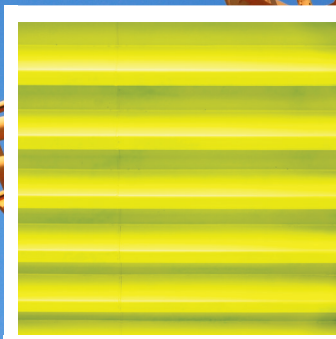
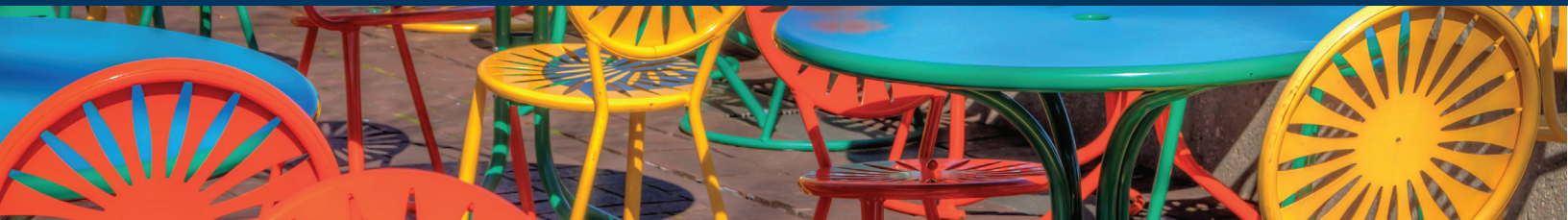


Milliken®
Specialty Colorants
for Industrial Coatings











Milliken™



Keyfast Spirit Solvent Soluble Powder Dyes

The Keyfast Spirit line of dye powders are a long standing and popular solvent soluble metal complex family of dyes that provide added formulation flexibility and strength in solvent based systems. Brilliant, organic, and clean, Keyfast Spirit dyes are particularly suited for the production of transparent and relatively lightfast shades in foil coatings, wood coatings and wood related finishes, metal deco, automotive refinish, decorative concrete, and printing ink applications.

Product Name	Color Index Name	SOLUBILITY (GRAMS / LITER)*									Lightfastness	RESISTANCE TO OTHER CHEMICALS			
		Methyl Ethyl Ketone (MEK)	Methyl Iso Butyl Ketone (MIBK)	Acetone	Ethyl Acetate	Diacetone Alcohol	Ethyl Cellosolve	Ethanol	Toluene	Cyclohexanone		Caustic Soda	Acetic Acid	Soap	Water 80° C 30 Min.
Keyfast Spirit Yellow 4G 	SY 42	30	20	50	100	250	100	190	220	50	3-4	5	5	4-5	5
Keyfast Spirit Yellow 2RLS 	SY 62	50	50	100	25	300	250	50	Trace	125	6	5	5	4-5	5
Keyfast Spirit Yellow 2GN 	SY 82	50	200	250	150	400	400	100	50	100	6-7	5	5	4-5	5
Keyfast Spirit Golden Yellow 3R 	Proprietary Blend	50	200	250	150	400	400	100	30	175	6	5	5	4	5
Keyfast Spirit Orange RE 	SO 54	400	100	450	10	200	150	40	Trace	250	6	5	5	5	5
Keyfast Spirit Orange RLN 	SO 99	250	200	275	50	300	425	75	Trace	75	6	5	5	3	3
Keyfast Spirit Red 2BK 	SR 8	200	200	200	50	200	300	100	Trace	75	6	5	4	4	3
Keyfast Spirit Fire Red G 	SR 119	100	50	200	20	200	200	20	Trace	150	6	5	4	3	5






*These gram / liter solubility figures are certainly best case statistics and depending on your specific solvent quality, solvent mix formulation and powder dye moisture conditions, these numbers may vary. Please consult your Milliken technical representative with questions regarding your specific applications and needs.

