



## Munsell and CIELAB Readings for GOLDEN Heavy Body and Fluid Acrylics

10 mil (~3 sheets of paper)

← Approximate Wet Film Thickness →

1/4" Disks - Fully Opaque

Name	Munsell			CIELAB			Name	Munsell			CIELAB		
	Hue	Value	Chroma	L*	a*	b*		Hue	Value	Chroma	L*	a*	b*
Alizarin Crimson Hue	3.1 R	2.7	2.1	27.94	9.37	2.19	Alizarin Crimson Hue	8.3R	1.1	3.9	11.83	19.06	5.45
Anthraquinone Blue	3.2 P	2.4	1.1	24.44	5.02	-6	Anthraquinone Blue	5.0P	0.6	4.2	6.32	12.58	-13.54
Aureolin Hue	1.8 Y	6.6	9.7	65.75	14.21	63.61	Aureolin Hue	2.3Y	6.5	11.6	64.8	13.52	76.94
Azurite Hue	3.0 PB	3	3.7	31.92	-5.25	-16.01	Azurite Hue	3.7PB	1.6	3.5	17.53	-2.9	-14.45
Benzimidazolone Yellow Light	5.0 Y	8.4	13	83.43	4.73	91.99	Benzimidazolone Yellow Light	4.8 Y	8.2	12.7	81.71	5.1	89.52
Benzimidazolone Yellow Medium	2.6 Y	8.1	14	80.04	15.76	93.13	Benzimidazolone Yellow Medium	2.8 Y	8	14.1	78.83	15.38	94.4
Bismuth Vanadate	7.7 Y	9.1	12.4	90.21	-3.92	91.23	Bismuth Vanadate	7.6Y	9.1	13.5	90.39	-3.97	99.70
Bone Black	7.6 PB	2.3	0.1	24.58	-0.03	-0.46	Bone Black	N0	1	0.5	11.69	-0.12	-0.47
Burnt Sienna	0.2 YR	3.3	3.9	33.67	16.86	12.58	Burnt Sienna	1.1YR	3	4.4	30.44	18.67	15.84
Burnt Umber	4.3 YR	2.7	0.8	28.57	2.86	4.06	Burnt Umber	5.3YR	2	1.4	20.19	5.26	5.56
Burnt Umber Light	2.9 YR	2.9	1.6	30.12	6.41	8.95	Burnt Umber Light	4.9YR	2.4	2.2	23.91	8.56	9.52
C.P. Cadmium Orange	0.9 YR	6.4	15.2	63.85	53.5	63.6	Cadmium Orange	1.6YR	6.3	18.4	62.31	58.2	86.2
C.P. Cadmium Red Dark	4.6 R	3.8	10.8	38.2	42.27	19.41	Cadmium Red Dark	7.0R	3.3	13.6	32.89	54.58	33.9
C.P. Cadmium Red Light	7.4 R	5.1	15.2	51.78	57.62	42.74	Cadmium Red Light	8.6R	4.8	17.6	48.45	64.75	61.21
C.P. Cadmium Red Medium	5.5 R	4.2	12.6	42.85	50.1	27.7	Cadmium Red Medium	7.8R	3.8	15.5	37.99	59.48	44.2
C.P. Cadmium Yellow Dark	9.6 YR	8	14.4	78.08	26.94	85.98	Cadmium Yellow Dark	9.8YR	7.9	16.2	77.37	27.01	101.02
C.P. Cadmium Yellow Light	7.2 Y	9	12.9	88.89	-1.72	94.38	Cadmium Yellow Light	7.1Y	9.2	14.5	90.95	-2.03	106.38
C.P. Cadmium Yellow Med	2.9 Y	8.5	14.3	83.91	15.55	94.46	Cadmium Yellow Medium	3.2Y	8.6	16.6	84.67	14.85	111.12
C.P. Cadmium Yellow Prim	10.0 Y	9.1	11.2	91.06	-8.78	85.05	Cadmium Yellow Primrose	9.8Y	9.2	12	91.09	-10.44	90.24
Cadmium Red Medium Hue	6.4 R	4.2	12.1	42.05	48.29	29.06	Cadmium Red Medium Hue	8.9Y	3.6	15	36.1	56.55	50.45
Cadmium Yellow Medium Hue	2.0 Y	8.2	12.3	81.47	16.5	78.94	Cadmium Yellow Medium Hue	2.5Y	8.3	14	81.44	16.52	93.12
