

RAW MATERIALS

New Jersey Zinc
LEAVES from a
PAINT RESEARCH NOTEBOOK

N13636

A.S.T.M. HIDING FIGURES

P.C.H.

APR 2 1947

Technical Data

EUSTON WHITE LEADS	Spatula Oil		Paint	
	Absorption cc/100 gms.		Consistency %	
Superior Grade	10.7 cc		122	
Standard Grade	8.9 cc		100	
Special Standard Grade	8.9 cc		86	
H. C. Grade	7 cc		102	

WHITE PIGMENTS	Refractive Index	Hiding Power	Sp. Gr.	Gals./Lb.	Lbs./Gal.
Antimony Oxide	2.09	20	5.75	.0209	47.90
Basic Sulfate White Lead	1.93	13	6.40	.01876	53.31
Basic Carbonate White Lead	1.98	15	6.73	.01784	56.06
EUSTON SUPERIOR WHITE LEAD	2.02	16	6.68	.01797	55.64
EUSTON WHITE LEAD (other types)	2.02	16	6.80	.01765	56.64
SUNOLITH Lithopone	1.84	27	4.30	.02792	35.82
SUNOLITH HDH Lithopone	1.85	34	4.18	.02872	34.82
TITANOLITH Titanated Lithopone	1.90	44	4.19	.02865	34.90
TITANOLITH HDH Titanated "	1.91	53	4.15	.02893	34.57
Titanium Barium Pigment	1.87	48	4.20	.02858	34.99
Titanium Calcium Pigment	1.87-1.91	53	3.10	.03873	25.82
Titanium Calcium Rutile	1.98	64	3.25	.0369	27.07
Titanium Dioxide Anatase	2.5	115	3.94	.03047	32.82
Titanium Dioxide Rutile	2.7	150	4.20	.0286	34.99
Titanium Magnesium Pigment	1.85	48	3.10	.0387	25.82
Zinc Oxide (American Process)	2.02	11	5.65	.02125	47.06
Zinc Oxide (French Process)	2.06	20	5.66	.02121	47.15
Zinc Oxide -Seal Grades	2.0	21	5.57	.02155	46.40
Zinc Oxide -5% Lead	1.95	20	5.70	.02106	47.48
Zinc Oxide -35% Lead	1.95	18	5.90	.02034	49.15
Zinc Oxide -50% Lead	1.95	16	6.00	.02001	49.98
Zinc Sulphide -50% CaSO ₄ -50%	1.90	46	3.10	.03873	25.82
Zinc Sulphide -50% BaSO ₄ -50%	1.89	44	4.20	.02858	34.99
Zinc Sulphide Magnesium Pigment	1.88	44	3.35	.03610	27.75
Zinc Sulphide Pure	2.37	58	4.00	.03001	33.32

Sq Ft. Solid
Hiding Per 1 Lb

3"

P. C. H.
FEB 26 1947

EXTENDER PIGMENTS

PIGMENT	Approximate Chemical Composition	Refractive Index	Specific Gravity	Bulking Value Gal. per pounds	Oil Absorption
Silicate Pigments					
Silica	SiO_2	1.55	2.6	0.0460	25.0
Diatomaceous Silica	SiO_2	1.40-1.50	1.95-2.35	0.0615-0.0610	25.0-150.0
Clay	$Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O$	1.56	2.60	0.0480	36.0
Pyrophyllite	$Al_2O_3 \cdot 4SiO_2 \cdot 2H_2O$	1.588	2.85	0.0422	
Talc	$2MgO \cdot 4SiO_2 \cdot H_2O$	1.59	2.85	0.04212	27.0
Mica					
Muscovite	$H_2O \cdot \frac{1}{3}Al_2O_3 \cdot 6SiO_2 \cdot 2H_2O$	1.59	2.5 - 3.0	0.04272	47.5
Phlogopite	$H_2O \cdot 6MgO \cdot Al_2O_3 \cdot 6SiO_2 \cdot 2H_2O$	1.606	2.5 - 3.0	0.04365	24.0
Barium Sulfate Pigments					
Ground Barytes	$BaSO_4$	1.64	4.476	0.02850	6.0
Blanc Fixe	$BaSO_4$	1.64	4.35	0.02753	14.0
Calcium Sulfate Pigments					
Gypsum	$CaSO_4 \cdot 2H_2O$	1.53	2.35	0.05107	21.0
Anhydrite	$CaSO_4$	1.59	2.95	0.04070	25.0
Precipitated					
Calcium Sulfate	$CaSO_4$	1.59	2.95	0.04070	50.0
Calcium Carbonate Pigments					
Precipitated Types					
Colloidal	$CaCO_3$	1.63	2.68	0.0448	55.0
High Oil					
Absorption	$CaCO_3$	1.63	2.68	0.0448	40.0
Low Oil					
Absorption	$CaCO_3$	1.63	2.68	0.0448	17.0
Surface Treated	$CaCO_3$	1.63	2.65	0.0453	15.0
Natural Types					
Calcite					
Water Ground	$CaCO_3$	1.60	2.71	0.0443	15.0 - 6.5
Dry Ground	$CaCO_3$	1.60	2.71	0.0443	9.0
Limestone	$CaCO_3$	1.60	2.71	0.0443	10.5
Imported Chalk	$CaCO_3$	1.60	2.71	0.0443	12.5

318 Line Bases

<u>No.</u>	<u>Wt./gal.</u>	<u>%Pigment</u>	<u>%Vehicle Sales</u>	<u>No.</u>	<u>Wt./gal.</u>	<u>%Pigment</u>	<u>%Vehicle Sales</u>
B7	8.8	23.1	30.1	Y1D	17.76	66.5	15.65
B26B	8.4	11.9	40.6	Y2D	17.73	66.4	15.8
A2B	9.2	27.0	33.7	Y22D	22.37	74.4	12.2
A16B	12.0	55.5	17.8	Y37D	15.62	50.9	18.5
A58B	8.2	8.8	35.7	Y40C	17.52	66.5	16.0
A74D	9.2	30.4	32.3	Y111C	17.71	65.5	16.2
A82B	8.4	16.6	32.8	Y202	19.5	70.6	14.3
A202C	9.98	35.2	25.5	T103D	10.8	40.5	25.9
A203B	8.81	17.8	34.2	T200	9.2	25.7	36.8
D17C	12.5	50.0	20.0				
D18A	12.5	50.0	20.0				
G2E	11.1	40.0	25.4				
G3C	10.4	33.1	31.6				
G48F	15.3	59.7	18.6				
G74A	8.46	13.6	33.8				
R7B	8.6	20.04	37.06				
R18D	16.3	66.3	15.6				
R21C	13.5	55.0	20.0				
R145	8.7	16.2	34.9				
R167	8.4	16.2	34.9				
R172B	9.57	35.0	32.3				
R209B	8.93	24.6	40.9				
R250D	17.73	69.0	19.0				
R270A	8.4	17.05	32.7				
W91C	14.8	60.0	20.2				
W170J	16.4	66.7	15.7				

STANDARD VARNISHES
AND SYNTHETIC RESINS

CENTRAL REGION

R. J. Haviland
Paul Oertling

7/15/60

GL038199

RJH &
PO

- ACTIVE VARNISHES -

7/15/60

VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTH	N.V. %	VISC.	COLOR GARDNER	ACID# (SOL)	WEIGHT GAL.	PHENALIC MODIFIER ANH. DRIERS, ETC. IN-PUT
V-36	Resin C.C.	none	Demar	S-43	0	53/55	A-F	10		7.7	-
V-37	"	none	Modified Phenolic	S-23 S-138	0	60	B-D	13	9-10	8.7	-
V-38	"	none	Glycerol Ester	S-43	0	64/66	G-H	12	4-5	8	-
V-46	Resin (Gloss Oil)	none	Linseed-Rosin	S-43	0	61/63	S-T	13	57	8	VM-300
V-57A (VR-54004)	Oleo Resinous	O-3	VM-473	S-23	12½ g.	39/41	A-1	15	-	7.9	-
V-119	"	O-3 O-63	Hardened VM-481	S-43	54	43/44	E-F	15	10	7.2	VM-320 VM-310
V-159-C	"	O-285 O-52	VM-236	S-43	50	64	E	13	8-9	7.47	CH-178
V-177	"	O-285	VM-236 VM-481	S-43	37	46/47	E	14	10-11	7.29	VM-308 CH-146
V-306C	"	O-3	VER-915 (VM-242) ⁸³⁴ _{Resin}	S-43, S-138 S-23	10	50/51	E	11/12	6	7.4	D-33 & D-29
V-340	Oleo Resinous	O-132	VM-450	S-23, S-43	2	47	✓A	16/17	0.5	7.5	D-75 Formerly RVL-2357-C
V-357-H	"	O3 & O65	VM-535	S-43	18	50/51	F/G	10/11	5	7.45	
V-405	Touch-up Black	none	VM-106 & VM-481	S-43 S-342	0	42/43	29" F.C.4	black	-	7.25	
V-411-A	Asphaltum	O-60	VM-106 VM-481	S-43	4 gal	40	36" F.C.4	Black	-	7.25	VM-310
V-523	"	O-3	VM-167	S-43 & S-90	50"	54	A	12	6-9	7.4	VM-308

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VEHICLE # TYPE	OILS	RESINS	SOLVENTS	OIL LENGTH	N.V. %	VISC	COLOR GARDNER	ACTIVE VARNISHES - page 2.	
								ACID # (SOL)	PHTHALIC MODIFIER
									AHN. DRIERS, ETC
									IN-PUT

V-557	Oleo Resinous	0-178 0-3 & 0-52	none	S-43	all-Oil	63/64	F	9	1.2	7.3	
V-705	Oleo Resinous	0-3 & 0-52	VM-236	S-43	25 gal	45/46	E	12/13	5	7.3	VM-300 VM-308 & CH-198
V-715	"	0-3 0-52	VM-481	S-43	52	40/41	R	11	7-8	7.2	VM-300 VM-325 & VM-173
V-740 (VR-58003)	"	0-3 0-52	VM-670	S-43 S-23	50	60	F	9	15	7.6	D-75
V-756	"	0-3 0-52	VM-344	S-43	60	60	E/F	11/12	11-12	7.5	D-75
V-806	Alkyd	0-183	Glycerol	S-23	34%	33%	D-E	5	12	7.69	45%
V-813	Alkyd	0-183	Glycerol Phthalic	S-23 & S-138	35%	50	P	7	8	8.15	44%
V-827-B	"	0-265 0-182	Glycerol Phthalic	S-23	40%	50	J-R	6	5	8.17	39% CH-198
V-828	"	0-183, 0-3 & 0-60	Modified Glycerol Phthalic	S-23 & S-138	54%	50	I-K	6	8-9	7.88	36% VM-344
V-833-H	"	0-268-C	P.E./Glycerol Phthalic	S-138 S-342 & S-43	39%	50	R-U	10/11	8-10	8.0	30% VBR-915
V-850-A	"	0-265	Glycerol Phthalic	S-43	47%	50	V-W	5/6	5.	7.6	42%
V-849	Alkyd	0-318	Glycerol Phthalic	S-23/S-342	34%	50	X	8	6	7.33	41% CH-181
V-855A	Alkyd	0-52	Glycerol Phthalic	none	73%	100	T-U	9/10	10	8.3	18% -
V-858	Alkyd	Sylfat 496	Glycerol- Pe.-Phthalic	S-43	40%	50	T-U	6	4	7.6	25% VM-481 CH-198

VEHICLE # TYPE	OILS	RESINS	SOLVENTS	OIL LENGTHS	N.V. %	VISC	COLOR GARDNER	ACID # (SOL)	ACTIVE VARNISHES - PAGE 3		
									WEIGHT GAL.	PHTHALIC MODIFIER ANH.	DRIERS ETC
V-860	Alkyd	O-265	Glycerol Phthalic	S-43, S-23 & S-138	44%	48	W-X	5	8.3	35%	
V-869	"	O-265	P.E. Phthalic	S-43	60%	60	U-V	4	7.85	26%	
V-876	Alkyd	O-1	P.E. Glycerol Phthalic	S-23 & S-43	52%	50	X-Y	6	7.6	31%	
V-891	Alkyd	O-265	Glycerol Iso-Phthalic	S-23, S-43	55%	50	X	3	7.6	31% *	-
V-900	Vinyl Toluene	O-265 & O-268	P.E. Phthalic Vinyl Toluene	S-342	35%	50	W-X	7	7.34	13.5%	CH-288