Product Name	Product Code/Color Index Name	SOLUBILITY (GRAMS / LITER)*										RESISTANCE TO OTHER CHEMICALS			
		Methyl Ethyl Ketone (MEK)	Methyl Iso Butyl Ketone (MIBK)	Acetone	Ethyl Acetate	Diacetone Alcohol	Ethyl Cellosolve	Ethanol	Toluene	Cyclohexanone	Lightfastness	Caustic Soda	Acetic Acid	Soap	Water 80° C 30 Min.
Keyfast Spirit Red KL 	Y/S SR 122	300	250	200	50	200	300	100	Trace	75	6	5	4	4	3
Keyfast Spirit Red BL 	B/S SR 122	250	200	200	50	200	300	100	Trace	60	6	5	5	4	3
Keyfast Spirit Magenta RBS 	SR 127	20	20	25	20	100	100	100	Trace	75	3-4	4-5	5	4-5	3
Keyfast Spirit Black X-51 	SB 27	250	200	250	100	350	400	140	Trace	100	6	5	5	5	5
Keyfast Spirit Black KR 	SB 29	510	285	250	75	300	350	480	Trace	50	5-6	5	5	5	5
Keyfast Spirit Blue 6G-SS 	SB 70	120	75	150	30	250	150	200	Trace	50	6	5	3-4	3-4	5
Keyfast Spirit Blue 3R 	Proprietary Blend	200	50-70	25	10	200	20	10	<10	200	2-3	4-5	4-5	5	4
Keyfast Spirit Royal Blue 	Proprietary Blend	100	50	120	20	200	150	200	Trace	50	5-6	5	3-4	3	4
Keyfast Spirit Brown 2RM 	Proprietary Blend	240	175	250	50	300	250	100	Trace	75	6	5	5	2-3	4
Keyfast Spirit Dark Brown 5R 	Proprietary Blend	250	175	250	50	300	250	100	Trace	75	6	4-5	4-5	2-3	4-5
Keyfast Spirit Green GL 	Proprietary Blend	175	100	125	100	250	150	100	Trace	75	5-6	5	4	2-3	5

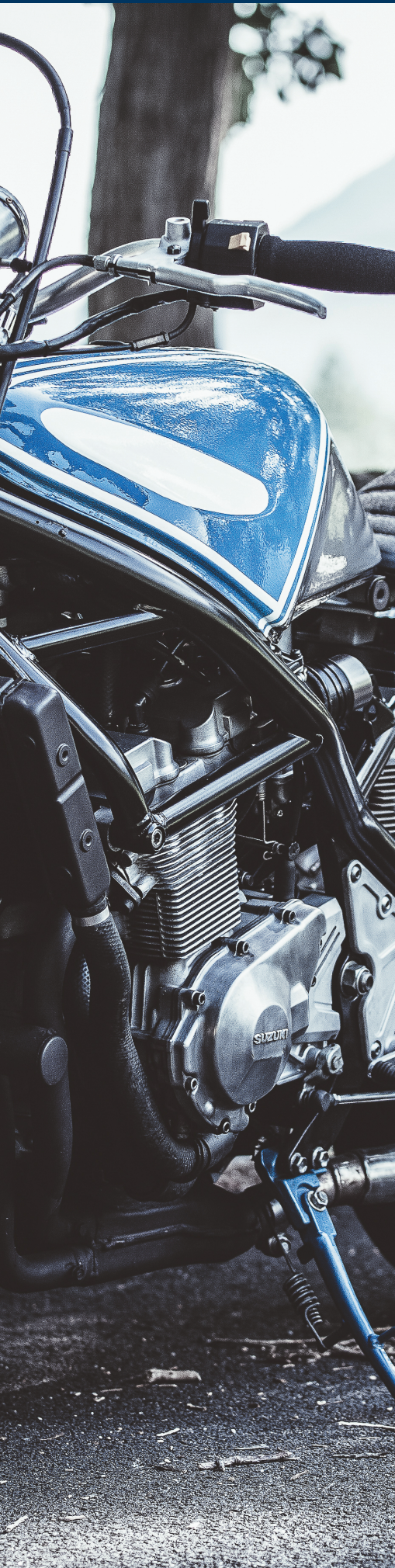
*These gram / liter solubility figures are certainly best case statistics and depending on your specific solvent quality, solvent mix formulation and powder dye moisture conditions, these numbers may vary. Please consult your Milliken technical representative with questions regarding your specific applications and needs.