Carbon Black	0.3 YR	2.5	0	25.77	0.2	-0.17	Carbon Black	N0	1	0.3	10.23	-0.17	-0.31
Cerulean Blue Chromium	3.3 PB	3.8	8.8	42.76	-12.04	-32.29	Cerulean Blue Chromium	3.1PB	3.4	10.4	37.45	-13.14	-38.43
Cerulean Blue Deep	9.5 B	3.5	6.4	38.25	-16.56	-23.26	Cerulean Blue Deep	7.7B	2.7	7.5	29.81	-22.9	-25.75
Chromium Oxide Green	3.3	3.3	2.7	44.19	-15.5	16.04	Chromium Oxide	9.1GY	4	5.3	40.67	-19.64	21.12
Chromium Oxide Green Dark	9.4 GY	4.3	4.3	33.57	-9.37	8.61	Chromium Oxide Dark	9.1GY	2.6	4.3	26.61	-14.51	14.21
Cobalt Blue	7.3 PB	3.2	12.9	36.63	9.51	-46.66	Cobalt Blue	6.8PB	2.8	15.5	32.37	14.71	-57.05
Cobalt Blue Hue	6.8 PB	3.4	11.1	36.91	5.77	-42.41	Cobalt Blue Hue	6.6PB	2.9	13.3	32.26	9.57	-50.42
Cobalt Green	9.4 G	3.4	3.6	35.93	-19	2.64	Cobalt Green	8.8G	2.5	6	25.94	-28.58	4.79
Cobalt Teal	8.8 BG	5.5	9	58.58	-43.11	-12.36	Cobalt Teal	8.7 BG	5.4	8.7	57.44	-41.87	-11.71
Cobalt Turquoise	8.8 BG	4	5.9	43.88	-28.92	-9.45	Cobalt Turquoise	8.3BG	3.7	7.7	39.28	-37.72	-11.78
Cobalt Violet Hue	4.5RP	2.81	3.65	28.98	19.04	-7.49	Cobalt Violet Hue	6.9RP	1.9	4.2	19.9	17.23	-4.34
Diarylide Yellow	7.3 YR	7.7	14.3	75.48	33.38	80.36	Diarylide Yellow	7.8YR	7.7	17.2	75.43	35.68	102.3
Dioxazine Purple	8.8 R	2.5	0.4	24.76	2.81	-0.17	Dioxazine Purple	4.7R	0.5	0.7	5.63	2.84	-0.14
Graphite Gray	5.0YR	3.92	0.17	38.7	0.52	0.6	Graphite Gray	6.9YR	3.4	0.2	35.35	0.67	1
Green Gold	5.0 GY	4.5	5.2	47.2	-12.25	32.2	Green Gold	5.0GY	4	7.2	40.3	-15.93	44.62
Hansa Yellow Light	7.6 Y	8.8	12.1	86.94	-3.48	87.5	Hansa Yellow Light	7.0Y	8.8	14	89.73	-1.71	105.5
Hansa Yellow Medium	1.6 Y	8	14	78.51	18.46	89.29	Hansa Yellow Medium	2.7Y	7.9	16.6	78.24	16.94	111.31
Hansa Yellow Opaque	3.5 Y	8.5	13.8	85.41	11.09	93.99	Hansa Yellow Opaque	3.9Y	8.6	16	84.79	11.49	109.4

Hookers Green Hue	6.3BG	2.57	0.36	26.85	-2.63	-0.14	Hookers Green Hue	5.7BG	0.9	1.1	10.45	-5.88	-0.44
Indian Yellow Hue	3.8 YR	5.3	9.8	55.2	28.9	48.11	Indian Yellow Hue	6.2YR	4.9	11.8	49.21	28.67	65.99
Jenkins Green	2.6 BG	2.5	0.9	26.47	-3.3	-0.58	Jenkins Green	3.4BG	1.1	1.7	11.87	-7.32	-0.49
Light Bismuth Yellow	1.0 GY	9.6	5.2	95.73	-8.17	39.82	Light Bismuth Yellow	0.5 GY	9.5	5.3	95	-7.46	40.63
Light Green Blue Shade	1.3 G	6.6	12.2	66.76	-53.77	44	Light Green Blue Shade	1.4G	6.5	13.5	66.28	-59.92	47.04
Light Green Yellow Shade	9.2 GY	7.5	11.6	76.22	-43.51	54.1	Light Green Yellow Shade	8.9GY	7.3	12.4	74.05	-45.64	60.36
