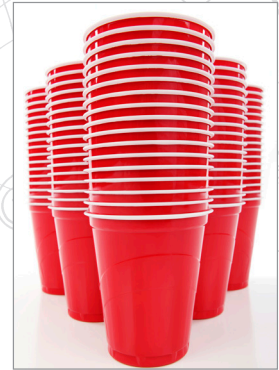


Milliken®

Food Contact Compliant Polymer Colors & Brighteners

The following Milliken colorants may be used safely in the manufacture of articles intended for use in polymers. We offer these colorants, confident that they will meet and exceed expectations for color brilliance and consistent quality in food contact applications. Conditions of use are outlined below.



Food Contact Compliant Colorants under 21 CFR Regulations*

	NAME	COLORANT NAME	REGULATORY STATUS	FOOD TYPES*	ADDITIONAL RESTRICTIONS
■ BLACKS	MPC Channel Black	Pigment Black 7	21 CFR 178.3297	All	None
	Micropulverized MPC Channel Black	Pigment Black 7	21 CFR 178.3297	All	None
■ BLUES	Keyplast Blue KGR	Pigment Blue 15:1	21 CFR 178.3297	All	None
	Keyplast Phthalo Blue KG	Pigment Blue 15:3	21 CFR 178.3297	All	None
■ GREENS	Keyplast Phthalo Green	Pigment Green 7	21 CFR 178.3297	All	None
■ ORANGES	Keyplast Orange GP	Pigment Orange 64	21 CFR 176.3297	B-H	1.0% max
■ REDS	Keyplast Vat Red V	Pigment Red 177	21 CFR 178.3297	B-H	1.0% max
	Keyplast Red KPP	Pigment Red 254	21 CFR 178.3297	B-H 1.0% Max	
■ YELLOWS	Keyplast Yellow 3KLTN	Pigment Yellow 110	21 CFR 176.170 c	B-H	1.0% max
	Keyplast Yellow 7GK	Pigment Yellow 138	21 CFR 178.3297	C-H	1.0% max No hot fill exceeding 158F
	Keyplast Yellow RNB	Pigment Yellow 147	21 CFR 177.1630	D-F, G	.25% max
	Keyplast Yellow KG	Pigment Yellow 180	21 CFR 178.3297	B-G	1.0% max
OPTICAL BRIGHTENERS	Keyfluor White OB-1	Fluorescent Brightener 393	21 CFR 176.170 c	I, I, IV-b, VI-a, VII-B, VIII	.025% max
	Keyfluor White OB	Fluorescent Brightener 184	21 CFR 176.170 c	I, I, IV-b, VI-a, VI-c, VII-B, VIII	.05% max

Food Contact Compliant Colorants For PET*

The following Milliken colorants may be used safely in the manufacture of articles intended for use in PET

	NAME	COLORANT NAME	REGULATORY STATUS	FOOD TYPES*	ADDITIONAL RESTRICTIONS
■ BLACKS	Keyplast Black AMX	Solvent Black blend	Food contact compliant	E-H	.25% max
	MPC Channel Black	Pigment Black 7	21 CFR 178.3297	All	None
	Micropulverized MPC Channel Black	Pigment Black 7	21 CFR 178.3297	All	None
■ BLUES	Keyplast Blue BGL	Disperse Blue 60	Food contact compliant	E-H	.25% max
	Keyplast Blue KR	Solvent Blue 104	Food contact compliant	A-H	.25% max
	Keyplast Blue KGR	Pigment Blue 15:1	21 CFR 178.3297	All	None
■ GREENS	Keyplast Green B	Solvent Green 3	Food contact compliant	A-H	.25% max
	Keyplast Phthalo Green	Pigment Green 7	21 CFR 178.3297	All	None
	Keyplast FL Yellow Green 7G	Solvent Green 5	Food contact compliant	D-G	.10% max
■ ORANGES	Keyplast Orange LFP	Solvent Orange 60	Food contact compliant	D-G	.25% max
	Keyplast Orange LFP-HD	Solvent Orange 60	Food contact compliant	D-G	.25% max
	Keyplast FL Orange 2G	Solvent Orange 63	Food contact compliant	D-G	.10% max
	Keyplast Orange GP	Pigment Orange 64	21 CFR 178.3297	B-H	1.0% max
	Keyplast FL Red GL	Proprietary	Food contact compliant	D-G	.20% max aqueous foods .1% max fatty foods
	Keyplast FL Orange YF	Proprietary	Food contact compliant	D-G	.10% max
■ REDS	Keyplast Red 60	Disperse Red 60	Food contact compliant	E-H	.21% max
	Keyplast Red AG	Solvent Red 135	Food contact compliant	A-H	.25% max
	Keyplast FL Red G	Solvent Red 149	Food contact compliant	D-G	.10% max
	Keyplast Red CB	Solvent Red 195	Food contact compliant	E-H	.25% max
	Keyplast Red H	Proprietary	Food contact compliant	D-G PET and Tritan	.25% max
	Keyplast Vat Red V	Pigment Red 177	21 CFR 178.3297	B-H	1.0% max
	Keyplast Red KPP	Pigment Red 254	21 CFR 178.3297	B-H	1.0% max

* See reverse side for food type restrictions

Food Contact Compliant Colorants For PET*

The following Milliken colorants may be used safely in the manufacture of articles intended for use in PET