ISO-PHTHALIC
IN-FUT

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7/15/60

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VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTH %	N.V.	VISC.	COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PHTHALIC ANH. IN-PUT	MODIFIER DRIERS, ETC.
GRV-1521	Alkyd	O-183	Glycerol Phthalic	S-106, S-138 S-148, S-23	42%	60	Z 3-4	10	15-17	8.3	40%	
GRV-2041C		O-182	Glycerol Phthalic	S-23	28%	40	M-O	5	36	8.01	47%	
GRV-2045B	"	O-323 CH-5	Glycerol Phthalic	S-138 S-23	12.7%	45	Z 4-5	3	10	8.28	46%	B Vehicle only
GRV-2071	O.D. Alkyd	O-22 O-268	Modified Glycerol Phthalic	S-23	32%	50	Z 1-2	8/9	14	7.9	40%	VM-481 CH-198
GRV-2141	Alkyd	O-52	Glycerol Phthalic	S-6, S-23 S-138	38%	50	Y-2	8/9	15	8.17	41%	
GRV-2142	"	O-265	P.E./Glycerol Phthalic	S-43, S-342	47%	50	Z 2-3	8/9		7.6	33%	Cure 35"-40"
GRV-2180A	Silicone Hi-Heat Alkyd	O-323	S1.-Modified Glycerol Phthalic	S-23	20%	50	Z 2	5	-	8.4	35%	VM-648
GRV-2185	Alkyd	O-182	P.E./Phthalic	S-23, S-1 S-138	45%	50	Y-Z	6	27	8.01	34%	
GRV-3003	Vinyl Toluene Alkyd	O-265 O-268	P.E./Phthalic	S-342, S-43	35%	50	T-U	6	6-7	7.34	13.5%	CH-288
GRV-3015	Alkyd (29% Abietic Acid)	O-319	Modified Glycerol Phthalic	S-106	33%	50	V-W	7	23	8.10	36%	Tall-Oil Resin CH-305
GRV-3042	Vinyl Toluene Alkyd	O-265 O-268	P.E./Glycerol Phthalic	S-342	35%	50	M-N	5/6	7	7.35	13.5%	CH-288

VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTH	N.V. %	VISC.	COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PTHALIC MODIFIER ANH. DRIERS, ETC. IN-FUT
GRV-3058	Modified Alkyd	O-265 O-52 (1% O-27)	Modified P.E. Glycerol Phthalic	S-43	50%	50	Z 2-4	10/11	7-9	7.5	28% VM-345
GRV-3077	Alkyd	O-182	P.E./Glycerol	S-43	48%	70	Z 3	6/7	7	8.3	32%
GRV-3101	Vinyl Toluene Alkyd	O-265 O-268	P.E./Glycerol Phthalic	S-342	35%	60	Y	6/7	7-8	7.6	13.5% CH-288
GRV-3121	Alkyd	O-326	Glycerol Phthalic	S-23	30%	50	Z 2-4	7	4-6	8.4	48%
GRV-3139	Alkyd	O-265 O-268	Glycerol Phthalic	S-23	48%	70	Z 1	5/6	10-11	8.6	35%
GRV-3147	Alkyd	O-265	P.E./Phthalic	S-23	60%	70%	U	6/7	5	8.3	26% Spl V-869
GRV-3171	Styrenated Alkyd	O-52 O-268	Modified P.E./Glycerol Phthalic	S-23	32%	50%	R-S	9	6-11	7.94	21.5% CH-308
GRV-3198	Alkyd	O-52	P.E./Glycerol	S-43	60%	70%		10	5	7.8	26.5%
GRV-3203	Vinyl Toluene Alkyd	O-265 O-268	P.E./Phthalic	S-342 S-57	34%	50	W-X	4	5-6	7.35	13% CH-288
GRV-3205	Modified Styrenated Alkyd	O-265 O-268	Modified P.E. Gl. Phthalic	S-23 S-106	36%	50	W	4	14	8.04	17.5% CH-308 Methyl- Methacrylate
GRV-3244	Alkyd	O-268	Glycerol	S-23	38%	50	X-Y	6	4-10	8.35	38%
GRV-3246	Alkyd	O-326	Glycerol Phthalic	S-23	40%	50	P-Q	4/5	3-4	8.1	35.5%

RJH & PO

ACTIVE VARNISHES 7/15/60 p.6

VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTH	N.V. %	VISC.	ACTIVE VARNISHES 7/15/60 p.6				
								COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PHTHALIC MODIFIER ANH. DRIERS, ETC.	
												IN-PUT
GRV-3262	Modified Alkyd	0-308 0-182	P.E. Phthalic	S-240 S-23	35%	50	Z 1-2	9	20	8.01	26.5%	Tall Oil Abietic Acid Cure 35"-40"
GRV-3265	Modified Alkyd	0-326	P.E./Glycerol Phthalic	S-23 S-1	25%	50	S-U	5/6	16	8.4	45%	QH-204 Cure 35"-40"
GRV-3284	Alkyd	Sylfat 496	P.E./Phthalic	S-138	50%	50	R	4-5	5-6	8.01	26.5%	

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VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTH	N.V. %	VISC.	COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PHENALIC MODIFIER ANH. DRIERS, ETC IN-PUT
VR-41193	SPR Pitch Cut	none	VM-139	S-342 S-43	none	50	19" FC 4	R1	-	7.7	- D-29
VR-45067	Rust Inhibitive Oil	O-3 O-178 O-199	none	S-43 S-48 S-138	100%	50	A	13	3-4	7.28	D-68
VR-46057 (*VR-46105)	R & P Varnish	O-3 O-285	VM-345	S-43, S-57 S-138, S-342	8 gal	44	E-F	13	10	7.3	
VR-48100	Parlon Sol.	none	Parlon 5 CP8	S-6	none	30	A- $\frac{1}{2}$	5/6	-	7.6	
VR-49127	Base for Floor Finishes	O-3, Floor Finishes	VM-477	S-43 S-138	30 gal	50	G	8/9	5-6	7.3	
VR-51107	Talioil Ester	O-308 O-316	Abietic Acid (O308)	S-43	50%	46	T-U	12	9-10	7.32	CH-210 CH-198
VR-52008	Epon Ester Varnish	O-183	VM-584 VM-481	S-128 S-43	45%	42	F-G	12	4	7.38	
VR-53007A	Spl Epon Sealer	O-182	VM-584 VM-294 VM-654	S-106 S-55	30%	55	O	10	3	8.2	
VR-53092	Vinsol Varnish	O-3	VM-288	S-43 S-342, S-6	25 gal	50	S.P.	18+	15	7.5	VM-308
VR-54018	Traffic Zone Vehicle	O-30286	VM-242	S-43 S-342 S-57, S-6	25 gal	50	D-E	11/12	6	7.33	VM-430 VM-432
VR-54056C	Clear Pipe Coating	O-308 O32, O285 (VM-685 VM-696)	Abietic Acid in O-308	S-342 S-43	28 gal	50	C-D	18+	5-6	7.25	VM-520, VM-320 VM-432 VM-433, VM-310
*VR-46105	Moisture Fungus Res. Varnish	O-3	VM-254	S-23	13 gal	42	A/B	8/9	8-10	7.8	

VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTH	N.V. %	VISC.	COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PHENALIC MODIFIER ANH. DRIERS, ETC
VR-55025C	Spar Varnish	O-3 VR-49085	VM-338	S-43 S-138	45 gal	58	F-G	14	17	7.54	VM-530 VM-432 CH-243
VR-55078A	Epon Ester Partial	O3 O183	VM-584	S-56 S-23	30%	50	X-Y	8/9	-	-	
VR-55086	C.C. Epon	none	VM-587	S-6, S-23, S-64, S-50	none	40	Q	-	-	8.4	Vehicle for GL-66203
VR-55098D	Rust Inhibitive Oil ICP. Fishoil	O-308 O32 Fishoil	Abietic Acid in 308 VM-696	S-43, S-138	65 gal	50	A	18+	11	7.37	CH-210, VM-310, VM-320, VM-520, VM-432, VM-433
VR-57002A	Enamel Vehicle	O-3 (VR-49085)	VM-338	S-43 S-138	27 gal	62	K	15	23	7.6	
VR-57014	Rock Spar Varnish	O3, O-9, O-285	VR-915 VM-535	S-43	33 gal	42	E-F	13	6-7	7.36	
VR-58052	Enamel Vehicle	O-3 (VR-49085)	VM-338 VM-331	S-138 S-43	27	64	K	13	23	7.51	

VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTHS	N.V. %	VISC.	COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PTHALIC MODIFIER ANH. DRIERS, ETC
NRV-2937	N. Dr. Alkyd	0323	Glycerol Phthalic	S-23	33%	60	Z 4-6	0-3	4-6	8.6	43% Match for Duraplex ND-77-B
NRV-2344	Nubelite Veh./Alkyd	0-318	Glycerol Phthalic	S-23	33%	50	Y-Z ₁	6	4-10	8.35	42% Cure 30-50"
2KB-596	Tinting Base Vehicle	0268 0323	Glycerol Phthalic	S-23	45%	60	C-D	9/10 (L)5		8.2	30% Cure 2'45" - 3'
2KB-1290	Semi Gloss Varnish	- Y-47		S-43, S-64	-	38.5	45-55" F.C.4	11/12	-	7.43	Sheen 35-40/90
RCR-6023A	Alkyd	Sylfat 496	Glycerol	S-240	46%	30	Z ₂ -Z ₄	14/15	20/25	7.3	* 37.5% Iso-Phthalic
RCR-6033	V T Alkyd	0265/0268	Modified Glycerol Phthalic	Bronco #360	27.5%	50	Z ₁ -Z ₂	12	5	7.5	Vinyl-Toluene
RCR-4037	Coating Resin					54	18-22" FC #4 on N.V.M.	C-4	-	8.68	

VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTHS	N.V. %	VISC.	COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PTHALIC ANH	PTHALIC MODIFIER ANH	DRIERS, ETC
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- BUY OUTS -

2KB-582A	Modified Alkyd	O343 O-3	Modified P.E./Phthalic	S-23	34%	50	V-X	10	3-4	8.28	39%	Match for Aroplaz X-633, X-50
2KB-622	Alkyd	O265	P.E./Glycerol Phthalic (CH-181)	S-23	45%	60	Z ₁ -Z ₃	11/12	8-10	8.6	40%	Non-drying Vinyl Compatible
2KB-500	Epon Ester Nupon	O270	VM-584	S-23	20%	50	V-W	8/9	3-5	7.9	-	

- LATICES & P.V.A. -

VM-674 (XM-52044)	Oil Emulsion Vehicle					48	-	-	-	8.3	-	-
VM-812	P.V.A. Emulsion Vehicle Externally Plastocized					52.5	1000-1400 CPS	Milky White	fr H 4.5-5.5	9.16	-	-
VM-835	Acrylic Copolymer Latex					46.5	Brookfield Milky White Liquid	fr H	8.47			Visc. Brookfield 3/20 RPM 100-400 CPS
XM-58104	P.V.A. Copolymer					50	-	-	-	8.9		PH 4.8
RCR-0301	Industrial Latex					45	300	-	-	8.5		PH 3.0

VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTHS	N.V. %	VISC.	COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PHthalic MODIFIER ANH. DRIERS, ETC. IN-PUT
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- UREAS & MELAMINES -

VM-727	Urea Formaldehyde, slow cure type				60		V-X	WW	2	8.45	- Xylol Tolerance 3000%
VM-732A	Urea Formaldehyde fast cure type				57		V	WW	1-2	8.45	-
GRV-3160	Benzoguanamine - Formaldehyde - Resin S-23/ S-1				60		S-U	WW	0.4	8.62	-
RCR-3003	Butylated - Melamine - Formaldehyde Resin S-23				55		T-W	WW	-1	8.6	-

- GLIDPOLIS -

LRP-2211	Light stable Polyester				71		2450	1	30/34	9.5	-
LRP-3263	Glidpol Isophthalic Molding Resin				61		400 750 CP8	-	12/15	9.1	-
E9RP-2603	Glidpol 2202 Polyester Liquid				70		C.D.	1	29/31	9.3	-
E9RP-2701	Glidpol 1012				70		T-V	1	27/30	9.5	-
E9RP-2764	Glidpol 1001-A, Liquid				70		U-V	1	34/38	9.4	-
E9RP-3078	Glidpol 3078 - Match for Bakelite PLL-5142				68		T-U	-	17/19	9.36	-
E9RP-3079	Glidpol 3079 - Match for Bakelite PLL-5147				68		P-Q	-	18/20	9.3	-
E9RP-3105	#3105 Thixotropic Glidpol Resin Summer Version of E9RP-3099				61		450 750 CP8	-	23/27	9.1	-
RCR-4032A	Ready to Spray Polywood				49		29" FC #4	Pink	-	8.53	- RCR-4020A Blend: RCR-6027
RCR-4041	H I M W Isophthalic				61		2000 2400 CP8	12	-	9.15	- For use on Molding Resin
RCR-4042	H I M W Isophthalic				61		2400 2600 CP8	12/16	-	9.20	- Molding Resin
RCR-4052	Polyester Coating Resin Liquid, Glid Tile System				69		P-R	5	-	9.14	- GLD38210

VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTHS	N.V. %	VISC.	COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PHENALIC MODIFIER ANH DRIERS, ETC	IN-PUT
- OILS -												
O-9	Aged Raw Linseed Oil slightly oxidized heat break free oil					100	J-N	11	3/6	8.0	-	-
O-63	Heavy bleached Linseed Oil Alkali refined, heat bodied					100	Y-Z	5/6	8/10	8.0	-	-
O-65	Light bodied refined Linseed Oil					100	D	5/6	2	7.8	-	-
O-226	Maleic treated Vegetable Oils					100	W-Y	16/18	16/17	8.0	-	CH-198
O-286	Heat bodied Alkali refined Linseed Oil					100	Z ₂ -Z ₄	8	7/10	8.04	-	-
O-398	Treated Soya Bean Oil					100	Z ₁ -Z ₂	8	6.5	8.09	-	-
XM-59899	Water Soluble Linseed Oil & Driers					40	-	-	-	8.4	-	P.H. 8.5
XM-58724A	Water Soluble Linseed Oil					40	-	-	-	8.4	-	P.H. 8.5
RCR-1026	Low Thermal Maleinized Linseed Oil					100	solid	-	80/95	8.6	-	-

VEHICLE #	TYPE	OILS	RESINS	SOLVENTS	OIL LENGTHS %	N.V.	VISC.	COLOR GARDNER	ACID # (SOL)	WEIGHT GAL.	PHTHALIC MODIFIER ANH DRIERS, ETC
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- EMULSION RESINS -

GRV-3170	Alkyd	0308/03	P.E. Glycero Phthalic	Trace S-23	-	98	Solid	-	-	8.6	-
GRV-3092	Emulsion Resin	0216	-	Trace S-23	-	97.5	Solid	-	-	9.2	-
GRV-3140	Modified-Linseed Oil Polyurethane	-	-	-	-	100	Z ₃ -Z ₄	-	-	8.25	-

Cleveland

May 23, 1946

CHEMICAL AND PHYSICAL CONSTANTS
OF STANDARD VARNISHES

At the last Superintendent's Meeting and Technical Meeting in December, a limited number of standard varnishes were picked out and it was agreed these varnishes were to be considered as standard at all plants and development work in so far as possible was to be confined to these varnishes, particularly on formulations which were to be used at other plants.