Light Magenta	7.8 RP	7	9.7	70.96	37.15	2.27	Light Magenta	8.4RP	7	10.5	70.95	41.58	4.22
Light Orange	2.9 YR	8.5	5.3	85.44	18.01	23.76	Light Orange	2.8 YR	8.4	5.4	84.35	18.36	23.95
Light Phthalo Blue	9.4 B	8	6.4	82.65	-17.04	-21.09	Light Phthalo Blue	9.2 B	7.9	6.4	81.65	-17.11	-20.8
Light Phthalo Green	2.2 BG	8.8	3.9	89.66	-22.05	3.08	Light Phthalo Green	2.0 BG	8.7	3.9	88.56	-21.91	3.23
Light Turquoise (Phthalo)	3.7 BG	5.1	8.8	54.33	-46.1	-0.17	Light Turquoise (Phthalo)	3.4BG	4.6	10.2	49.12	-54.97	-0.43
Light Ultramarine Blue	6.6 PB	6.2	10.9	65.38	0.5	-40.37	Light Ultramarine Blue	6.6PB	5.8	11.6	61.27	2.03	-42.98
Light Violet	1.0 P	5	10.4	52.21	18.39	-35.67	Light Violet	0.9P	4.4	12.3	46.89	22.44	-41.86
Manganese Blue Hue	1.9 PB	3.6	8.4	41.18	-14.38	-31.78	Manganese Blue Hue	2.7PB	2.4	10	27.63	-13.73	-37.1
Mars Black	2.8 R	2.5	0.1	25.47	0.51	0.16	Mars Black	Black	1	0.7	11.47	0.7	0.63
Mars Yellow	1.7 YR	4.7	6.9	46.65	26.79	27.6	Mars yellow	2.7YR	4.2	8.6	42.26	30.67	37.71
Medium Magenta	2.9 RP	5	12.9	51.76	47.31	-17.15	Medium Magenta	3.4RP	4.6	14.4	48	52.63	-16.56
Medium Violet	4.0 P	3.3	6.9	34.95	19.71	-24.45	Medium Violet	4.1P	2.4	9.2	25.63	25.91	-29.17
Naples Yellow Hue	0.6 Y	7.6	6.3	77.26	12.1	38.74	Naples Yellow Hue	1.0Y	7.6	6.7	76.38	11.46	41.78
Napthol Red Light	7.0 R	4.7	13.8	44.02	50.85	32.4	Napthol Red Light	8.9R	3.9	16	38.82	58.99	55.91
Napthol Red Medium	5.6 R	3.7	10	36.83	38.81	20.83	Napthol Red Medium	9.0R	2.9	12.7	28.92	50.68	40
Neutral Gray N2	4.4 PB	2.9	0.2	28.73	-0.07	-0.88	Neutral Gray 2	1.7P	2	0.1	20.19	0.26	-0.45
Neutral Gray N3	7.3 R	3.5	0.1	35.5	0.14	-0.25	Neutral Gray 3	3.3YR	2.7	0.1	27.75	0.51	0.43
Neutral Gray N4	1.6 PB	4.2	0.2	43.38	-0.09	-0.51	Neutral Gray 4	9.3YR	3.8	0.1	39.44	0.22	0.47
Neutral Gray N5	4.4 YR	5	0	52.02	-0.21	-0.28	Neutral Gray 5	1.7Y	4.7	0.1	48.75	0.26	0.98
Neutral Gray N6	1.7 GY	6.1	0.1	62.49	-0.04	0.47	Neutral Gray 6	0.4Y	5.8	0.2	59.83	0.36	1.24
Neutral Gray N7	1.6 Y	6.9	0.1	70.47	0	0.72	Neutral Gray 7	1.7Y	6.7	0.1	68.38	0.05	0.49
Neutral Gray N8	0.8 PB	8	0.1	80.83	-0.08	0.54	Neutral Gray 8	4.6Y	7.8	0.2	79.19	-0.08	1.35
Nickel Azo Yellow	8.4 YR	5.1	7	52.06	12.26	40.34	Nickel Azo Yellow	3.0Y	4.9	8.9	49.27	9.5	59.94
Paynes Gray	6.4 PB	2.3	0.6	24.12	0.05	-2.24	Paynes Gray	5.8PB	2	0.7	20.65	0.01	-3
Permanent Green Light	4.0 G	4.4	9.7	43.54	-46.94	17.96	Permanent Green Light	3.6G	3.7	12.5	38.83	-64.12	0.33
