Pigment Dispersions for Solvent-Based Urethane Coatings

Color Solutions

Chroma-Chem® UCD® HS

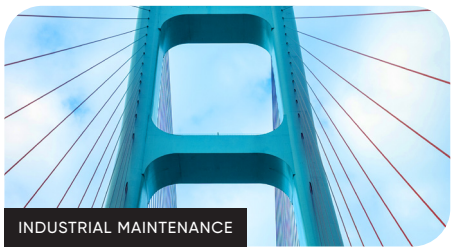
General Information

The UCD® HS Line colorants meet the conditions for pigmented, low Volatile Organic Compound (VOC) polyurethanes to replace low-solids thermoplastic acrylics in applications where exterior durability or chemical resistance of the coatings is required.

Key Benefits

The UCD® HS Line of automotive (exterior) grade colorants is formulated at maximum loadings with a rheological profile that makes them resistant to separation by settling or syneresis. The hydroxy-functional resin ensures that the dispersing resin will cross-link in the coating, improving the coatings' durability. The methyl amyl ketone solvent assures long package life and freedom from caking and drying in opened containers or dispensing equipment.

This colorant line offers high functional reactivity for maximum resistance properties, low VOC levels, excellent pigment development, and rheological characteristics that contribute extraordinary stability to the colorant (resistance to flocculation, settling, and syneresis). The combination of properties yields a colorant line that has minimal impact on the performance of high-end protective coatings.



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Properties

The UCD® HS colorants are formulated with a hydroxyl-functional acrylic resin with an equivalent weight of 400 (on solids). The primary solvent is methyl n-amyl ketone, which offers the benefit of low specific gravity.

The tint strength of these colorants is controlled by volume to ± 2% to ensure optimal tinting performance in volumetric dispensing equipment. The density of the colorants are also tightly controlled to provide consistent in-plant tinting capabilities.

In addition to the superior pigment development afforded by the HS millbase, all colorants exhibit excellent grind, high gloss, transparency (organics), and high tinting strength value.

Applications

The UCD® HS Line is formulated for use in high-end, solvent-based industrial coatings including, but not limited to, automotive OEM, automotive refinish, industrial maintenance, marine, and protective coatings.

Compatibility

While primarily designed for tinting of urethane coatings, the UCD® HS colorants are compatible with a wide variety of solvents, resins, polymers, reactive diluents, and additives. To obtain full properties from the tinted coating, the resin in the colorants needs to be crosslinked within the coating.

Shelf Life

Proper handling is essential to maintain good quality. It is recommended that the colorants be mixed prior to use. Containers should be tightly sealed when not in use. Repacking the colorant into a smaller container should be considered if the colorant level in the container is less than 20% of the original amount and will be stored for a extended period of time.

Shelf life on the HS line colorants is 3 years from the date of manufacture in unopened containers.