If a new varnish is to be considered as standard, then one of the standard varnishes should be replaced. Any suggestion of this nature is to be discussed at the next Technical Meeting.

Attached is a booklet which contains the physical and chemical constants of these standard varnishes. Keep in mind these constants are on the original varnishes and the composition may not necessarily be in accord with the present varnishes due to the raw material situation.

However, our standard varnishes have certain definite characteristics and are used for certain definite purposes. Therefore, the properties should at all times remain comparative regardless of the variation in ingredients.

For an example, V-112, regardless of whether it is made with wood oil or dehydrated castor oil, represents a long oil varnish. V-705, regardless of whether it is made with wood oil or Kellin, should represent a neutral varnish of 25 gallon oil length. V-357 represents a varnish 16 to 18 gallon oil length and one which can be used in standard trade sales items with good dry, body and color.

It is up to each department head to see that standard varnishes are first tried in any development work and used wherever possible.

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E. Schulte

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V-57	NN	V-420A	9	V-806	21
V-81	NN	V-433	10	V-813	17
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V-214A	JJ	V-523	12	V-837	21A
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SEPTEMBER 18, 1946

GLD38214

VARNISHES WITHOUT OIL

VARNISH NO.	V-1	V-12-J	V-18	V-37
OIL LENGTH	0	0	0	0
SP/GR WT/GAL.	.949 7.905	.927 7.722	.954 7.947	.987 8.222
NON VOLATILE	61.7%	55.1%	65.2%	52.5%
GALS OIL PER GAL.	0	0	0	0
LBS GUM PER GAL.	VM-484 4.59	VM-71 4.26	VM-256 4.93	VM-248 4.31
GALS RED. PER GAL.	S-43 .459	S-43 .489 S-51 .033	S-43 .099 S-42 .329	S-47 .538
ACID NUMBER	40/50	15.6	55.4	9.3
BODY	S/T	F	S/T	B/D
COLOR	7	4/5L	6L	6
<u>COMPOSITION</u>				
OILS	0	0	0	0
GUMS	VM-484 57.9%	VM-71 55.1%	VM-256 62.1%	VM-248 52.5%
SOLVENTS	S-43 38.3%	S-43 41.8% S-51 3.1%	S-43 8.2% S-42 26.6%	S-47 47.5%
DRIERS	0	0	0	0
MISC.	VM-300 3.8%	0	VM-304 3.1%	0
USES	LOW PRICED PAINTS AND ENAMELS, ALONE OR IN CONJUNCTION WITH OTHER VARNISHES AND OILS. NEUTRALITY TO ZINC OXIDE QUESTIONABLE. IN BLENDS AND LOW PRICED VARNISHES TO SHORTEN OIL LENGTH.	FUME-PROOF PAINTS. COLOR RETENTION EXCELLENT. NEUTRAL TO ZINC OXIDE.	SAME USAGE AS V-1	USED IN CONJUNCTION WITH SPEDENE VARNISHES TO INCREASE GLOSS AND HARDNESS. NEUTRAL TO ZINC OXIDE

APRIL 8, 1946

GLD38215

VARNISHES WITHOUT OIL

- 2 -

VARNISH NO.	V-38	V-46-B	V-57	V-81
OIL LENGTH	0	0	0	0
SP/GR WT/GAL.	.959 7.989	1.00 8.330	.914 7.614	.854 7.114
NON VOLATILE	64.5%	61.7%	39.9%	41.5%
GALS OIL PER GAL.	0	0	0	0
LBS GUM PER GAL.	VM-236 5.15	VM-150 4.83	VM-340 3.04	M-106 2.91
GALS RED. PER GAL.	S-43 .430	S-43 .482	S-23 .633	S-42 .622 S-91 .022
ACID NUMBER	4.3	57.0	19	16.0
BODY	G/H	S/T	B	A
COLOR	5L/5	7L	6L/6	7L/7
<u>COMPOSITION</u>				
OILS	0	0	0	0
GUMS	VM-236 64.5%	VM-158 57.9%	VM-340 39.90%	M-106 40.9%
SOLVENTS	S-43 35.5%	S-43 38.3%	S-23 60.10%	S-42 56.4% S-91 2.1%
DRIERS	0	0	0	0
MISC.	0	VM-304 3.8%	0	CH-44 0.6%
USES	SAME USAGE AS V-1. COLOR RETENTION AND HARDNESS BETTER THAN V-1. NEUTRAL TO ZINC OXIDE.	SAME USAGE AS V-1. USED IN WHITES BECAUSE OF LIGHTER COLOR.	ALUMINUM MIXING LIQUID. USED PRINCIPALLY IN BAKING FINISHES. EXCELLENT LEAF RETENTION. GOOD SALT SPRAY AND HUMIDITY RESISTANCE IN BAKED FINISHES.	FUME-PROOF PAINTS. ALSO MAINTENANCE PAINTS.
			JUNE 21, 1946	APRIL 8, 1946

GLD38216

LONG OIL VARNISHES

VARNISH NO.	V-115-A	V-119-A	V-131-A	V-159
OIL LENGTH	52.3	51.2	20.0	50.0
SP/GR WT/GAL.	.851 7.089	.864 7.197	.892 7.430	.895 7.455
NON VOLATILE	39.6%	43.4%	50.5%	61.3%
GALS OIL PER GAL.	0-3 .145 0-4 .145	0-3 .236 0-48 .045 0-4 .028	0-3 .195 0-4 .084	0-3 .231 0-4 .231
LBS GUM PER GAL.	VM-167 .526 VM-173 .026	VM-154 .561 VM-173 .042	VM-152 1.39	VM-236 .924
GALS RED. PER GAL.	S-43 .648	S-43 .617	S-43 .557	S-43 .437
ACID NUMBER	5.7	10.8	6.0	6.0
BODY	B/C	C	B/C	C
COLOR	5/5L	6/7L	6	6
<u>COMPOSITION</u>				
OILS	0-3 16.0% 0-4 15.8%	0-3 25.7% 0-48 5.0% 0-4 3.0%	0-3 20.6% 0-4 8.7%	0-3 24.3% 0-4 24.0%
GUMS	VM-167 7.4% VM-173 0.4%	VM-154 7.8% VM-173 0.6%	VM-152 18.7%	VM-236 12.4%
SOLVENTS	S-43 60.4%	S-43 56.6%	S-43 49.5%	S-43 38.7%
DRIERS	0	VM-320 1.1%	VM-308 1.5% W-4 0.4%	VM-308 0.3% VM-314 0.3%
MISC.	0	CH-134 0.2%	VM-304 0.6%	0
USES	LONG OIL GRINDING VARNISH. USED IN PAST IN VARNISH SHADING BASES. REACTIVE TO ZINC OXIDE. GENERAL PURPOSE VARNISH.	LONG OIL GRINDING VARNISH. USED IN EXTERIOR AND INTERIOR PAINTS AND ENAMELS. IMPARTS TOUGHNESS AND SPEED OF DRY. QUESTIONABLE REACTIVITY TO ZINC OXIDE. ALSO USED IN FLAT VARNISHES. HARDER DRYING THAN V-115.	MEDIUM OIL GRINDING VARNISH. USED IN INTERIOR AND EXTERIOR PAINTS AND ENAMELS. QUESTIONABLE REACTIVITY TO ZINC OXIDE. GENERAL MIXING USE. GOOD LUSTER AND FULLNESS. ALSO TRY BLEND OF V-115 AND V-1.	LONG OIL GRINDING VARNISH. USED IN INTERIOR AND EXTERIOR PAINTS AND ENAMELS. NEUTRAL TO ZINC OXIDE. USED IN VARNISH SHADING BASES, VARNISH BLENDS AND FINISHING COACH VARNISH.

APRIL 8, 1946

GLD38217

LONG OIL VARNISHES

-4-

VARNISH NO.	V-177-A			
OIL LENGTH	37.0			
SP/GR WT/GAL.	.875 7.289			
NON VOLATILE	46.3%			
GALS OIL PER GAL.	0-3 .313			
LBS GUM PER GAL.	VM-154 .127 VM-174 .720			
GALS RED. PER GAL.	S-43 .593			
ACID NUMBER	11.0			
BODY	G/H			
COLOR	5/7			
<u>COMPOSITION</u>				
OILS	0-3 33.74%			
GUMS	VM-174 9.87% VM-154 1.74%			
SOLVENTS	S-43 53.7%			
DRIERS	VM-308 0.92% CH-146 0.03%			
MISC.	0			
USES	MEDIUM LONG OIL SPAR VARNISH. USED IN SOME INSULATING ENAMELS. REACTIVE TO ZINC OXIDE.			

APRIL 8, 1946

GLD38218

SHORT OIL VARNISHES

VARNISH NO.	V-202-A	V-206-A	V-214-A	V-223
OIL LENGTH	7.9	7.0	14.1	5.3
SP/GR WT/GAL.	.920 7.664	.870 7.247	.865 7.206	.870 7.247
NON VOLATILE	58.3%	47.0%	42.5%	48.5%
GALS OIL PER GAL.	0-3 .210	0-3 .154	0-40 .162 0-41 .036	0-17 .126
LBS GUM PER GAL.	VM-167 .210 VM-173 .038 VM-154 2.41	VM-44 2.20	VM-28 .677 VM-7 .261 VM-12 .365 VM-167 .104	VM-13 1.18 VM-158 1.18
GALS RED. PER GAL.	S-43 .454 S-19 .025	S-43 .533 S-51 .044	S-51 .031 S-43 .594	S-42 .503 S-43 .079
ACID NUMBER	30.1	22.5	10.8	11.7
BODY	G	G	A	C
COLOR	6/7L	6/7L	9	9L
COMPOSITION				
OILS	0-3 21.54%	0-3 16.7%	0-40 18.81% 0-41 3.98%	0-17 13.36%
GUMS	VM-167 2.74% VM-173 .49% VM-154 31.55%	VM-44 30.4%	VM-28 9.40% VM-7 3.62% VM-12 5.10% VM-167 1.44%	VM-13 16.26% VM-158 16.26%
SOLVENTS	S-43 39.11% S-19 2.54%	S-43 48.0% S-51 4.4%	S-51 3.11% S-43 54.40%	S-42 44.68% S-43 7.16%
DRIERS	0	VM-432-A 0.25% D-68 0.25%	VM-308 0.14%	VM-191 0.65%
MISC.	VM-304 2.03%	0	0	VM-304 1.63% "
USES	SHORT OIL MIXING VARNISH. USED TO HARDEN AND INCREASE GLOSS IN CONJUNCTION WITH OTHER VARNISHES AND OILS. REACTIVE TO ZINC OXIDE. ALSO USED IN BLENDS, RUBBING AND POLISHING VARNISHES.	RUBBING AND POLISHING VARNISH, IN BLENDS. ON HIGH GRADE FURNITURE. WILL ALSO GIVE FALSE BODY IN CERTAIN VARNISH MIXES. HARD DRYING	GRINDING VARNISH USED IN CONJUNCTION WITH OTHER OILS AND VARNISHES TO IMPART HARDNESS AND INCREASE DRY. QUESTIONABLE REACTIVITY TO ZINC OXIDE. IN RUBBING VARNISHES. PRINCIPAL USE IN UNDERCOATS AND HARD DRYING VARNISH BLENDS.	SHORT OIL GRINDING VARNISH. USED IN CONJUNCTION WITH OTHER VARNISHES AND OILS TO IMPART HARDNESS. USED IN MACHINERY ENAMELS FOR INTERIOR USE DUE TO EXCELLENT OIL RESISTANCE. QUESTIONABLE REACTIVITY TO ZINC OXIDE. GOOD LUSTER AND HARD DRYING.