Permanent Maroon	8.8 RP	2.6	1	26.79	5.22	0.03	Permanent Maroon	4.7R	0.7	2.7	7.76	12.81	25.66
Permanent Violet Dark	8.8 P	2.6	1.8	26.64	7.65	-5.02	Permanent Violet Dark	3.1RP	0.9	4.3	9.22	17.92	-10.93
Phthalo Blue (Green Shade)	9.7 PB	2.4	4.8	24.95	8.48	-18.01	Phthalo Blue (Green Shade)	9.4PB	0.6	9.9	7.63	17.48	-29.67
Phthalo Blue (Red Shade)	0.6 P	2.3	2.2	24.42	5.29	-9.99	Phthalo Blue (Red Shade)	0.5P	0.3	10.7	3.29	9.88	-21.1
Phthalo Green (Blue Shade)	6.3 B	2.5	1.6	27.19	-8.89	-4.8	Phthalo Green (Blue Shade)	0.5B	0.8	3.8	9.88	-17.31	-7.16
Phthalo Green (Yellow Shade)	2.2BG	2.66	2.54	27.82	-11.83	-0.17	Phthalo Green (Yellow Shade)	2.1BG	1	5.1	11.37	-27.87	0.01
Primary Cyan	5.2 PB	3.3	8.5	34.97	-3.22	-32.28	Primary Cyan	5.0PB	2.8	9.3	30.67	-4.77	-35.92
Primary Magenta	5.1 R	4	11.3	40.82	46.03	21.21	Primary Magenta	6.4R	3.6	12.8	35.49	52.86	29.27
Primary Yellow	4.6 Y	8.6	13.2	84.6	7.27	90.03	Primary Yellow	4.4Y	8.6	14.8	84.99	7.93	103.17
Prussian Blue Hue	2.8 P	2.3	0.6	24.61	2.16	-3.37	Prussian Blue Hue	10.0PB	0.5	2	5.42	2.54	-7.4
Pyrrole Orange	8.6 R	5.6	16	55.97	59.52	53.43	Pyrrole Orange	9.5R	5.4	18.7	53.54	65.74	78.33
Pyrrole Red	5.8 R	4.2	13.9	42.26	54.6	31.25	Pyrrole Red	8.2R	3.9	17.4	39.06	64.97	55.65
Pyrrole Red Dark	5.0 R	3.7	11.2	37.35	44.50	21.51	Pyrrole Red Dark	8.0R	3.3	14.9	32.06	58.65	42.21
Pyrrole Red Light	6.8 R	4.7	14.4	47.7	56.46	37.62	Pyrrole Red Light	8.4R	4.5	17.9	44.65	65.95	60.39
Quinacridone / Nickel Azo Gold	0.5 YR	3.6	5.3	37.17	19.79	17.81	Quinacridone Nickel Azo Gold	3.0YR	2.4	5.6	23.98	20.67	13.46
Quinacridone Burnt Orange	6.5 R	2.9	3	29.15	10.72	4.99	Quinacridone Burnt Orange	1.5YR	1.5	4.6	14.93	20.72	8.2
Quinacridone Crimson	3.0 R	2.6	2.6	28.5	14.39	3.26	Quinacridone Crimson	8.6R	1.2	5.9	12.03	26.3	1.85
Quinacridone Magenta	0.7 R	3.1	6.5	31.41	27.69	2.75	Quinacridone Magenta	3.2R	1.8	8.9	18.22	38.26	22.95

Quinacridone Red	3.9 R	3.6	9.5	37.74	40.88	15.2	Quinacridone Red	6.2R	3.1	12	30.73	51.31	25.51
Quinacridone Red Light	4.9 R	4.2	10.8	41.83	45.16	21.57	Quinacridone Red Light	7.1R	3.6	12.1	35.58	50.8	30.2
Quinacridone Violet	2.8 R	2.9	5.9	29.4	22.71	6.07	Quinacridone Violet	8.6R	1.9	9.6	18.55	39.55	18.65
Raw Sienna	7.6 YR	5	5.6	50.21	16.55	30.47	Raw Sienna	8.2YR	4.7	7.2	47.61	18.71	40.99
Raw Umber	10.0 YR	2.9	0.7	29.25	1.04	2.67	Raw Umber	1.0Y	2.3	0.7	23.1	1.5	3.64
