

INTER-OFFICE MEMO **TENNECO CHEMICALS, INC.**

TO Route List AT DATE June 28, 1973
 FROM H.B. Carr AT Burlington COPY TO ☒ File
 SUBJECT Tentative Color Specifications

Reference: Memo: H.B. Carr to M. Freifeld,
 dated January 31, 1973

In the referenced memo, a program was described for the development of color specifications on raw materials and finished compounds based on quantitative color readings obtained on a Gardner XL-10 Color Difference Meter.

The Gardner instrument provides measurements of the Adams Color Space (L, a and b values), as per ASTM D-2244. A three-dimensional plot of these color coordinates is attached and provides the following definitions:

- L value - light to dark value; the higher the value,
 the lighter the color
- a value - positive values indicate degree of red shade;
 negative values indicate degree of green shade
- b value - positive values indicate degree of yellow
 shade; negative values indicate degree of blue
 shade

In accordance with the schedule outlined in the referenced memo, which was based on the frequency of compound production runs and raw material receipts, tentative specifications have been established as shown in Table I (attached).

An actual plot of L, a and b values is attached that provides an expanded representation of the color coordinates.

H.B. Carr
 H.B. Carr

Attachments (3).

HBC/jst

Route List

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TABLE 1

TENTATIVE COLOR SPECIFICATIONSA. COMPOUNDS

	<u>Compound</u>	<u>L</u>	<u>a</u>	<u>b</u>
Group I	3805D Black	10.0 ± 0.7	1.5 ± 0.2	-0.4 ± 0.4
	2300 Brown 1	23.2 ± 1.2	9.0 ± 0.5	7.9 ± 0.7
	WE 535 LOC	49.7 ± 0.8	0.2 ± 0.2	6.3 ± 0.5
	WE 644 Natural	89.1 ± 1.1	-0.5 ± 0.5	8.2 ± 0.6
	Colorite VOR-73 Clear Green	11.5 ± 0.9	-0.6 ± 0.1	-5.0 ± 0.7
	2580 Black	11.3 ± 2.0	1.2 ± 0.3	-0.5 ± 0.3
	WE 715 Black	11.1 ± 1.6	1.2 ± 0.3	-0.7 ± 0.2
	2710C-4 Natural	82.1 ± 2.6	0.5 ± 0.6	11.7 ± 2.2
	3098 Clear 6	11.5 ± 1.7	1.3 ± 0.2	1.1 ± 0.2
	3192 Black	11.3 ± 1.5	1.2 ± 0.4	-0.6 ± 0.4
	2901-1 Natural 01	85.6 ± 3.9	0.3 ± 0.7	9.5 ± 1.2
	2820 Black (T-6300)	13.9 ± 1.2	1.0 ± 0.2	-0.7 ± 0.4
	2800 Black	Insufficient Data Available		
	4703 Clear	Insufficient Data Available		
Group II	The following tentative specifications have been established for Group II compounds:			
	2022 Gray 148	50.8 ± 3.3	0.1 ± 0.2	1.3 ± 0.5
	2300 White 219	87.1 ± 4.6	-0.9 ± 1.8	8.5 ± 3.3
	2580 Natural	83.7 ± 3.8	-0.4 ± 0.3	7.6 ± 0.8
	2814 Black	10.5 ± 0.9	1.4 ± 0.2	-0.5 ± 0.4
	2820 Natural	81.8 ± 1.7	0.8 ± 1.0	11.5 ± 2.0
	2901 Black	13.2 ± 1.3	1.1 ± 0.1	-0.6 ± 0.4
	2901 Natural	77.4 ± 0.7	1.6 ± 0.8	12.0 ± 1.4
	2905 Natural	84.4 ± 1.2	0.5 ± 0.4	9.5 ± 1.2
	3086 Clear 22	12.1 ± 2.7	1.3 ± 0.2	-1.2 ± 0.4
	3118 LOC	50.5 ± 0.7	0.4 ± 0.1	6.2 ± 0.5
	WE 534 LOC	49.8 ± 1.1	0.0 ± 0.1	6.6 ± 0.2
Group III	3078 Clear 22	12.1 ± 0.8	1.3 ± 0.2	-1.5 ± 1.3
	WE 527 LOC	48.8 ± 1.7	0.2 ± 0.3	5.5 ± 0.5
Group IV	3063 White 222	88.7 ± 3.5	-0.9 ± 0.6	0.3 ± 0.7
New Compounds	T746-D Natural	87.3 ± 1.8	0.0 ± 0.8	9.2 ± 1.4
	3135 White 248	90.1 ± 0.7	-1.4 ± 0.4	0.3 ± 0.5
	3160 Green 107	33.2 ± 1.9	-25.7 ± 1.3	-0.4 ± 0.3