APRIL 8, 1946

GLD38219

SHORT OIL VARNISHES

VARNISH NO.	V-225	V-236	V-243	V-250-L
OIL LENGTH		15.0	3.1	19.0
SP/GR WT/GAL.		.882 7.347	1.076 8.967	.972 8.097
NON VOLATILE		47.8%	80.2%	38.3%
GALS OIL PER GAL.		0-3 .241	0-217 .180	0-146 .059 0-3 .171
LBS GUM PER GAL.		VM-240 1.61	VM-236 5.75	VM-154 1.17 VM-173 .031
GALS RED. PER GAL.		S-43 .562	S-23 .246	S-43 .757
ACID NUMBER		5.9	5.4	20.8
BODY		F	X	G
COLOR		6	6/7L	6L
COMPOSITIONS				
OILS		0-3 25.72%	0-217 16.11%	0-146 5.79% 0-3 16.49%
GUMS		VM-240 21.84%	VM-236 64.10%	VM-154 14.48% VM-173 0.39%
SOLVENTS		S-43 50.67%	S-23 19.79%	S-43 61.74%
DRIERS		D-44 1.44% VM-308 0.22% VM-193 0.11%	0	VM-193 0.24%
MISC.		0	0	VM-304 0.87%
USES	USED WITH OTHER OILS AND VARNISHES TO REDUCE COST. DUE TO VARIABLE COMPOSITION CARE SHOULD BE EXERCISED AS TO ITS USAGE. REACTIVE TO ZINC OXIDE GENERALLY.	USED LARGELY IN INTERIOR ENAMELS ALONE OR WITH OTHER VARNISHES OR OILS. IMPARTS HARDNESS AND GLOSS. REACTIVITY TO ZINC OXIDE QUESTIONABLE. USED AS FAST DRYING FLOOR AND INTERIOR VARNISH.	USED AS A RESINOUS CONSTITUENT IN LACQUERS.	USED IN INTERIOR AND EXTERIOR PAINTS AND ENAMELS. ALONE OR CONJUNCTION WITH OTHER VARNISHES AND OILS. LOW COST MIXING VARNISH IMPARTS HARDNESS AND GLOSS. REACTIVE TO ZINC OXIDE. USED IN FLATS, INTERIOR, AND FLOOR VARNISHES.

APRIL 8, 1946

GLD38220

SHORT OIL VARNISHES

VARNISH NO.	V-303-A	V-308	V-309	V-318
OIL LENGTH	12.0	10.0	10.0	15.0
SP/GR WT/GAL.	.889 7.405	.886 7.380	.854 7.114	.870 7.247
NON VOLATILE	45.6%	46.1%	39.8%	50.2%
GALS OIL PER GAL.	0-3 .198 0-60 .009	0-3 .188	0-3 .158	0-63 .099 0-3 .149
LBS GUM PER GAL.	VM-345 1.55 VM-167 .172	VM-44-A 1.88	VM-332 1.58	VM-346 1.66
GALS RED. PER GAL.	S-43 .198 S-104 .379	S-43 .602	S-60 .158 S-43 .238 S-57 .206 S-2 .032	S-43 .546
ACID NUMBER	18.7	9.1	8.8	9.8
BODY	N	J	A-1	K
COLOR	5L/6	9	5/6	5L/5
COMPOSITION				
OILS	0-3 20.98% 0-60 0.91%	0-3 20.01%	0-3 17.49%	0-3 16.16% 0-63 10.99%
GUMS	VM-345 20.93% VM-167 2.33%	VM-44-A 25.49%	VM-332 22.27%	VM-346 22.85%
SOLVENTS	S-43 17.65% S-104 36.73%	S-43 53.83%	S-60 16.03% S-43 22.05% S-57 17.68% S-2 3.31%	S-43 49.77%
DRIERS	VM-325 0.47%	VM-310 0.08% CH-146 0.18%	D-30 0.50% D-44 0.28% D-29 0.39%	VM-325 0.23%
MISC.	0	VM-304 0.41%	0	0
USES	RUBBING AND POLISHING VARNISH. QUICKER DRYING THAN CORRESPONDING FOSSIL RESIN VARNISHES	BAKING VARNISH FOR FOOD CONTAINERS.	SHORT OIL MIXING VARNISH. USED IN HARD, FAST DRYING INTERIOR FINISHES. IMPARTS HARDNESS, GLOSS AND CHEMICAL RESISTANCE. AS AN ADDITION TO EXTERIOR FINISHES TO AID DRY. REACTIVE TO ZINC OXIDE. ALSO USED AS RUBBING AND POLISHING VARNISH, FOR BAR-TOPS, GOOD ALCOHOL RESISTANCE.	USED IN INTERIOR AND EXTERIOR FINISHES. GOOD COLOR RETENTION IN WHITES. REACTIVE TO ZINC OXIDE. MAY ALSO BE USED ON LOW BAKES.

APRIL 8, 1946

GLD 38 221

SHORT OIL VARNISHES

-8-

VARNISH NO.	V-322	V-323	V-331	V-357
OIL LENGTH	20.0	10.0	3.7	15.0
SP/GR WT/GAL.	.912 7.600	.869 7.239	.918 7.650	.918 7.650
NON VOLATILE	61.5%	40.4%	50.4%	52.9%
GALS OIL PER GAL.	0-3 .364	0-3 .163	CH-134 .008 0-52 1.049 0-183 .007	0-289 .273
LBS GUM PER GAL.	VM-407 1.82	VM-186 .163 VM-234 .163 VM-65 1.306	VM-481 2.099 CH-198 .394 CH-134 .412	VM-50 1.82
GALS RED. PER GAL.	S-42 .455	S-43 .652	S-43 .146 S-42 .439	S-43 .546
ACID NUMBER	8.9	9.6	11/17	8.3
BODY	T	D	V/W	H
COLOR	4	9	5/6L	7
COMPOSITION				
OILS	0-3 37.56%	0-3 17.71%	0-52 10.66% 0-183 .64% CH-134 1.13%	0-289 29.09%
GUMS	VM-407 23.92%	VM-186 2.26% VM-234 2.26% VM-65 18.05%	VM-481 27.45% CH-198 5.15% CH-134 5.38%	VM-50 23.80%
SOLVENTS	S-42 38.52%	S-43 59.56%	S-43 12.63% S-42 36.96%	S-43 47.11%
DRIERS	0	VM-191 0.16%	0	0
MISC.	0	0	0	0
USES		SHORT OIL MIXING VARNISH. USED IN INTERIOR AND EXTERIOR FINISHES IN CONJUNCTION WITH OTHER VARNISHES AND OILS. GOOD FLOW AND STABILITY IN DIPPING FINISHES. QUESTIONABLE NEUTRALITY TO ZINC OXIDE. GOOD LUSTER AND DRY MILD ALKALI RESISTANCE. DARK IN COLOR. GOOD ELASTICITY CONSIDERING OIL LENGTH.	SHORT OIL MIXING VARNISH. USED IN INTERIOR AND EXTERIOR FINISHES. IMPARTS SPEED OF DRY AND HARDNESS WHEN USED WITH OTHER VARNISHES AND OILS. REACTIVE TO ZINC OXIDE. USED IN RUBBING AND POLISHING VARNISHES. BASE OF VARNISH IS USED IN EMULSION VARNISHES.	MIXING AND GRINDING VARNISH. USED IN INTERIOR AND EXTERIOR FINISHES IN CONJUNCTION WITH OTHER VARNISHES AND OILS. GOOD COLOR RETENTION IN WHITES. QUESTIONABLE NEUTRALITY TO ZINC OXIDE DEPENDING UPON RESIN USED. USED AS AN ALL PURPOSE VARNISH.

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BLACK VARNISHES AND ASPHALTUMS

VARNISH NO.	V-405	V-409	V-411	V-420-A
OIL LENGTH	0	16.8	3.6	4.0
SP/GR WT/GAL	.871 7.255	.876 7.297	.870 7.247	.879 7.322
NON VOLATILE	43.3%	53.6%	40.8%	44.6%
GALS OIL PER GAL.	0	0-2 .277	0-60 .079	0-63 .098
LBS GUM PER GAL.	VM-106 2.83 VM-158 .316	VM-106 1.65	VM-106 1.77 VM-158 .442 VM-173 .019	VM-137 2.46
GALS RED. PER GAL.	S-43 .092 S-42 .545	S-48 .028 S-42 .495	S-43 .650	S-43 .614
ACID NUMBER				
BODY	#4 FORD @ 70°F 9'11' BAUME' 29°/32°	#4 FORD @ 70°F 2'5' BAUME' 29°	#4 FORD @ 70°F 1'2' BAUME' 30.5°/31.5°	#4 FORD @ 70°F 3'5' BAUME' 29°/35°
COLOR				
COMPOSITION				
OILS	0	0-2 29.53%	0-60 8.56%	0-63 10.75%
GUMS	VM-106 38.94% VM-158 4.36%	VM-106 22.61%	VM-106 24.42% VM-158 6.11% VM-173 0.26%	VM-137 33.55%
SOLVENTS	S-43 8.36% S-42 48.34%	S-48 2.67% S-42 43.68%	S-43 59.23%	S-43 55.36%
DRIERS	0	BN-19 1.51%	VM-310 0.95% BN-19 0.47%	VM-310 0.34%
MISC.	0	0	0	0
USES	USED ALONE OR IN CONJUNCTION WITH OTHER BLACK VARNISHES, PIGMENTED OR UNPIGMENTED. IMPARTS HARDNESS AND GLOSS.	USED AS A BLACK BAKING JAPAN. GOOD GLOSS AND HARDNESS, HIGH LUSTRE. PRINCIPAL USE IN BAKING JAPAN BLENDS.	HARD DRYING BLACK VARNISH. USED IN CONJUNCTION WITH OTHER BLACK VARNISHES TO IMPART HARDNESS, GLOSS AND GASOLINE RESISTANCE. DOES NOT BLEED. ALSO TO SHORTEN JAPANS OR LOW BAKE BLENDS (225-250°F).	HARD DRYING BLACK VARNISH. IMPARTS TOUGHNESS TO OTHER BLACK VARNISHES, ALSO FULLNESS, AND LUSTER. GENERALLY USED IN LOW BAKES.

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BLACK VARNISHES AND ASPHALTUMS

VARNISH NO.	V-433	V-445	V-450	V-460
OIL LENGTH	20.0	18.6	8.7	8.3
SP/GR WT/GAL.	.885 7.372	.931 7.753	.908 7.564	.939 7.833
NON VOLATILE	50.1%	59.7%	54.4%	57.3%
GALS OIL PER GAL.	0-3 .279	0-52 .311 0-79 .026	0-60 .213	0-3 .058 0-52 .163
LBS GUM PER GAL.	VM-136 .697 VM-158 .697	VM-106 1.81	VM-137 1.12 VM-110 1.12 VM-158 .209	VM-106 2.51 VM-158 .175
GALS RED. PER GAL.	S-43 .558	S-43 .233 S-48 .233	S-48 .124 S-42 .298 S-47 .089	S-43 .507
ACID NUMBER				
BODY	#4 FORD @ 85°F 1 1/2"	400" #4 CUP	#4 FORD @ 85°F 1 1/2"	0
COLOR				
COMPOSITION				
OILS	0-3 29.69%	0-52 31.16% 0-79 2.79%	0-60 21.94%	0-3 5.83% 0-52 16.16%
GUMS	VM-136 9.46% VM-158 9.46%	VM-106 23.40%	VM-137 14.79% VM-110 14.79% VM-158 2.77%	VM-106 31.95% VM-158 2.23%
SOLVENTS	S-43 49.92%	S-43 19.84% S-48 20.48%	S-48 11.19% S-42 25.86% S-47 8.51%	S-43 42.73%
DRIERS	VM-308 0.85% CH-146 0.17%	VM-310 0.33% BN-19 2.00%	BN-41 0.15%	VM-320 0.55% VM-310 0.55%
MISC.	CH-134 0.45%	0	0	0
USES	MEDIUM OIL BLACK VARNISH. IMPARTS TOUGHNESS AND INCREASED DURABILITY WHEN USED IN CONJUNCTION WITH OTHER VARNISHES AND OILS IN EXTERIOR BLACK ENAMELS. DOES NOT BLEED. IMPARTS STABILITY TO PIGMENTED BLACK ENAMELS.		BLACK BAKING JAPAN GOOD DURABILITY AND GLOSS. USED ALONE OR WITH OTHER BLACKS. EXCELLENT GLOSS.	INEXPENSIVE BAKING JAPAN FOR SPRINGS, HAIR PINS, ETC.