	NAME	COLORANT NAME	REGULATORY STATUS	FOOD TYPES*	ADDITIONAL RESTRICTIONS
■ VIOLETS	Keyplast Violet IRS	Solvent Violet 13	Food contact compliant	E-H	.25% max
■ YELLOWS	Keyplast Yellow 6G	Disperse Yellow 201	Food contact compliant	C-H	.2% max
	Keyplast Yellow 4GL	Disperse Yellow 241	Food contact compliant	E-H	.16% max
	Keyplast Yellow 3G	Solvent Yellow 93	Food contact compliant	A-H	.25% max
	Keyplast Yellow AG	Solvent Yellow 114	Food contact compliant	D-G	.25% max
	Keyplast FL yellow 10GN	Solvent Yellow 160:1	Food contact compliant	D-G	.10% max
	Keyplast Yellow 3KLTN	Pigment Yellow 110	21 CFR 176.170 c	B-H	1.0% max
	Keyplast Yellow 7GK	Pigment Yellow 138	21 CFR 178.3297	C-H	1.0% max
	Keyplast Yellow RNB	Pigment Yellow 147	21 CFR 177.1630	D-F, G	.25% max
	Keyplast Yellow KG	Pigment Yellow 180	21 CFR 176.170 c	B-G	1.0% max
OPTICAL BRIGHTENERS	Keyfluor White OB-1	Fluorescent Brightener 393	21 CFR 176.170 c	I, I, IV-b, VI-a, VII-B, VIII	.025% max
	Keyfluor White OB	Fluorescent Brightener 184	21 CFR 176.170 c	I, I, IV-b, VI-a, VI-c, VII-B, VIII	.05% max

Food Contact Compliant Colorants For Foamed Styrene*

	NAME	COLORANT NAME	REGULATORY STATUS	FOOD TYPES*	ADDITIONAL RESTRICTIONS
■ BLACKS	MPC Channel Black	Pigment Black 7	21 CFR 178.3297	All	None
	Micropulverized MPC Channel Black	Pigment Black 7	21 CFR 178.3297	All	None
■ BLUES	Keyplast Blue A	Solvent Blue 36	Threshold of migration	F, G, E	.011% max
■ REDS	Keyplast Red B	Solvent Red 23	Threshold of migration	F, G, E	.055% max
	Keyplast Red A	Solvent Red 24	Threshold of migration	F, G, E	.150% max
■ YELLOWS	Keyplast Yellow 2GH	Solvent Yellow 72	Threshold of migration	F, G, E	.039% max
■ ORANGES	Keyplast Orange LFP	Solvent Orange 60	Threshold of migration	F, G	.015% max
	Keyplast Orange LFP-HD	Solvent Orange 60	Threshold of migration	F, G	.015% max

21 CFR 176.170 c, 21 CFR 178.3297 and Threshold of migration food types

Types of Raw and Processed Foods

- Nonacid, aqueous products; may contain salt or sugar or both (pH above 5.0).
- Acid, aqueous products; may contain salt or sugar or both, and including oil-in-water emulsions of low- or high-fat content.
- Aqueous, acid or nonacid products containing free oil or fat; may contain salt, and including water-in-oil emulsions of low- or high-fat content.
- Dairy products and modifications:
 - Water-in-oil emulsions, high- or low-fat.
 - Oil-in-water emulsions, high- or low-fat.
- Low-moisture fats and oil.
- Beverages:
 - Containing up to 8 percent of alcohol.
 - Nonalcoholic.
 - Containing more than 8 percent alcohol.
- Bakery products other than those included under Types 8 or 9 of this table:
 - Moist bakery products with surface containing free fat or oil.
 - Moist bakery products with surface containing no free fat or oil.
- Dry solids with the surface containing no free fat or oil (no end test required).
- Dry solids with the surface containing free fat or oil.

Conditions of use

- A-High temperature heat-sterilized (e.g., over 212 deg. F).
- B-Boiling water sterilized.
- C-Hot filled or pasteurized above 150 deg. F.
- D-Hot filled or pasteurized below 150 deg. F.
- E-Room temperature filled and stored (no thermal treatment in the container).
- F-Refrigerated storage (no thermal treatment in the container).
- G-Frozen storage (no thermal treatment in the container).
- H-Frozen or refrigerated storage: Ready-prepared foods intended to be reheated in container at time of use:
 - Aqueous or oil-in-water emulsion of high- or low-fat.
 - Aqueous, high- or low-free oil or fat.
- I-Irradiation
- J-Cooking at temperatures exceeding 250 deg. F.

PLEASE NOTE: As each customer's use of our product may be different, information we provide, including without limitation, recommendations, test results, samples, care/labeling/processing instructions or marketing advice, is provided in good faith but without warranty and without accepting any responsibility/liability. Each customer must test and be responsible for its own specific use, further processing, labeling, marketing, etc. All sales are exclusively subject to our standard terms of sale posted at www.milliken.com/terms (all additional/different terms are rejected) unless explicitly agreed otherwise in a signed writing.

NORTH AMERICA
Spartanburg, SC, USA
Tel: 800-910-5592
Fax: 864-503-2430
millichem@milliken.com

EUROPE
Gent, Belgium
Tel: 32-9-265-1100
Fax: 32-9-265-1195
eurochem@milliken.com

LATIN AMERICA
Sao Paulo, Brazil
Tel: 55-11-3043-7942
Fax: 55-11-3043-7096
lachem@milliken.com

LATIN AMERICA
Mexico City, Mexico
Tel: 52-55-3088 3600
Fax: 52-55-9000 2643
lachem@milliken.com

ASIA
Singapore
Tel: 65-6377-0770
Fax: 65-6377-0990
asiachem@milliken.com

ASIA
Shanghai
Tel: 86-21 6145-5555
Fax: 86-21 6145-5558
asiachem@milliken.com

ASIA
Pune, India
Tel: 91.20.6730.7501
Fax: 91.20.6730.7514
asiachem@milliken.com