TABLE I
TENTATIVE COLOR SPECIFICATIONS
(continued)

B. RAW MATERIALS

The following tentative specifications have been established for raw materials:

<u>Raw Materials</u>	<u>L</u>	<u>a</u>	<u>b</u>
Mark WS	87.6 ± 4.7	-0.9 ± 0.4	3.1 ± 0.8
Tribase EXL	87.4 ± 2.1	-1.1 ± 0.7	2.3 ± 1.4
Tribase	88.4 ± 1.8	-1.2 ± 0.7	3.3 ± 1.3
Tribasc E	88.5 ± 0.9	-0.8 ± 0.3	3.2 ± 0.7
Tribase XL	87.9 ± 0.7	-1.2 ± 0.5	2.4 ± 1.4
Nuostab V-133	91.6 ± 0.4	-1.3 ± 0.3	1.8 ± 0.6
DiBasic Lead Stearate	90.5 ± 0.9	-1.4 ± 0.2	2.8 ± 0.9
Camelwhite	90.6 ± 0.6	-1.1 ± 0.6	1.9 ± 0.6
Plastiflow LPC	80.6 ± 1.1	-0.5 ± 0.2	8.6 ± 0.6

The following tentative specifications have been established for pigments:

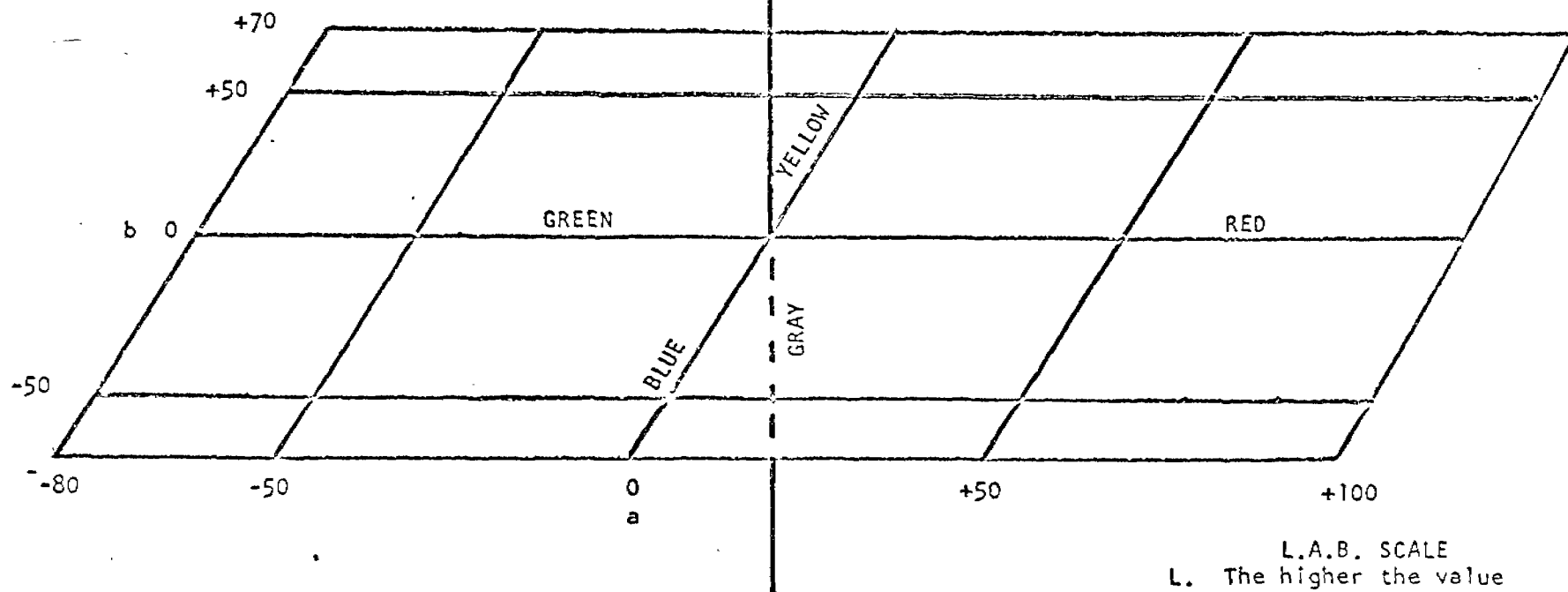
10% M.B. Sudan Irisol	15.3 ± 0.5	3.8 ± 0.1	2.7 ± 1.3
RBH Red F225	21.0 ± 0.9	32.2 ± 3.3	8.1 ± 0.8
Monarch 700	10.2 ± 0.6	1.4 ± 0.2	-0.7 ± 0.6