Product Code	Description	CI Name	% Pigment		% Resin		% Volatiles		% Other Non-Volatiles		Specific Gravity	VOC [a]	Pigment Lightfastness		Pigment Resistance	
			X Wt.	X Vol.	X Wt.	X Vol.	X Wt.	X Vol.	X Wt.	X Vol.		g/L	Mass	Tint	Acid	Alkali
UCD-1106HS	Titanium Dioxide	White 6	70.0	35.5	15.1	27.8	13.5	34.0	1.4	2.7	2.03	274	N	N	N	N
UCD-1514HS	Lampblack	Black 7	20.0	11.6	40.3	37.9	38.8	49.7	0.9	0.8	1.04	403	N	N	N	N
UCD-1524HS	Carbon Black	Black 7	16.9	9.5	39.5	36.4	41.8	52.6	1.8	1.5	1.02	425	N	N	N	N
UCD-1655HS	Jet Carbon Black	Black 7	10.0	5.5	45.3	40.3	44.7	54.2	0.0	0.0	0.98	439	N	N	N	N
UCD-4741HS	Phthalo Blue GS NF	Blue 15:4	20.0	12.9	37.9	35.4	38.8	48.7	3.3	3.0	1.03	399	N	N	N	N
UCD-4825HS	Phthalo Blue GS	Blue 15:3	24.7	16.2	36.8	35.5	35.0	45.0	3.5	3.3	1.06	371	N	N	N	N
UCD-4830HS	Phthalo Blue RS	Blue 15:2	20.0	12.3	37.9	36.0	37.5	47.5	4.6	4.2	1.05	392	N	N	N	N
UCD-5150HS	Phthalo Green BS	Green 7	25.0	13.0	37.7	38.0	33.8	45.6	3.5	3.4	1.11	375	N	N	N	N
UCD-5166HS	Phthalo Green YS	Green 36	25.3	9.9	37.6	39.2	34.3	48.1	2.8	2.8	1.15	394	N	N	N	N
UCD-5628HS	Isoindoline Yellow	Yellow 139	49.0	34.3	24.8	27.6	23.9	35.6	2.3	2.5	1.22	293	N	N	N	A
UCD-5643HS	Bismuth Vanadate	Yellow 184	62.0	21.6	19.1	33.8	17.3	41.6	1.6	3.0	1.94	336	N	N	A	S
UCD-5654HS	Fast Yellow	Yellow 154	40.5	28.9	29.6	30.5	27.8	38.5	2.1	2.1	1.13	315	N	N	N	N
UCD-5696HS	Organic Yellow	Yellow 151	30.0	20.7	33.9	32.9	34.1	44.5	2.0	1.9	1.07	364	N*	N*	N	A
UCD-5721HS	Transparent Yellow Oxide	Yellow 42	30.0	10.9	35.2	38.3	32.9	48.7	1.9	2.1	1.20	394	N	N	N	N
UCD-5725HS	Cool Yellow	Brown 24	59.0	23.2	18.7	29.4	21.4	45.7	0.9	1.7	1.73	369	N	N	N	N
UCD-5739HS	Organic Yellow RS	Yellow 139	24.2	15.8	35.9	34.1	37.4	47.8	2.5	2.3	1.04	390	N*	N*	N	S
UCD-5750HS	Yellow Oxide	Yellow 42	50.0	19.3	25.2	34.8	22.9	43.4	1.9	2.5	1.52	350	N	N	N	N
UCD-5783HS	Diarylide Yellow RS	Yellow 83	20.0	14.3	44.3	42.5	31.0	40.2	4.7	3.0	1.06	328	N	A	N	N
UCD-5861HS	Burnt Umber	Brown 7	41.7	16.0	30.2	37.9	23.7	40.6	4.4	5.5	1.38	328	N	N	N	N
UCD-5891HS	Transparent Red Oxide	Red 101	35.0	8.9	32.7	39.4	29.3	48.0	3.0	3.7	1.33	388	N	N	N	N
UCD-6004HS	Fast Orange	Orange 36	45.0	32.5	27.7	29.4	25.2	35.9	2.1	2.2	1.17	295	N	N	N	N
UCD-6012HS	Organic Orange	Orange 34	30.0	22.0	33.6	31.9	34.3	44.1	2.1	2.0	1.05	360	A	A	N	N
UCD-6173HS	DPP Orange	Orange 73	27.0	20.2	22.0	19.4	48.8	58.3	2.2	2.1	0.97	474	N	N	N	N
UCD-6080HS	Red Oxide	Red 101	65.0	26.3	17.6	31.7	15.8	38.9	1.6	3.1	1.98	313	N	N	N	N
UCD-6436HS	Perylene Maroon	Red 179	30.0	19.7	35.2	35.1	31.5	42.0	3.3	3.2	1.10	346	N	N	N	N
UCD-6470HS	Quinacridone Magenta	Red 122	16.9	11.3	42.4	39.4	36.6	45.6	4.1	3.7	1.02	375	N*	S*	N	N
UCD-7949HS	Organic Red	Red 170	30.0	21.4	35.2	34.0	33.0	42.9	1.8	1.7	1.06	351	N	S	N	N
UCD-7971HS	Anthraquinone Red	Red 177	11.0	7.4	53.9	49.7	33.2	41.2	1.9	1.7	1.01	336	N	**	N	N
UCD-8000HS	DPP Red	Red 254	22.5	14.9	44.0	42.4	31.5	40.8	2.0	1.9	1.06	334	S	S	N	N
UCD-8010HS	DPP Red HL	Red 254	35.0	24.5	32.2	32.5	29.4	39.7	3.4	3.3	1.11	327	N	S	N	N
UCD-8030HS	Quinacridone Red	Violet 19	22.0	13.0	37.8	36.0	38.2	49.1	2.0	1.9	1.05	400	S	S	N	N
UCD-8406HS	Carbazole Violet	Violet 23	13.5	8.8	40.3	36.0	42.7	51.8	3.5	3.4	0.98	421	N	S	N	N
UCD-8443HS	Quinacridone Violet	Violet 19	20.0	13.6	41.1	38.2	37.0	46.5	1.9	1.7	1.02	379	S	S	N	N

[a] Expected values based on formulation

Lightfastness and Resistance Key			
N	no bleed/discoloration	*	no Florida data, only Fadeometer
S	slight	**	no data
A	appreciable		

Lightfastness and Resistance information is provide for guidance purposes only.
Source: NPIRI Raw Materials Data Handbook Volume 4 (© 2000)