



KEYPLAST Colorants for PET

Keystone Aniline Corporation is pleased to announce the development of the Keyplast Colorants for Polyethylene terephthalate (PET). With the ever demanding growth of PET for packaging, bottles and many other FDA applications, new colorants and special effects have become a necessity. This range of unique dyes can be utilized to create an entire range of shades including Water Bottle Blue, Amber and Blacks in both transparent and opaque shades. In addition, Keystone offers a complete range of colorants meeting the FDA Compliancy for use in PET. This includes dyes that meet FDA conditions A-H, which could ultimately create opportunities in new applications.

	Product Name	Product Code	CI No.	FDA Conditions	Comments
■ BLACKS	MPC Channel Black	110-007-60	P.Blk. 7	21CFR-178.3297	Standard grade Channel black
	Micro MPC Channel Black	110-007-65	P.Blk. 7	21CFR-178.3297	Micropulverized Channel black
	Keyplast Black AN	106-602-51	S.Blk.		Blue shade black w/o NIR Abs.
■ BLUES	Keyplast Blue KGR	210-015-71	P.B. 15:1	21CFR-178.3297	Red shade phthalocyanine blue
	Keyplast Blue KG	210-015-80	P.B. 15:3	21CFR-178.3297	Green shade phthalocyanine blue
	Keyplast Blue BGL	202-060-60	D.B. 60	.25% E-H	Strong green shade blue
	Keyplast Blue KR	206-104-50	S.B. 104	.25% A-H	Red shade blue
■ GREENS	Keyplast Pthalo Green	410-007-60	P.G. 7	21CFR-178.3297	Blue shade phthalocyanine green
	Keyplast Green B	406-003-50	S.G. 3	.25% A-H	Blue shade green
■ ORANGES	Keyplast Orange HR	502-025-70	D.O. 25		Strong red shade orange
	Keyplast Orange MR	502-047-50	D.O. 47		Medium shade orange
	Keyplast Orange LFP	506-060-50	S.O. 60	.25% D-G	Yellow shade orange
■ REDS	Keyplast Vat Red V	610-177-50	P.R. 177	1.00% B-H	Red shade amber in PET
	Keyplast Red 60	602-060-65	D.R. 60	.21% E-H	Strong blue shade red
	Keyplast Red AG	606-135-51	S.R. 135	.25% A-H	Medium shade red
	Keyplast Red BB	606-151-50	S.R. 151		Deep blue shade red
	Keyplast FL Red RYFP	606-400-50	D.R.		Bright fluorescent red
■ VIOLETS	Keyplast Violet PF	702-001-91	D.V. 1		Red shade violet
	Keyplast Bordeaux HBL	702-026-55	D.V. 26		Blue shade violet
	Keyplast FL Violet RRN	708-401-60	V.V. 3		Fluorescent violet
■ YELLOWS	Keyplast Yellow 4GL	802-241-50	D.Y. 241	.16% E-H	Strong medium shade yellow
	Keyplast Yellow 3G	806-093-50	S.Y. 93	.25% A-H	Medium shade yellow
	Keyplast Yellow AG	806-114-50	S.Y. 114	.25% D-G	Red shade yellow
	Keyplast Yellow 6G	802-201-50	D.Y. 201		Green shade yellow
	Keyplast FL Yellow 10GN	802-082-70	D.Y.82		Bright fluorescent yellow
OPTICAL BRIGHTENERS	Keyfluor White OB-1	915-184-52	OB 393	21CFR-178.3297	FDA optical brightener for PET

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FDA COMPLIANT TECHNICAL INFORMATION

Based on the work done in Keystone's Chicago color application laboratories, Keystone Aniline Corporation has been granted "Letters of No Objection" thereby allowing for their use in PET for food-contact applications. These letters provide processors a wider flexibility and the tools needed for FDA applications and use when working with PET. Please contact Keystone Aniline Corporation for copies of the "Letters of No Objection", or any other information you may need.

REFERENCE DATA

CFSAN/Office of Food Additive Safety - April 2006
Definitions of Food Types and Conditions of Use for
Food Contact Substances

Table 1—Types of Raw and Processed Foods




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

Table 2—Condition 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:
 1. Aqueous or oil-in-water emulsion of high- or low-fat.
 2. Aqueous, high- or low-free oil or fat.
- I. Irradiation
- J. Cooking at temperatures exceeding 250 deg.F.

TRI-CHROMATIC TECHNICAL INFORMATION

Keystone has created a unique method of creating a wide range of colorants utilizing only three tri-chromatic dyes. This range of unique dyes can be utilized to create an entire range of shades including Water Bottle Blue, Amber and Blacks in both transparent and opaque shades. The dyes and FDA limits are as follows:

Name	Code	FDA Limit
 Keyplast Blue BGL	202-060-60	.25%
 Keyplast Red 60	602-060-65	.21%
 Keyplast Yellow 4GL	802-241-50	.16%

Keystone truly believes this approach to the mass coloration of PET is a more economical approach, and when formulated properly can create new opportunities for customers in a very competitive PET market.

DISCLAIMER: These data were obtained by testing according to our methods, with any necessary test deviations. Other test methods may give different results. Incoming evaluations, by the customer is therefore unconditionally recommended. The use and application of our colorants and information included is without any warranty, whether expressed or implied, verbal or written. No statements of recommendation contained in this product literature is to be construed as inducement to infringe on any relevant patent now or hereafter in existence.

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