Color Coordinates

L, a, b Space

100-WHITE

L-AXIS



COLORITE 014658

0-BLACK

L, a, b SPACE

L.A.B. SCALE

L. The higher the value
the lighter the color.

A. + Redness
- Greeness

B. + Yellowness
- Blueness

SPECIMENS 3160 GREEN 107

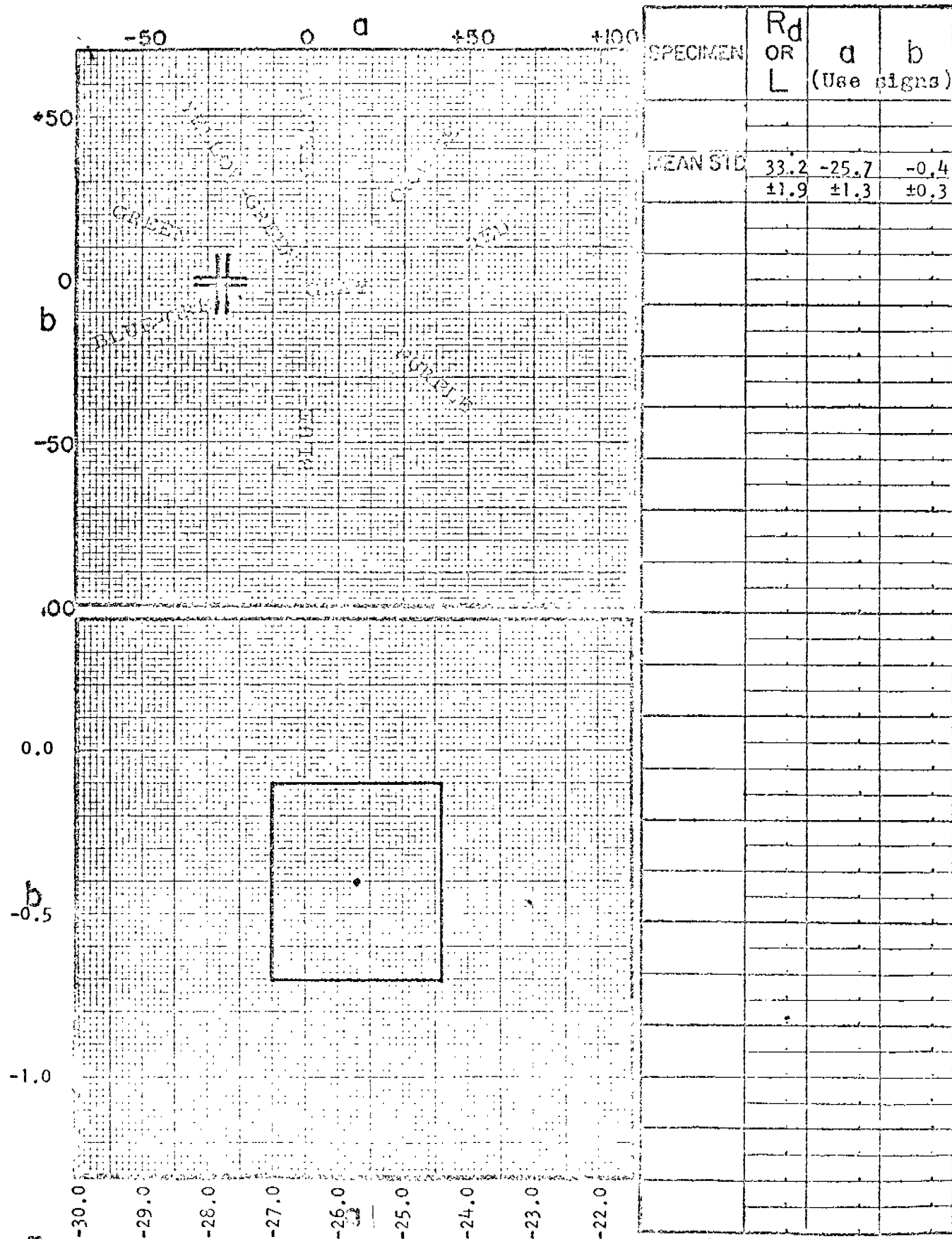
STD.

035.

DATE JUNE 15, 1973

Gardner Laboratory, Inc., Bethesda, Md.

DATA AND GRAPH SHEET FOR GARDNER COLOR-DIFFERENCE METER



Use upper graph to show locations of specimens on color diagram, lower graph to show small differences between specimens. Mark a and b lines.

COLORITE 014659

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