

KODAK PROFESSIONAL Display and Print Materials



KODAK PROFESSIONAL DURACLEAR Display Material, KODAK PROFESSIONAL DURATRANS Display Material, and KODAK PROFESSIONAL DURAFLEX Print Material are designed for making brilliant display transparencies and prints from color negatives or internegatives. They are available in a variety of sheet and roll sizes for applications that call for great durability.

KODAK PROFESSIONAL DURACLEAR Display Material is a *clear-base* color transparency material that produces large, brilliant display transparencies for use on illuminators with built-in diffusers. Its 7-mil ESTAR Thick Base provides strength and dimensional stability that make it ideal for advertising, promotional, and decorative displays.

Because PROFESSIONAL DURACLEAR Display Material has a thicker emulsion, this material requires longer processing times than the standard Process RA-4 cycle.

KODAK PROFESSIONAL DURATRANS Display Material is a *translucent-base* color transparency material designed for producing large transparencies for backlit displays on illuminators without built-in diffusers. The white-pigmented coating provides its own diffusion and its 7-mil ESTAR Thick Base provides resistance to tearing, making it especially suitable for large displays that require a suspension system with hooks, grommets, and springs.

Because PROFESSIONAL DURATRANS Display Material has a thicker emulsion, it also requires longer processing times than the standard Process RA-4 cycle.

KODAK PROFESSIONAL DURAFLEX Print Material is a tough, durable color print material for making brilliant reflection display prints. With its durable 9-mil white pigmented polyester base, PROFESSIONAL DURAFLEX Display Material is also an excellent choice for prints, ID cards, counter mats, and architectural prints. The characteristics and glossy surface are similar to those of Kodak Professional color papers.

Process this print material with KODAK EKTACOLOR RA Chemicals in a standard Process RA-4.

FEATURES	BENEFITS
• Fast printing speed	• Shorter exposure times for large formats
• Less pressure-sensitive than conventional materials	• Easier handling
• Excellent dye-retouching characteristics	• Easy retouching
• Print material with high contrast	• Excellent print quality
• Display materials with excellent splicing characteristics	• Well suited for making very large display transparencies

STORAGE AND HANDLING

Store unexposed paper at 13°C (55°F) or lower in the *original sealed package*. High temperatures or high humidity may produce unwanted quality changes.

Avoid moisture condensation on material that has been refrigerated by removing the package from cold storage the day before printing, or use these warm-up times before you open the package:

Size	Warm-Up Times (Hours) to Reach Room Temperature of 70°F (21°C)		
	From a Storage Temperature of		
	-18°C (0°F)	2°C (35°F)	13°C (55°F)
8 x 10-inch (50-sheet box)	3	2	2
16 x 20-inch (50-sheet box)	3	2	2
3½-inch x 500-foot roll	7	5	3
30-inch x 100-foot roll	8	6	4
40-inch x 100-foot roll	9	7	5

DARKROOM RECOMMENDATIONS

Handle this material in total darkness. Be sure that your darkroom is lighttight. Eliminate stray light from enlarger heads, timers, LEDs, etc.

Note: Using a safelight *will* affect your results.

If absolutely necessary, you can use a safelight equipped with a KODAK 13 Safelight Filter (amber) with a 7½-watt bulb. Keep the safelight at least 4 feet (1.2 metres) from the material. Make tests to determine that safelight use gives acceptable results for your application.

EXPOSURE

Expose these materials with enlargers equipped with tungsten or tungsten-halogen light sources or photo enlarger lamps (e.g., No. 212 or 302).

For best results with these materials, use a black-base printing easel with easel blades to prevent reflections. Using a light-colored easel can affect color balance. Tape or any other material that can cause a reflection on the printing easel may form an image through the base of the material. You can also expose DURAFLEX RA Print Material in automatic printers, such as the KODAK 3510, 2610, 2620, or 312 Color Printer or KODAK MC Digital or S-Type Color Printers. Set up and balance printers according to the manufacturer's instructions. If your printer is equipped with a punching device, turn the punch off; it may not be able to punch through the polyester base.

Do not use fluorescent lamps to expose these materials. Use a heat-absorbing glass to remove infrared radiation. Because voltage changes affect light output and color quality, use a voltage regulator.

Keep negatives and the equipment optical system clean. Mask negatives to eliminate stray light. You can use the white-light or the tricolor exposure method.

White-Light Exposure Method

Control color balance with dichroic filters built into the enlarger or printer, or with KODAK Color Printing (CP) Filters (Acetate) or KODAK Color Compensating (CC) Filters (Gelatin) placed between the lamp and the negative. You can also use CC filters between the negative and the material; however, use as few filters as possible—preferably not more than three. You can use any number of filters between the light source and the negative. If you use cyan filtration, use filters with the suffix “-2” (e.g., “CP10C-2”).

To make a test print, start with the appropriate filter pack listed in the following table. Adjust the exposure to obtain satisfactory density; adjust the filtration, if necessary, to change color balance.