Keygloss RF Series

The Keygloss RF series is specifically formulated for demanding solvent borne metal, glass, and plastic coatings—and an excellent choice for use in transportation finishes and sports equipment coatings where brilliant, chromatic color is required. Engineered with one of the industry's finest dispersion resins for this technology, it offers excellent lightfastness and gloss characteristics and is very consistent in shade, tint strength, and viscosity stability. This line is compatible in a wide range of solvent systems including ester, ketones, and aromatics.

Product Name	Pigment	Lbs. / Gal.	Solids	VOC %	Flash Point
Keygloss Black RF 	Black 7	8.93	52.0%	48.0%	< 75 °F
Keygloss Blue RF 	Blue 15:4	8.43	39.0%	60.5%	< 75 °F
Keygloss Green RF 	Mix	8.55	32.0%	68.0%	< 75 °F
Keygloss Orange RF 	Orange 71	8.25	31.5%	68.5%	< 75 °F
Keygloss Red RF 	Red 179	8.34	34.0%	66.0%	< 75 °F
Keygloss Scarlet RF 	Violet 19	8.23	36.5%	63.5%	< 75 °F
Keygloss Violet RF 	Violet 37	9.25	32.5%	67.5%	< 75 °F
Keygloss Yellow RF 	Yellow 83	7.77	25.2%	74.8%	< 75 °F
Keygloss White RF 	TiO ₂	17.82	80.0%	20.0%	< 75 °F












Morfast® Liquid Dyes

Morfast dyes are single-phase liquids produced as 50% concentrates in n-Propanol and compatible with a wide range of solvent systems including glycol ethers, ketones, esters, and aromatic hydrocarbons. These dyes are well suited for use in permanent marketing inks, ink jet applications, and ballpoint pen inks. With excellent lightfastness properties, high color strength, and low viscosity, they are also recommended for use in lacquers, enamels, decorative coatings, and flexographic and gravure inks.

*PRODUCED BY SUNBELT CORPORATION AND DISTRIBUTED EXCLUSIVELY BY MILLIKEN

Product Name	Color Index Name
Morfast Yellow 101 	Yellow - Azo
Morfast Yellow 102 	Yellow - Cobalt Complex Azo
Morfast Red 101 	Red - Scarlet Azo
Morfast Red 102 	Red - B/S Cobalt Complex Azo
Morfast Red 105 	Red - Metal Complex
Morfast Violet 101 	Proprietary Violet Blend
Morfast Blue 101 	Bright Blue - Phthalo

Product Name	Color Index Name
Morfast Blue 104 	Blue - Reddish Metal Complex
Morfast Blue 106 	Blue - Reddish Metal Complex
Morfast Green 101 	Green - Mid Shade Phthalo
Morfast Brown 100 	Brown - Iron Complex Azo
Morfast Black 101 	Black Bluish Cobalt Complex
Morfast Black 108 	Black - Violet Cast, Intense
Morfast Black 112 	Black - Blue Shade

INDUSTRIAL COATINGS

Product Lines and Expertise

Pigments and dyes are complex raw materials and they require an extraordinary understanding.

Whether custom formulation and synthesis, product development assistance, or analytical evaluation and testing, our philosophy is the same—to create pragmatic solutions for any challenge presented to us. Our team’s unparalleled color experience and interpretation of global regulatory requirements are evident in the innovative, reliable, and compliant results we deliver. This is why we claim longstanding relationships with so many successful clients. Your products and processes will work because our solutions do.

Milliken product lines produced specifically for industrial coatings and industrial related finishes:

DYES

Keyfast Spirit Dye Powders

Metal Complex Solvent Soluble Dyes

Good Solubility in Cellosolve and Other Solvents

Foil Coatings, Wood and Wood Related Finishes and Coatings

Decorative Concrete, Printing Inks

Brilliant, Organic, and Clean

Transparent

Morfast Liquid Dyes

50% Liquid Concentrate in n-Propanol

Compatible in Wide Range of Solvent Systems

Permanent Marking Inks, Ink Jet Applications, Ballpoint Pen Inks, Lacquers, Enamels, Decorative

Coatings, Flexographic and Gravure Inks

Transparent

PIGMENT DISPERSIONS

Keygloss RF Series

Solvent Based Acrylic Dispersions

Compatible in Wide Range of Solvent Systems

Automotive, Recreational Equipment, Hot Stamp, Foil

Consistent Shade, Tint

Strength, Viscosity Stability

Bright, Clean, and Glossy

Transparent





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