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BLACK VARNISHES AND ASPHALTUMS

VARNISH NO.	V-472	V-489	V-497	
OIL LENGTH	0	9.9	5.4	
SP/GR WT/GAL.	.901 7.508	.886 7.380	.918 7.655	
NON VOLATILE	33.3%	49.0%	45.1%	
GALS OIL PER GAL.	0	0-131 .153 0-5 .049	0-64 .046 0-60 .083	
LBS GUM PER GAL.	VM-106 2.50	VM-137 2.04	VM-129 2.09 VM-146 .326	
GALS RED. PER GAL.	S-48 .083 S-47 .063 S-43 .604	S-48 .255 S-43 .306	S-48 .279 S-43 .349	
ACID NUMBER				
BODY	B	#4 FORD @ 75°F 2 1/4"	BE' - 29° #4 FORD @ 80°F 7'55"	
COLOR				
COMPOSITION				
OILS	0	0-131 16.05% 0-5 5.09%	0-64 4.99% 0-60 8.48%	
GUMS	VM-106 33.30	VM-137 27.68%	VM-129 27.35% VM-146 4.26%	
SOLVENTS	S-48 7.56% S-47 6.04% S-43 53.10%	S-48 23.57% S-43 27.40%	S-48 24.83% S-43 30.09%	
DRIERS	0	VM-310 0.21%	0	
MISC.	0	0	0	
USES		BLACK BAKING JAPAN TYPE. USED ALONE OR IN CONJUNCTION WITH OTHER BLACK VARNISHES EITHER PIGMENTED OR UNPIGMENTED. EXCELLENT FLOW, TOUGHNESS AND HEAT RESISTANCE.	USED IN BLACK BAKING JAPANS ALONE OR IN CONJUNCTION WITH OTHER BLACKS WITH OR WITHOUT PIGMENTS.	
		APRIL 8, 1946	SEPTEMBER 18, 1946	

VARNISH NO.	V-513	V-523	V-524	V-531
OIL LENGTH	49.8	200	—	6.0
SP/GR WT/GAL.	.816 6.797	.893 7.439	.838 6.981	.940 7.830
NON VOLATILE	32.3%	61.8%	38.2%	38.8%
GALS OIL PER GAL.	0-6 .104 0-3 .092	0-3 .538	0-63 .326	0-136 .122
LBS GUM PER GAL.	VM-158 .386 VM-173 .009	VM-167 .269	0	VM-294 2.04
GALS RED. PER GAL.	S-42 .715	S-43 .430	S-43 .652	S-47 .661
ACID NUMBER	11.6	6.7	3.4	7.7
BODY	A-2½	E	D	A-1/A
COLOR	6/8L	6/7L	5L/5	7/8L
<u>COMPOSITION</u>				
OILS	0-6 11.89% 0-3 14.17%	0-3 56.75%	0-63 37.40%	0-136 12.59%
GUMS	VM-158 5.68% VM-173 0.13%	VM-167 3.62%	0	VM-294 26.04%
SOLVENTS	S-42 67.73%	S-43 38.18%	S-43 61.62%	S-47 61.18%
DRIERS	VM-310 0.08% VM-308 0.24%	VM-308 1.16% BN-19 0.29%		VM-250 0.14% VM-314 0.05%
MISC.	VM-304 0.08%	0	VM-304 0.98%	0
USES	LONG OIL REDUCING OIL. USED IN CONNECTION WITH OTHER VARNISHES AND OILS TO LENGTHEN. QUESTIONABLE REACTIVITY TO ZINC OXIDE. USED IN THE PAST AS A REDUCING OIL FOR PASTE PAINTS. ALSO IN LOW PRICED BLENDS.	EXTRA LONG OIL MIXING VARNISH. USED IN CONNECTION WITH OTHER VARNISHES AND OILS. LARGELY USED FOR PRIMERS FOR WOOD. SOME USE FOR METAL PRIMERS. REACTIVE TO ZINC OXIDE. A REINFORCING VARNISH IN EXTERIOR PRIMERS. IMPARTS DRY AND MOISTURE RESISTANCE. TO TOUGHEN VARNISH BLENDS.	TREATED LINSEED OIL. USED IN PAST IN WALL FINISHES AND UNDERCOATS. NEUTRAL TO ZINC OXIDE. GIVES MINIMUM AMOUNT OF LUSTER. USED IN GLAZING LIQUIDS AND FLAT WALL LIQUIDS.	SHORT OIL MIXING VARNISH. USED LARGELY IN READY MIXED ALUMINUM PAINTS. EXCELLENT STABILITY IN SAID ALUMINUM.

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PREPARED OILS, PAINT OILS, ELIXIRS, ETC.

VARNISH NO.	V-557			
OIL LENGTH	—			
SP/GR WT/GAL.	.875 7.289			
NON VOLATILE	64.5%			
GALS OIL PER GAL.	0-3 .235 0-178 .364			
LBS GUM PER GAL.	0			
GALS RED. PER GAL.	S-43 .392			
ACID NUMBER	6.7			
BODY	C			
COLOR	3L/7			
COMPOSITION				
OILS	0-3 25.32% 0-178 38.96%			
GUMS	0			
SOLVENTS	S-43 35.48%			
DRIERS	0			
MISC.	VM-304 0.24%			
USES	TREATED OILS USED LARGELY FOR LENGTH- ENING PURPOSES WITH OTHER OILS AND VAR- NISHES. QUESTIONABLE NEUTRALITY TO ZINC OXIDE.			

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LONG OIL VARNISHES

VARNISH NO.	V-700	V-705	V-706	V-707
OIL LENGTH	51.9	25.0	50.0	25.0
SP/GR WT/GAL.	.882 7.349	.875 7.289	.891 7.422	.875 7.289
NON VOLATILE	57.7%	43.1%	54.3%	43.1%
GALS OIL PER GAL.	0-3 .191 0-4 .238	0-3 .262	0-3 .289 0-52 .032 0-163 .080	0-3 .262
LBS GUM PER GAL.	VM-167 .032 VM-158 .794	VM-236 1.05	VM-150 .803	VM-236 1.05
GALS RED. PER GAL.	S-42 .450 S-43 .014	S-43 .628	S-43 .514	S-43 .628
ACID NUMBER		5.2	21.2	10.5
BODY	U/W	C	I	K
COLOR	5	5/6	5	5L/5
COMPOSITION				
OILS	0-3 20.36% 0-4 25.19%	0-3 28.17%	0-3 30.57% 0-52 3.35% 0-163 8.76%	0-3 28.18%
GUMS	VM-158 10.81% VM-167 0.43%	VM-236 14.36%	VM-150 10.82%	VM-236 14.36%
SOLVENTS	S-42 39.44% S-43 1.29%	S-43 56.86%	S-43 45.70%	S-43 56.86%
DRIERS	VM-325 0.43% D-30 0.42% D-68 1.14%	VM-308 0.36% VM-314 0.03%		VM-308 0.36% VM-314 0.02%
MISC.	VM-304 0.49%	VM-304 0.22%	W-22 0.19% ZNO PASTE 0.61%	VM-304 0.22%
USES	SPAR VARNISH FOR EXTERIOR FINISHING.	GENERAL PURPOSE GRINDING AND MIXING VARNISH. NEUTRAL TO ZINC OXIDE. USED IN DIPPING PRIMERS IN CONJUNCTION WITH OTHER VARNISHES AND OILS. PALER COLOR OR PIGMENTED GOODS THAN CORRESPONDING LIME ROSIN VARNISH.	GENERAL PURPOSE GRINDING AND MIXING VARNISH. REACTIVE TO ZINC OXIDE. USED IN CONJUNCTION WITH OTHER VARNISHES AND OILS IN INTERIOR OR EXTERIOR FINISHES. GOOD FLOW ON DIPPING. SUPERIOR TO V-115 FOR BODY AND LUSTER.	SAME AS V-705. HEAVIER VISCOSITY. QUESTIONABLE REACTIVITY TO ZINC OXIDE.

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LONG OIL VARNISHES

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VARNISH NO.	V-715	V-722	V-725	V-735
OIL LENGTH	53.1	25.0	20.0	28.6
SP/GR WT/GAL.	.865 7.206	.914 7.614	.902 7.514	.922 7.680
NON VOLATILE	39.6%	60.5%	55.8%	57.8%
GALS OIL PER GAL.	0-3 .171 0-4 .124	0-171 .379	0-3 .322	0-253 .371
LBS GUM PER GAL.	VM-167 .534 VM-173 .021	VM-43 1.52	VM-294 1.29 VM-330 .322	VM-167 1.24 VM-173 .062
GALS RED. PER GAL.	S-43 .658	S-43 .455	S-47 .081 S-43 .403	S-43 .346 S-42 .148
ACID NUMBER	7.7	26.7	3.4	24.0
BODY	R	S	F/G	T
COLOR	5/6L	7L/7	7L/7	9L/9
<u>COMPOSITION</u>				
OILS	0-3 18.63% 0-4 13.37%	0-171 40.41%	0-3 33.72%	0-253 38.96%
GUMS	VM-167 7.41% VM-173 .30%	VM-43 19.93%	VM-294 17.18% VM-330 4.30%	VM-167 16.09% VM-173 0.81%
SOLVENTS	S-43 60.29%	S-43 39.46%	S-47 7.79% S-43 35.44%	S-43 29.74% S-42 12.43%
DRIERS	0	VM-191 0.20%	D-5 1.57%	VM-308 0.81%
MISC.	0	0	0	CH-175 1.16%
USES	HEAVY BODIED LONG OIL MIXING VARNISH. REACTIVE TO ZINC OXIDE. IMPARTS BODY AND GLOSS. USED IN CONJUNCTION WITH OTHER VARNISHES AND OILS. USED IN BLENDS SUCH AS ROCKSPAR. BODIED V-115.	PALE FINISHING VARNISH, USED ALSO AS A BAKING FOOD CONTAINER VARNISH.	MEDIUM OIL MIXING VARNISH. IMPARTS HARDNESS, ALKALI, AND ACID RESISTANCE TO FINISHES. USED IN CONCRETE FLOW PAINTS, ACID AND ALKALI MAINTAINANCE FINISHES. REACTIVE TO ZINC OXIDE.	USAGE SIMILAR TO V-715. USED LARGELY IN CONJUNCTION WITH OTHER VARNISHES AND OILS IN EXTERIOR FINISHES. REACTIVE TO ZINC OXIDE. MAY ALSO BE USED IN SHORT BAKE DIPPING ENAMELS.

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LONG OIL VARNISHES

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VARNISH NO.	V-717	V-742	V-757	
OIL LENGTH	50.0	42.8	23.2	
SP/GR WT/GAL.	.916 7.626	.915 7.621	.894 7.451	
NON VOLATILE	65.4%	61.9%	52.1%	
GALS OIL PER GAL.	0-273 .320 0-269 .100 0-163 .080	0-27 .102 0-3 .359	0-52 .306 0-183 .152 CH-134 .001	
LBS GUM PER GAL.	VM-227 .800 VM-213 .200	VM-330 1.08	VM-481 .978 CH-198 .184 CH-134 .221	
GALS RED. PER GAL.	S-43 .400	S-47 .057 S-90 .057 S-43 .316	S-43 .541	
ACID NUMBER	26.2	17.5	6.2	
BODY	V/W	E	C/D	
COLOR	6	5/6L	4/6	
COMPOSITION				
OILS	0-273 33.36% 0-269 10.43% 0-163 8.48%	0-27 10.76% 0-3 37.01%	0-52 31.87% 0-183 1.53% CH-134 0.16%	
GUMS	VM-227 10.49% VM-213 2.62%	VM-330 14.16%	VM-481 13.13% CH-198 2.46% CH-134 2.98%	
SOLVENTS	S-43 34.62%	S-47 5.39% S-90 5.37% S-43 27.31%	S-43 47.88%	
DRIERS	0	0	0	
MISC.	0	0	0	
USES	MIXING VARNISH USED LARGELY IN SILK SCREEN STENCIL PASTES. JUNE 21, 1946	BAKELITE SPAR VARNISH. APRIL 8, 1946	CLECO TYPE VARNISH USED ALONE OR IN COMBINATION WITH V-331. TO MAKE HARD DRYING GLOSS FINISHES. JUNE 21, 1946	