Red Oxide	8.6 R	3.8	7.2	37.84	26.66	18.07	Red Oxide	0.4YR	3.1	8.1	30.32	33.51	28.29
Sap Green Hue	8.6 GY	2.7	1	27.81	-3.43	1.3	Sap Green Hue	0.1G	1.2	2.1	12.85	-7.1	5.11
Smalt Hue	8.2PB	2.49	3.29	25.69	3.69	-14.17	Smalt Hue	6.6PB	1	0.9	10.41	0.47	-4.32
Teal	9.3BG	5.9	9.4	62.4	-45.25	-13.35	Teal	8.9BG	5.9	9.5	62.23	-45.88	-12.34
Terre Verte Hue	7.9 GY	3.5	2.1	35.1	-7.21	8.47	Terre Verte Hue	8.5GY	2.8	2.2	28.61	-7.13	7.7
Titan Buff	2.5 Y	8.5	2	84.57	2.01	16.99	Titan Buff	2.2Y	8.2	2	82.9	1.22	15.14
Titan Green Pale	5.9 GY	8	1.7	80.49	-4.97	11.74	Titan Green Pale	5.8 GY	7.9	1.8	79.54	-4.97	11.88
Titan Mars Pale	1.6 YR	8.2	3.5	82.25	12.42	13.12	Titan Mars Pale	1.8 YR	8	3.5	81.16	12.39	13.3
Titan Violet Pale	1.0 RP	8.7	2	87.85	4.32	-1.64	Titan Violet Pale	1.3 RP	8.6	2	86.73	4.25	-1.51
Titanate Yellow	9.5 Y	9	7.5	88.93	-6.36	56.29	Titanate Yellow	9.6Y	9	8.2	89.69	-7.5	61.88
Titanium White	0.2 GY	9.7	0.2	98.28	-0.9	1.67	Titanium White	N10	10	1.1	99.38	-0.71	2.5
Transparent Brown Iron Oxide	2.9 YR	2.8	0.8	29.07	3.72	3.12	Transparent Brown Iron Oxide	6.1YR	1.2	2.4	12.07	10.11	11.33
Transparent Pyrrole Orange	7.8 R	4.9	14.1	46.97	53.49	37.41	Transparent Pyrrole Orange	9.7R	4	14.6	40.11	53.56	56.51
Transparent Red Iron Oxide	8.1 R	3.2	3.2	32.8	16.85	8.85	Transparent Red Iron Oxide	2.5YR	2.4	6.2	23.88	24.07	23.73
Transparent Yellow Iron Oxide	6.3 YR	4.7	5.2	48.08	16.36	25.53	Transparent Yellow Iron Oxide	10.0YR	4.6	6.9	46.51	15.4	41.76
Turquoise (Phthalo)	4.8 PB	2.4	1.5	25.76	-1.64	-8.12	Turquoise (Phthalo)	5.0PB	0.6	4.6	6.95	-3.86	-14.16
Ultramarine Blue	9.5 PB	2.4	8	24.36	12.28	-25.74	Ultramarine Blue	9.2PB	1.3	5	14.26	10.57	-20.61
Ultramarine Violet	0.5P	2.38	4.87	25.37	8.43	-15.84	Ultramarine Violet	0.1P	1.7	3.3	17.88	7.66	-14.33
Van Dyke Brown Hue	8.2YR	2.45	0.13	27.04	0.34	-0.04	Van Dyke Brown Hue	1.9Y	0.9	0.8	9.02	2.12	4.6
Vat Orange	8.9 R	5.4	14.4	54.19	53.46	48.12	Vat Orange	0.1YR	5.2	16.7	51.36	58.71	70.22
Violet Oxide	6.0 R	3.2	4.1	32.13	17.48	8.24	Violet Oxide	9.5R	2.2	6.6	22.03	27.68	17.17
Viridian Green Hue	3.1 BG	3.3	4.3	35.64	-24.01	0.39	Viridian Green Hue	2.3BG	2.6	6.6	27.74	-33.2	0.67
Yellow Ochre	8.3 YR	5.7	6.9	57.53	16.17	37.79	Yellow Ochre	8.8YR	5.4	8.2	54.17	19.33	48.04
Yellow Oxide	0.2 Y	6.3	7.5	61.2	15.03	43.46	Yellow Oxide	1.0Y	6.1	8.6	60.59	15.46	54.02
Zinc White	4.7 Y	9.4	0.2	95.83	-0.49	0.56	Zinc White	N10	10	1.5	96.56	-0.96	2.23

Updated 032921