl Ketone	-	8.70	-	-	-	-	-	-
H-69	Anhydrous Isopropyl Alcohol	-	8.70	-	-	10.37	-	-	-
253-050	Titanium Dioxide Shading Base	-	15.52	-	-	-	-	-	-
B-613	Clear Lacquer Vehicle	-	-	110.98	124.04	-	68.28	57.58	-
253-0550	Monastral Blue Shading Base	-	-	17.75	3.01	-	4.02	-	-
253-0750	Monastral Green Shading Base	-	-	41.94	-	-	-	-	-
H-30	-	-	-	-	-	13.83	-	-	3.35
H-583	-	-	-	-	-	34.58	-	-	44.59
253-0819	-	-	-	-	-	-	-	9.20	22.30
W-862	-	-	-	-	-	-	-	-	817.00
W-300	-	-	-	-	-	-	-	-	-
TOTAL		924.00	853.00	858.00	861.00	864.00	915.00	884.00	

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Table I - Continued

	243-67454 Pom Pom Yellow	243-67455 Autumn Brown	243-67456 Persian Blue	243-67457 Avocado	243-67458 Bronze Green	243-67459 Harvest Gold	243-67460 Mayflower Pink	243-67480 Cherry Red
Volume Solids	27.95%	24.76	25.04	25.49	25.20	30.88	26.23	24.99
Pigment Volume	21.13	9.62	14.89	12.35	13.05	15.46	15.80	15.33
P/B	84/100	35/100	49/100	45/100	46/100	59/100	59/100	28/100
Bulk Mill Cost/100 Gals.	240.86	194.74	242.13	205.78	198.64	240.60	249.05	263.50