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VARNISH NO.	VR-46029	VR-43060	VR-44100	VR-45037
OIL LENGTH	11.7	11.2	11.6	14.0
SP/GR WT/GAL.	.922 7.679	.866 7.210	.876 7.295	.938 7.812
NON VOL.	80.3%	46.7%	46.5%	100.0%
BODY	W/X	O/P	U	Z ₆ + 17' 10" 8 720F
ACID NUMBER	4.9	25.0	2.7	23.5
COLOR	6/7L	9+	9+	9
LBS OIL PER GAL.	2.91	1.59	1.62	4.13
LBS RESIN PER GAL.	3.11	1.77	1.74	3.68
LBS RED. PER GAL.	S-43 1.51	S-43 3.84	S-43 3.91	
<u>THEO. COMPOSITION</u>				
OIL	VM-569 70.64%	LIQRO 38.01%	LIQRO 37.87%	VM-569 79.54% O-3 10.46%
MALEIC CMPDS.		CH-198 3.62%		
POLYHYDRIC ALCOHOLS	CH-210 10.60%	CH-210 6.33%	CH-210 6.31%	CH-134 7.95%
GUMS				VM-251 1.39% CH-146 0.66%
CH-210				
CH-188			CH-188 3.97%	
% SOLVENTS	S-43 18.76%	S-43 52.04%	S-43 51.85%	
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	VM-569 47.11%	LIQRO 47.30%	LIQRO 47.88%	VM-569 41.99% O-3 10.93%
GUMS	VM-569 50.42%	LIQRO 40.72%	LIQRO 41.20%	VM-569 44.94% VM-251 1.46% CH-146 0.69%
POLY-ALCOHOLS EXCESS	CH-210 2.47%		CH-210 0.71%	
G.M.				
G.S.				
PEM		11.98%		
PES			10.21%	

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VARNISH NO.	VR-46029	VR-43060	VR-44100	VR-45037
USES	REVISION OF VR-43195. FLAT WALL PAINT VEHICLE.	TALL OIL VARNISH GIVING HARDER AND SHORTER FINISHES THAN VR-44100. BAKING TIMES VARY FROM 1/2 HOUR AT 250°F. TO 15 MIN. AT 350°F. WHEN USED IN INFRA-RED BAKING IT MUST BE MODIFIED WITH UREA-MELAMINE OR MELAMINE RESIN SOLUTIONS. TOLERATES UREA-MELAMINE (VM-391 TYPE) AND MELAMINE (VM-646 TYPE). TYPICAL USE IS 40-E-1004. IMITATION ALUMINUM ENAMEL.	TALL OIL VARNISH GIVING TOUGHER FINISHES THAN VR-43060. USED, TO SOME EXTENT, IN AIR DRY FINISHES. BAKING TIMES SAME AS FOR VR-43060. TOLERATES MALAMINE ONLY (VM-646 TYPE) TYPICAL USE IS GL-52067 TELEPHONE BLACK ENAMEL.	USED AS A VEHICLE IN SPRED PAINTS.

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VARNISH NO.	VR-41193	VR-45086	VR-45054	VR-45046
OIL LENGTH	0	—	0	20.0
SP/GR. WT/GAL.	.935 7.787	.985 8.207	.983 8.190	.929 7.735
NON VOLATILE	48.8%	100.0%	52.8%	62.2%
GALS OIL PER GAL.	0	0-52 .988	0	0-251 .364
LBS GUM PER GAL.	VR-41180 3.80	0	E-7-B PITCH 4.33	KRUMBHAAR #333 1.82
GALS RED. PER GAL.	S-42 .608	0	S-48 .567	S-42 .455
ACID NUMBER	—	26.0	—	6.1
BODY	#4 FORD CUP @ 77°F 35"/40"	PASTY	#4 FORD CUP @ 77°F 4"30"	W
COLOR	—	9 +	—	6/7L
<u>COMPOSITION</u>				
OILS	0	0-52 93.50%	0	0-251 38.64%
GUMS	VR-41180 48.83%	—	E-7-B PITCH 52.82%	KRUMBHAAR #333 23.51%
SOLVENTS	S-42 50.29%	—	S-48 47.18%	S-42 37.85%
DRIERS	D-29 0.88%	VM-310 6.50%	0	0
MISC.	0	0	0	0
USES	SEE COMMENTS UNDER VR-41240 ALSO USED TO REDUCE OIL CONTENT IN VARIOUS PAINTS. 2-A-DAY FREIGHT CAR PAINTS IS PRINCIPAL USE.	HEAVY MANGANESE OIL USED IN PINE TREE WRINKLE FINISHES.	PITCH CUT IN KEROSENE USED FOR BLENDING WITH OTHER BLACK VARNISHES NON-BLEEDING AND GASOLINE RESISTANT IN BAKED FINISHES. HEAT RESISTANCE GOOD	WRINKLE CLEAR USED IN COMBINATION WITH VR-45086 IN CLEAR PINE TREE WRINKLE FINISHES.

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VARNISH NO.	VR-44131	VR-44141	VR-42004	VR-41240
OIL LENGTH	8.0	12.0	28.0	0
SP./GR. WT./GAL.	.912 7.597	.903 7.522	.903 7.522	.968 8.063
NON VOLATILE	50.1%	49.9%	50.5%	48.6%
GALS OIL PER GAL.	VR-43185 .186	0-299 .231	0-273D .163 VR-41160 .163	0
LBS GUM PER GAL.	VM-538 2.32	VM-538 1.92	VM-346 1.05 VM-227 .116	VR-41180 3.92
GALS RED. PER GAL.	S-43 .348 S-42 .232	S-43 .336 S-42 .240	S-90 .058 S-43 0.50	S-48 .608
ACID NUMBER	7.6	7.1	12.7	—
BODY **	P/Q	R	S/T	#4 FORD CUP @ 77°F 4'30"
<u>% COMPOSITION</u>				
OILS	VR-43185 19.47%	0-299 24.39%	0-273-D 17.21% VR-41160 17.79%	0
GUMS	VM-538 30.57%	VM-538 25.54%	VM-346 13.91% VM-227 1.54%	VR-41180 48.64%
SOLVENTS	S-43 30.27% S-42 19.69%	S-43 29.51% S-42 20.56%	S-90 5.60% S-43 43.87%	S-48 51.36%
DRIERS	0	0	0	0
MISC.	0	0	W-22 0.08%	0
USES	HARD DRYING VARNISH USED PRINCIPALLY IN FLAT VARNISHES IN COMBINATION WITH VR-44141	SAME AS VR-44131	PALE MIXING VARNISH USED PRINCIPALLY IN ROLLER COATING FINISHES	PITCH CUT IN KEROSENE, USED FOR BLENDING WITH OTHER BLACK VARNISHES AND OLEORESINOUS VARNISHES. NON- BLEEDING AND GASOLINE RESISTANT IN BAKED FINISHES. HEAT RESISTANCE GOOD.
** COLOR	6/7L	8L	5	

JUNE 21, 1946

VARNISH NO	VR-44043	VR-44208	VR-42158	VR-44094
OIL LENGTH	100.0	8.0	15.0	28.0
SP/GR WT/GAL.	.893 7.440	.889 7.406	.922 7.679	.968 8.065
NON VOLATILE	57.8%	39.6%	49.3%	50.3%
GALS OIL PER GAL.	0-273 .333 0-269 .143	0-299 .143	VR-41160 .043 0-282 .214	VR-44093 .326
LBS GUM PER GAL.	VM-227 .476	VELSICOL AB-11-4 1.79	VM-345 1.71	PENTALYN A 1.16
GALS RED. PER GAL.	S-43 .476	S-43 .268 S-42 .215 S-54 .072 S-138 .089	S-43 .427 S-104 .128	S-138 .058 S-43 .500
ACID NUMBER	14.3	2.9	25.8	4/6
BODY	T/U	A	D	F/G
COLOR	5L/5	9	5	4/5L
<u>% COMPOSITION</u>				
OILS	0-273 35.57% 0-269 15.27%	0-299 15.39%	0-282 22.43% VR-41160 4.57%	VR-44093 34.81%
GUMS	VM-227 6.40%	VELSICOL AB-11-4 24.17%	VM-345 22.25%	PENTALYN A 15.54%
SOLVENTS	S-43 42.25%	S-43 23.92% S-42 18.68% S-54 5.91% S-138 8.64%	S-43 36.74% S-104 11.99%	S-138 5.56% S-43 44.09%
DRIERS	VM-308 0.51%	D-2-A 1.32% D-29 1.97%	VM-430-N 0.88% VM-432-N 1.14%	0
MISC.	0	0	0	0
USES	LONG OIL MIXING VARNISH USED IN TRAFFIC ZONE PAINTS, ALUMINUM VEHICLE (NOT READY MIXED) AND OTHER EXTERIOR PAINTS.	USED IN ALUMINUM VEHICLES. ALSO IN ACID AND ALKALI RESISTANT FINISHES.	HARD, FAST DRYING MODIFIED PHENOLIC USED IN BOTH WOOD AND METAL FINISHES. GOOD ALKALI AND WATER RESISTANCE. USED DURING WAR IN FAST DRY STENCIL PASTES.	PALE ENAMEL MIXING VARNISH USED IN AIR DRY ENAMELS AND ALSO EXTENSIVELY USED IN ROLLER COATING FINISHES (BAKED).

JUNE 21, 1946

VARNISH NO.	VR-46039	VR-40138	VR-38404	VR-38463
OIL LENGTH	25.0	25.0	21.3	60.0
SP/GR. WT/GAL.	.927 7.722	.897 7.475	.863 7.189	.898 7.479
NON VOLATILE	60.9%	43.6%	32.2%	58.4%
GALS OIL PER GAL.	0-3 .079 0-268 .371	0-3 .269	0-60 .169	0-3 .383 0-60 .077
LBS GUM PER GAL.	VELSICOL AD-6-3 .476 VM-329 1.11	VM-288 1.08	VM-7 .794 VM-196 .201	VM-344 .766
GALS. RED. PER GAL.	S-47 .190 S-42 .254	S-43 .473 S-47 .151	S-19 .042 S-43 .689	S-90 .077 S-43 .383
ACID NUMBER	9.9	12.2	9.1	7.7
BODY	B	L	A	G
COLOR	9+	9+	8	5
<u>COMPOSITION</u>				
OILS	0-3 3.08% 0-268 32.31%	0-3 28.24%	0-60 18.37%	0-3 40.21% 0-60 7.98%
GUMS	VM-329 14.39% VELSICOL AD-6-3 6.17%	VM-288 14.39%	VM-7 11.05%	VM-344 10.24%
SOLVENTS	S-47 17.88% S-42 21.17%	S-43 41.77% S-47 14.60%	S-19 4.56% S-43 63.22%	S-90 7.41% S-43 33.81%
DRIERS	0	VM-308 0.86% VM-191 0.14%	VM-196 2.80%	D-44 0-35%
MISC.	0	0	0	0
USES	ALUMINUM MIXING VARNISH. SHOWS GOOD LEAFING RE- TENTION IN READY MIXED PAINTS. ALSO USED IN CON- JUNCTION WITH OILS FOR EXTERIOR ALUMINUM PAINTS.	USED IN BLACK BAKING STOVE ENAMELS. HAS GOOD ALKALI AND ACID RESISTANCE MAKING IT SUITABLE FOR USE IN RAYON SPOOLS AND ON ACID BUCKETS.	USED AS A HARD- ENER IN BILLINGS- CHAPIN DECK PAINTS ALSO USED AS A KAURI GUM DRIER.	SPAR VARNISH TYPE USED AS CLEAR SPAR, ALSO IN PIG- MENTED GOODS FOR EXTERIOR DURABILITY. SHOWS EXCELLENT LEAFING IN READY MIXED ALUMINUM PAINTS.

JUNE 21, 1946

SEPTEMBER 18, 1946

VARNISH NO.	VR-42198			
OIL LENGTH				
SP/GR. WT/GAL.	.849 7.076			
NON VOLATILE	37.8%			
GALS OIL PER GAL.	0-52 .333			
LBS GUM PER GAL.	VM-300 .083			
GALS RED. PER GAL.	S-43 .417 S-148 .250			
ACID NUMBER	4.4			
BODY	V			
COLOR	3			
<u>% COMPOSITION</u>				
OILS	0-52 36.60%			
GUMS	0			
SOLVENTS	S-43 38.87% S-148 23.35%			
DRIERS	0			
MISC.	VM-300 1.18%			
USES	NON-PENETRATING TYPE FLAT WALL LIQUID. USED PRINCIPALLY IN SEALETTE.			

SEPTEMBER 18, 1946

GLD38237

SPEDENES

VARNISH NO.	V-801	V-805	V-813	V-827
OIL LENGTH	8.6	6.1	8.7	11.1
SP/GR WT/GAL.	.995 8.291	1.003 8.363	.989 8.241	.982 8.176
NON VOL.	48.7%	47.3%	47.1%	48.8%
BODY	V/Z	T	P/Q	J/K
ACID NUMBER	25/29	20.0	16/20	7/10
COLOR	5/6L	5L	3/4L	1L/2L
LDS OIL PER GAL.	0-183 .813 0-143 .813	0-183 1.27	0-183 1.56	0-191 0.035 0-167 1.81
LDS RESIN PER GAL.	2.37	2.63	2.25	2.08
LDS RED. PER GAL.	S-60 .73 S-47 1.47 S-6 2.06	S-60 .63 S-47 1.77 S-23 2.01	S-47 4.36	S-47 4.18
<u>THEO. COMPOSITION %</u>				
OIL	0-183 9.03% 0-143 9.03%	0-183 14.02%	0-183 17.47%	0-167 21.63% 0-191 3.39%
CH-157	21.25%	23.37%	20.33%	18.88%
MALEIC CMPDS.				CH-175 0.29%
POLYHYDRIC ALCOHOLS	CH-134 11.28%	CH-134 11.89%	CH-134 11.21%	CH-134 8.85%
GUMS				
CH-210				
CH-168				
% SOLVENTS	S-60 8.46% S-47 17.04% S-6 23.91%	S-60 7.21% S-47 20.34% S-23 23.17%	S-47 50.99%	S-14 .03% S-47 49.90%
CH-36				0.03%
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	0-183 20.16% 0-143 20.16%	0-183 32.22%	0-183 40.26%	0-167 45.42% 0-191 3.87%
GUMS				
POLY-ALCOHOLS EXCESS	1.01%	1.39%	1.82%	1.59%
G.P.	58.67%	66.39%	57.92%	51.23%
G.M.				0.85%
G.S.				
PEP				
PEM				
PES				
% CH-157 ON ALKYD RESIN	40.3%	45.7%	39.8%	36.2%

APRIL 9 1946

GLD38238

SPEDENES

VARNISH NO.	V-801	V-805	V-813	V-827
USES	SHORT OIL SPEDENE VARNISH. USED ALONE OR IN CONJUNCTION WITH OTHER SPEDENES IN EXTERIOR AND INTERIOR ENAMELS. BAKING OR AIR DRY TYPES. REACTIVE TO ZINC OXIDE.	SHORT OIL SPEDENE VARNISH. USED ALONE OR IN CONJUNCTION WITH OTHER SPEDENES IN EXTERIOR OR INTERIOR ENAMELS. BAKING OR AIR DRY TYPES. HIGH GLOSS AND HEAVY BODY. REACTIVE TO ZINC OXIDE. USED IN LOW COST LOW BAKE WHITE ENAMELS.	SHORT OIL SPEDENE VARNISH USED ALONE OR IN CONJUNCTION WITH OTHER SPEDENES. EXTERIOR OR INTERIOR TYPES. REACTIVE TO ZINC OXIDE. USE SIMILAR TO V-805. DOES NOT HAVE FALSE BODY.	SHORT OIL SPEDENE VARNISH USED ALONE OR IN CONJUNCTION WITH OTHER SPEDENES. GOOD COLOR RETENTION IN WHITES. AIR DRY OR BAKE TYPES. NEUTRAL TO ZINC OXIDE.

APRIL 8, 1946

GL038239

SPEDENES

VARNISH NO.	V-829	V-833-A	V-836	V-838
OIL LENGTH	15.2	8.8	5.7	13.1
SP/GR WT/GAL.	.977 8.136	.959 7.980	1.007 8.391	1.013 8.442
NON VOL.	66.4%	52.4%	48.5%	57.6%
DODY	T/U	S/T	U/V	P
ACID NUMBER	4/5	16/18	11/13	12/16
COLOR	2	6L	1L/1	4/5
LBS OIL PER GAL.	J-182 2.93	J-268-C 1.69	J-202 .584 CH-5 .584	P-10 ACIDS 2.42
LBS RESIN PER GAL.	2.41	2.40	2.57	2.30
LBS RED. PER GAL.	S-43 2.73	S-104 2.11 S-42 1.69	S-6 4.36	S-6 3.58
<u>THEO. COMPOSITION %</u>				
OIL	J-182 32.70%	J-268-C 20.82%	J-202 6.41% CH-5 6.41%	P-10 ACID 25.83%
CH-157	21.85%	12.75%	22.79%	
MALEIC CMPDS.				
POLYHYDRIC ALCOHOLS	CH-134 13.39%	CH-134 5.21%	CH-134 14.39%	CH-134 11.41%
GUMS		VM-407 5.21% VM-226 2.60% VM-425 5.21%		
CH-210		1.33%		
CH-188				22.82%
CH-36		0.55%		
% SOLVENTS	S-43 31.98%	S-104 26.33% S-42 20.82%	S-6 50.00%	S-6 39.94%
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	J-182 54.19%	J-268-C 40.44	J-202 14.48 CH-5 14.48	P-10 ACIDS 49.78%
GUMS		VM-407 10.11% VM-226 5.06% VM-425 10.11%		
POLY-ALCOHOLS EXCESS	1.13%	2.32%	7.30%	2.89%
G.P.	44.60%	25.49%	63.74%	
G.M.				
G.S.				47.33%
PEP		6.77%		
PEM				
PES				
% CH-157 ON ALKYD RESIN	30.7%	21.9%	43.8%	0

APRIL 8, 1946

GLD38240

SPEDENES

-18 A-

VARNISH NO.	V-829	V-833-A	V-836	V-838
USES	LONG OIL SPEDENE VARNISH. USED ALONE OR IN CONJUNCTION WITH OTHER SPEDENES. LARGELY USED FOR AIR DRY ENAMELS EXTERIOR OR INTERIOR. GOOD COLOR RETENTION IN WHITES. NEUTRAL TO ZINC OXIDE.	SHORT OIL SPEDENE VARNISH. USED ALONE OR IN CONJUNCTION WITH OTHER SPEDENES. IMPARTS HARDNESS, GLOSS AND SPEED OF DRY TO INTERIOR AND EXTERIOR FINISHES. USED IN FAST DRY PRIMERS, PRIMER SURFACER, AND ENAMELS.	SHORT OIL SPEDENE VARNISH. USED IN CONJUNCTION WITH OTHER SPEDENES AND IN LACQUERS. SYNTHETIC USAGE FOR BAKING ONLY IN COMBINATION WITH OTHER SPEDENES AND, OR, MELAMINE, UREA, OR UREA MELAMINE RESINS.	SHORT OIL SPEDENE VARNISH. USED AS PLASTICIZER IN LACQUERS.

APRIL 8, 1946

GLD38241

VARNISH NO.	V-829-A			
OIL LENGTH	15.2			
SP/GR. WT/GAL.	.952 7.928			
NON VOL.	57.0%			
BODY	1/J			
ACID NUMBER	7 - 10			
COLOR	5/5L			
LBS OIL PER GAL.	0-182 2.45			
LBS RESIN PER GAL.	2.02			
LBS RED. PER GAL.	S-43 2.99 S-106 .42			
<u>THEO. COMPOSITION %</u>				
OIL	0-182 28.32%			
CH-157	18.88%			
MALEIC CMPDS				
POLYHYDRIC ALCOHOLS	CH-134 11.57%			
GUMS				
CH-210				
CH-188				
CH-36				
% SOLVENTS	S-43 36.18% S-106 5.05%			
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	0-182 54.20%			
GUMS				
POLY-ALCOHOLS EXCESS	CH-134 1.12%			
G.P.	44.68%			
G.M.				
G.S.				
PEP				
PEM				
PES				
% CH-157 ON ALKYD RESIN	30.4%			
USES	LONG OIL SPEDENE VARNISH. USED ALONE OR IN CONJUNCTION WITH OTHER SPEDENES. LARGELY USED FOR AIR DRY ENAMELS EXTERIOR OR INTERIOR. GOOD COLOR RETENTION IN WHITES. NEUTRAL TO ZINC OXIDE.			

OCTOBER 28, 1946

GL038242

SPEDENES

VARNISH NO.	V-043	V-045	V-046	V-049
OIL LENGTH	14.4	9.0	7.5	
SP/GR WT/GAL.	.925 7.708	.958 7.979	.995 8.208	.992 8.260
NON VOL.	49.8%	53.2%	53.3%	47.3%
BODY	V/W	H-J	W	X
ACID NUMBER	2.5			6.0
COLOR	3	8	8	2
LBS OIL PER GAL.	0-210 2.02	0-177 1.67	0-143 1.65	M-205 1.35
LBS RESIN PER GAL.	1.75	2.32	2.76	2.40
LBS RED. PER GAL.	S-43 3.87	S-122 3.98	S-47 2.63 S-122 1.25	S-123 4.35
<u>THEO. COMPOSITION %</u>				
OIL	0-210 24.09%	0-177 20.66%	0-143 18.66%	M-205 15.10%
CH-157	16.97%	9.68%	18.66%	21.65%
MALEIC CMPDS.				
POLYHYDRIC ALCOHOLS	CH-134 10.54%	CH-134 4.23%	CH-139 8.47%	CH-134 9.47% CH-181 3.02%
GUMS	VM-300 0.03%	VM-404 16.13%	VM-425 8.47%	
CH-210				
CH-188				
CH-36		0.03%		
% SOLVENTS	S-43 48.37%	S-14 0.10% S-122 49.17%	S-47 31.03% S-122 14.71%	S-123 50.76%
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	0-210 52.57%	0-177 41.74%	0-143 37.45%	M-205 34.60%
GUMS		VM-404 32.58%	VM-425 16.27%	
POLYALCOHOLS EXCESS	1.74%	0.43%		3.99%
G.P.	45.69%	25.25%	46.28%	ETHYLENE GLYCOL PHTHALATE 15.06% 46.35%
G.M.				
G.S.				
PEP				
PEM				
PES				
% CH-157 ON ALKYD RESIN	31.4%	17.2%	32.5%	42.2%
USES		USED IN CLEAR AND PIGMENTED TYPE WRINKLE FINISHES.	SAME AS V-045 IN USES	SAME AS V-027 IN USES.

APRIL 8, 1946

GLD38243

SPEDENES

VARNISH NO.	V-852	V-853	V-855	V-858
OIL LENGTH	8.9	15.1	38.9	10.3
SP/GR WT/GAL.	.998 8.316	.957 7.968	1.021 8.501	.914 7.617
NON VOL.	50.0%	57.0%	100.0%	50.6%
BODY	X/Y	Z+1	T/U	T/U
ACID NUMBER	1.2	6.2	10/15	4/5
COLOR	1	3/4L	6	3L/3
LBS OIL PER GAL.	CH-211 1.57	O-182 2.47	O-183 4.67 O-197 1.63	D-242 .756 O-293 1.58
LBS RESIN PER GAL.	2.21	2.05	2.02	1.45
LBS RED. PER GAL.	S-47 1.04 S-104 3.12	S-43 3.01 S-106 0.42		S-43 3.76
<u>THEO. COMPOSITION %</u>				
OIL	CH-211 17.33%	O-182 28.32%	O-183 49.14% O-197 17.20%	D-242 2.74% O-293 17.89%
CH-157	19.63%	18.88%	17.20%	13.08%
MALEIC CMPDS.				CH-198 0.89%
POLYHYDRIC ALCOHOLS	CH-134 11.07% CH-210 3.85%	CH-134 8.68% CH-210 2.89%	CH-134 16.46%	CH-134 7.33% CH-210 2.97%
GUMS				ROSIN ACIDS D-242 6.38% O-293 1.14%
CH-210				
CH-188				
CH-36				
% SOLVENTS	S-47 12.03% S-104 36.09%	S-43 36.18% S-106 5.05%		S-43 47.53%
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	CH-211 37.73%	O-182 54.37%	O-183 54.91% O-197 19.22%	D-242 5.88% O-293 38.45%
GUMS				ROSIN ACIDS D-242 13.72% O-293 2.46%
POLY ALCOHOLS EXCESS	9.07%	0.54%	2.10%	1.82%
G.P.	38.89%	33.29%	23.74%	24.52%
G.M.				1.86%
PEP	14.31%	11.80%		10.48%
PEM				0.81%
PES				
G.S.				
% CH-157 ON ALKYD RESIN	37.8%	30.6%	17.2%	23.7%
				APRIL 8, 1946

SPEDENES

VARNISH NO.	V-852	V-853	V-855	V-858
USES	MODIFYING TYPE SPEDENE. USED AS A PLASTICIZING RESIN IN HIGH UREA, UREA-MELAMINE, AND/OR MELAMINE CONTENT ENAMELS. GOOD COLOR RETENTION AND COLOR STABILITY AT ELEVATED TEMPERATURES IN WHITE ENAMELS.	SIMILAR TO V-829 ONLY FASTER AND HARDER DRY IN EXTERIOR TYPE ENAMELS. NEUTRAL TO ZINC OXIDE.	LONG OIL DRYING OIL TYPE SPEDENE. USED WITH OTHER SPEDENE COMBINATIONS TO LENGTHEN THE OIL CONTENT. USED IN POST-AD PAINTS TO GIVE EASE OF BRUSHING AND SHARPNESS OF OUTLINE IN LETTERING. USED IN FLOOR ENAMELS TO ADD OIL LENGTH WITHOUT SACRIFICING DRY.	GENERAL PURPOSE ALKYD, NO REPORTABLE OIL. USED IN EXTERIOR AND INTERIOR FINISHES ALONE OR IN CONJUNCTION WITH OILS OR VARNISHES. GOOD EXTERIOR DURABILITY. QUESTIONABLE NEUTRALITY TO ZINC OXIDE.

APRIL 8, 1946

GLD38245

VARNISH NO.	V-806	V-820	V-628	V-832
OIL LENGTH	6.9	19.5	16.5	16.5
SP/GR. WT/GAL.	.959 7.992	.933 7.772	.967 8.054	.966 8.047
NON VOL.	34.0%	34.8%	49.9%	64.7%
BODY	D/E	D/E	K	W/X
ACID NUMBER	12.0	15.0	17.8	3.3
COLOR	3	7L	4	2/3
LBS OIL PER GAL.	0-183 .944	0-143 1.62	0-3 1.56 0-183 .208 0-60 .516	0-183 2.94
LBS RESIN PER GAL.	1.71	1.04	1.73	2.23
LBS RED. PER GAL.	S-47 5.27	S-47 5.06	S-47 4.04	S-43 2.84
<u>THEO. COMPOSITION %</u>				
OIL	0-183 10.99%	0-143 19.46%	0-183 2.43% 0-3 19.08% 0-60 6.31%	0-183 33.42%
CH-157	16.13%	10.09%	12.64%	20.47%
MALEIC CMPDS.				
POLYHYDRIC ALCOHOLS	CH-134 8.67%	CH-134 6.93%	CH-134 5.27%	CH-134 12.50%
GUMS			VM-344 4.86% VM-308 0.05%	
CH-210				
CH-188				
% SOLVENTS	S-47 64.21%	S-47 63.52%	S-47 49.36%	S-43 33.61%
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	0-183 34.74%	0-143 59.89%	0-183 5.18% 0-3 38.84% 0-60 12.84%	0-183 56.54%
GUMS			VM-344 9.89%	
POLY ALCOHOLS EXCESS	CH-134 2.26%	CH-134 1.74%	CH-134 0.0%	0.58%
G.P.	63.00%	38.37%	33.24%	42.88%
G.M.				
G.S.				
PEP				
PEM				
PES				
% CH-157 ON ALKYD RESIN	45.1%	27.7%	25.0%	33.2%
USES	SHORT OIL SPED- ENE, USED MAINLY IN COMBINATION WITH V-828 IN SPEDENE PRIMER SURFACERS.	THIS IS A WOOD OIL SPEDENE WHICH SHOWS FAST DRY IN PRIMERS AND A TOUGH ELASTIC FINISH. ITS PRIN- CIPAL USE AT PRESENT HAS BEEN IN FAST DRY SPEDENE PRIMERS.	FAST DRY SPEDENE MODIFIED WITH PHENOLIC RESIN. USED MAINLY IN COMBINATION WITH V-606 IN SPEDENE PRIMER SURFACER. JUNE 21, 1946	LONG OIL SPEDENE VARNISH, USED ALONE OR IN CONJUNCTION WITH OTHER SPEDENES. LARGELY USED FOR AIR DRY ENAMELS EXTERIOR OR INTERIOR. GOOD COLOR RETENTION IN WHITES. NEUTRAL TO ZINC OXIDE. SEPTEMBER 18, 1946

VARNISH NO.	V-837	V-856		
OIL LENGTH	6.0	19.9		
SP/GR. WT/GAL.	1.009 8.404	.963 8.022		
NON VOL.	48.1%	69.0%		
BODY	Q	Y/Z		
ACID NUMBER	4	6/8		
COLOR	1	2/3		
LBS OIL PER GAL.	0-202 1.20	0-5 3.17 0-182 .047		
LBS RESIN PER GAL.	2.52	2.01		
LBS RED. PER GAL.	S-122 2.19 S-47 2.17	S-43 2.48		
<u>THEO. COMPOSITION %</u>				
OIL	0-202 13.16%	0-5 38.45% 0-182 0.54%		
CH-157	21.97%	18.15%		
MALEIC CMPDS.	CH-198 .29%	CH-198 0.67%		
POLYHYDRIC ALCOHOLS	CH-134 11.44% CH-181 3.20%	CH-134 11.97%		
GUMS		VM-300 0.05%		
CH-210				
CH-188				
% SOLVENTS	S-122 25.05% S-47 24.89%	S-43 30.17%		
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	0-202 29.73%	0-5 57.20% 0-182 0.84%		
GUMS				
POLY ALCOHOLS EXCESS	CH-134 6.33% CH-181 1.66%	CH-134 5.62%		
G.P.	47.86% E.G.P. 13.54%	34.90%		
G.M.	0.69% E.G.M. 0.19%	1.44%		
G.S.				
PEP				
PEM				
PES				
% CH-157 ON ALKYD RESIN	47.4%	27%		
USES	NON DRYING TYPE ALKYD. USED PRIN- CIPALLY IN BAKING ENAMELS IN CON- JUNCTION WITH UREA, MELAMINE, OR MELAMINE UREA COMBINATIONS WITH OR WITHOUT THE ADDITION OF DRY- ING OIL ALKYDS	LONG OIL SPEDENE USED LIKE V-855. ALSO USED ALONE IN AIR DRY BRUSH- ING TYPE ENAMELS.		

SEPTEMBER 18, 1946

GLD38247

VARNISH NO.	GRV-1194	GRV-1521	GRV-1717	GRV-1777
OIL LENGTH	10.5	9.6	39.1	10.4
SP/GR. WT/GAL.	.963 8.022	1.023 8.523	1.020 8.499	.955 7.958
NON VOL.	48.3%	58.6%	100%	48.3%
BODY	P	22/23	V	T/U
ACID NUMBER	4/6	33.0	10/15	15.8
COLOR	2/3	2/4	3/4	4L
LBS OIL PER GAL.	0-182 1.46 0-202 .258	0-183 2.15	0-182 6.27	0-182 1.45 0-202 .256
LBS RESIN PER GAL.	2.05	2.79	2.00	2.05
LBS RED. PER GAL.	S-47 2.03 S-42 2.12	S-106 1.91 S-48 .354 S-47 1.27	0.00	S-47 2.01 S-42 2.10
THEO. COMPOSITION %				
OIL	0-182 16.76% 0-202 2.96%	0-183 23.01%	0-182 66.38%	0-182 16.76% 0-202 2.96%
CH-157	CH-53 1.97% CH-157 17.26%	CH-157 24.25%	CH-157 17.16%	CH-53 1.97% CH-157 17.26%
MALEIC CMPDS.				
POLYHYDRIC ALCOHOLS	CH-134 11.34%	CH-134 13.18%	CH-134 16.46%	CH-134 8.50%
GUMS				
CH-210				CH-210 2.84%
CH-188				
% SOLVENTS	S-47 24.31% S-42 25.40%	S-106 21.36% S-48 3.97% S-47 14.23%		S-47 24.31% S-42 25.40%
COMPOSITE RESIN ANALYSIS				
OIL	0-182 37.70% 0-202 6.66%	0-183 42.98%	0-182 73.66%	0-182 37.80% 0-202 6.66%
GUMS				
POLY ALCOHOLS EXCESS	CH-134 2.86%	CH-134 1.03%	2.80%	CH-210 .04% CH-134 2.25%
G.P.	GLYCERYL CITRATE 4.80% CH-157 47.98%	55.99%	23.54%	GLYCERYL CITRATE 3.58% CH-157 35.80%
G.M.				
G.S.				
PEP				PE PHTHALATE 12.60% PE CITRATE 1.27%
PEM				
PES				
% CH-157 ON ALKYD RESIN	37.1%	40.1%	17.2%	37.1%
USES	PALE SPEDENE MIX- ING VARNISH USED LARGELY IN BAKING TYPE GOODS ALONE OR IN COMBINATION WITH UREA, MELAMINE, OR UREA-MELAMINE SOLUTIONS.	SPEDENE MIXING VAR- NISH USED LARGELY IN SILK SCREEN PASTES, ALONE OR IN COMBINATION WITH OTHER SPEDENES OR OILS.	LONG OIL SPEDENE MIXING VARNISH USED FOR BLENDING WITH OTHER ALKYDS FOR EXTERIOR EN- AMELS OR PAINTS. JUNE 21, 1946	SPEDENE MIXING VAR- NISH USED PRINCIP- ALLY IN 181 BASES. ALSO IN COMBINATION WITH OTHER ALKYDS AND/OR UREA, MELA- AMINE, UREA-MELA- MINE SOLUTIONS IN BAKING ENAMELS, HAMMERLOIDS AND METALLESCEENTS. SEPTEMBER 30, 1946

VARNISH NO.	GRV-1873	GRV-1985	GRV-1991	GRV-2014
OIL LENGTH	10.9	15.2	14.7	9.1
SP/GR. WT/GAL.	.996 8.298	.946 7.879	.924 7.698	.981 8.168
NON VOL.	51.3%	50.1%	50.2%	49.4%
BODY	X	B	Z ₁	H
ACID NUMBER	10.9	3.3	3.2	15.5
COLOR	2L	4	6	5
LBS OIL PER GAL.	0-268-C 1.97	0-265 2.14	0-300 1.95	0-3 1.68 0-183 0.02
LBS RESIN PER GAL.	2.26	1.75	1.67	2.32
LBS RED. PER GAL.	S-47 4.04	S-43 1.88 S-138 2.06	S-43 3.83	S-122 4.13
<u>THEO. COMPOSITION %</u>				
OIL	0-268-C 23.18%	0-265 26.54%	0-300 23.41%	0-3 20.28% 0-183 0.20%
CH-157	CH-157 20.54%	CH-157 16.86%	CH-157 16.13%	CH-157 9.49%
MALEIC CMPDS.				
POLYHYDRIC ALCOHOLS	CH-134 8.82%	CH-134 7.67%	CH-134 12.49%	CH-134 4.15%
GUMS	CH-36 .03%	VM-308 0.06%		CH-36 0.02% VM-344 15.82%
CH-210				
CH-188				
% SOLVENTS	S-14 0.03% S-47 47.40%	S-43 23.33% S-138 25.54%	S-43 47.97%	S-14 0.09% S-122 49.95%
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	0-268-C 46.34%	0-265 54.18%	0-300 50.58%	0-3 41.58% 0-183 .44%
GUMS				
POLY ALCOHOLS EXCESS	CH-134 0.59%	CH-134 1.33%	CH-134 6.35%	CH-134 0.38%
G.P.	53.07%	44.49%	43.07%	25.15%
G.M.				
G.S.				
PEP				
PEM				
PES				
% CH-157 ON ALKYD RESIN	39.1%	33.0%	31.0%	19.0%
USES	ALKYD MIXING VARNISH SIMILAR TO NUBIAN NRV-786. USED IN BAKING TYPE FINISHES WITH OR WITHOUT UREA, MELAMINE, OR COMBINATION UREA-MELAMINE SOLUTION. USED ALONE IN AIR DRY WHITE ENAMELS.	THIN BODIED SPED-ENE MIXING VARNISH USED DURING THE WAR IN LAND-ING MAT FINISHES. PRINCIPAL USE NOW IN DIPPING FINISHES (BAKED).	SPEDENE USED PRINCIPALLY IN PRIMERS AND PRIMER SURFACERS WITH OR WITHOUT MELAMINE, UREA, OR MELAMINE-UREA SOLUTION. BAKING TYPES LARGELY, ALSO USED ALONE OR IN CONJUNCTION WITH LONGER OIL ALKYDS IN EXTERIOR ENAMELS (AIR DRY).	WRINKLE SPEDENE VARNISH USED IN ALL TEXTURES BY VARIATION IN OILS AND DRIERS USED PLUS INERT PIGMENT CONTENT IN THE FINISHED WRINKLE ENAMELS. JUNE 21, 1946

SPEDENES

VARNISH NO	GRV-2018	GRV-2028		
OIL LENGTH	16.8	9.8		
SP/GR. WT/GAL.	.972 8.095	.951 7.923		
NON VOL.	64.7%	49.5%		
BODY	X/Y	J/K		
ACID NUMBER	4.7	19.2		
COLOR	4L	5/6L		
LBS OIL PER GAL.	0-183 2.99	0-3 1.60 0-27 .120		
LBS RESIN PER GAL.	2.23	2.19		
LBS RED. PER GAL.	S-42 2.15 S-6 0.72	S-104 4.00		
<u>THEO. COMPOSITION %</u>				
OIL	0-183 33.60%	0-3 19.97% 0-27 1.50%		
CH-157	20.13%	8.74%		
MALEIC CMPDS.				
POLYHYDRIC ALCOHOLS	CH-134 9.43%	CH-134 3.84%		
GUMS		CH-36 0.04% VM-407 5.99% VM-425 9.99%		
CH-210	CH-210 3.14%			
CH-188				
% SOLVENTS	S-42 25.28% S-6 8.42%	S-104 49.93%		
<u>COMPOSITE RESIN ANALYSIS</u>				
OIL	0-183 57.14%	0-3 40.80% 0-27 3.05%		
GUMS		VM-407 12.24% VM-425 20.24%		
POLY ALCOHOLS EXCESS	CH-134 0.30%	CH-134 0.44%		
G.P.	31.47%	23.07%		
G.M.				
G.S.				
PEP	11.11%			
PEM				
PES				
% CH-157 ON ALKYD RESIN	30.4%	17.5%		
USES	FAST DRYING SPEDENE VARNISH USED IN AIR DRY SPEDENE ENAMELS TO TAPE IN 4 TO 6 HOURS. ALSO IN BAKING SPEDENE ENAMELS WITH THE ADDITION OF UREA, MELAMINE, OR UREA-MELAMINE SOLUTIONS.	SAME USAGE AS V-833.		

JUNE 21, 1946

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