KODAK PROFESSIONAL Material	Starting Filter Pack for Test Print
DURACLEAR Display	40M + 10Y
DURATRANS Display	40M + 25Y
DURAFLEX Print	40M + 30Y

Tricolor Exposure Method

Use KODAK WRATTEN Gelatin Filters No. 25 (red), No. 99 (green), and No. 47B (blue) to give the material three separate, consecutive exposures, one through each of the filters. Be careful not to move the material or the enlarger until you have made all three exposures. Typical exposure times at $f/8$ for making a 3X enlargement for PROFESSIONAL DURACLEAR Display Material and DURAFLEX Print Material (6X enlargement for PROFESSIONAL DURATRANS Display Material) from a normally exposed negative are given in the table below.

Filter	Times for an Aperture Setting of $f/8$ *		
	PROFESSIONAL DURACLEAR Display Material	PROFESSIONAL DURAFLEX Display Material	PROFESSIONAL DURATRANS Print Material
Red	2 seconds	1 seconds	2 seconds
Green	11.2 seconds	5.6 seconds	11.2 seconds
Blue	22 seconds	8.9 seconds	17.8 seconds

* For an enlarger equipped with a photo enlarger lamp No. 212 or No. 302; the aperture setting may vary with other types of lamps.

LATENT-IMAGE KEEPING

You should not notice shifts in the latent image with keeping times from 1 minute to 24 hours. Therefore, you do not need to change your printing procedures to compensate for latent-image shifts under normal temperature and handling conditions. (If shifts *do* occur, you can minimize them by keeping the time between exposure and processing the same for all material.)

PROCESSING

Use KODAK EKTACOLOR RA Chemicals for Process RA-4 to process these materials. Your processor must be capable of handling the ESTAR Thick Base of PROFESSIONAL DURACLEAR and DURATRANS Display Materials or the 9-mil polyester base of PROFESSIONAL DURAFLEX Print Material.

For information on processing these materials in continuous or roller-transport processors, see KODAK Publication No. Z-130, *Using KODAK EKTACOLOR RA Chemicals*. For information on processing these materials in trays or rotary-tube and drum processors, see KODAK Publication No. J-39, *Tray, Drum, and Rotary-Tube Processing with KODAK EKTACOLOR RA Chemicals*. Both publications are available through our website at www.kodak.com/go/photochemicals.

VIEWING

PROFESSIONAL DURACLEAR and PROFESSIONAL DURATRANS Display Materials are intended for viewing by transmitted light. When the transparency is viewed by reflected light, it should appear darker than a normal reflection print. The conditions under which you view color transparencies have a marked effect on the apparent color quality. For critical evaluation of display transparencies on these materials, place them on an illuminator that meets ANSI standard PH2.30-1989, *Viewing Conditions—Photographic Prints, Transparencies, and Photomechanical Reproductions*.

For critical applications when transparencies will be displayed on a nonstandard illuminator, judge the color balance on the type of illuminator that will be used for display. Many display transparencies, however, do not need this degree of control. For best results, use cool white deluxe fluorescent lamps. These lamps emit adequate amounts of red, green, and blue light.

Evaluate prints on PROFESSIONAL DURAFLEX Print Material under light of the same color and brightness that you will use to view the final prints. A good average viewing condition is a light source with a color temperature of 4000 \pm 1000 K, a Color Rendering Index (CRI) of 85 to 100, and an illuminance of at least 50 footcandles (538 lux). General Electric Deluxe Cool White Fluorescent Lamps (or similar lamps made by several manufacturers) meet these conditions. You can also use warmer lamps such as the Phillips 5000 K Ultralume, or a mixture of incandescent and fluorescent lamps. For each pair of 40-watt cool white deluxe fluorescent lamps, use a 75-watt frosted tungsten bulb.

FINISHING

Spotting and Retouching

You can spot or retouch these materials with KODAK Liquid Retouching Colors; do not use opaque retouching materials.

Splicing Transparencies

For large display transparencies, you can join two or more sheets of processed PROFESSIONAL DURACLEAR or PROFESSIONAL DURATRANS Display Material with KODAK Splicing Tape and KODAK Display Material Cement.

Laminating Prints

You can laminate prints on PROFESSIONAL DURAFLEX Print Material. Laminate both sides of identification cards to protect against moisture.

Notice: Many municipalities have adopted as part of their local fire codes the National Fire Protection Association (NFPA) 701-1996 *Standard Methods of Fire Tests for Flame-Resistant Textiles and Films*, which applies to plastic films used for decorative or other purposes inside buildings. To comply with this standard, you must protect displays using any of these plastic films.

We strongly recommend that you take one or both of the following measures to protect all large displays, especially if the material is displayed in a public area:

- Fully enclose the materials in a light box or an illuminator.
- Frame and laminate the materials to a non-combustible mounting board, wall, glass, or 1/4-inch or thicker polycarbonate, e.g., Lexan, support.

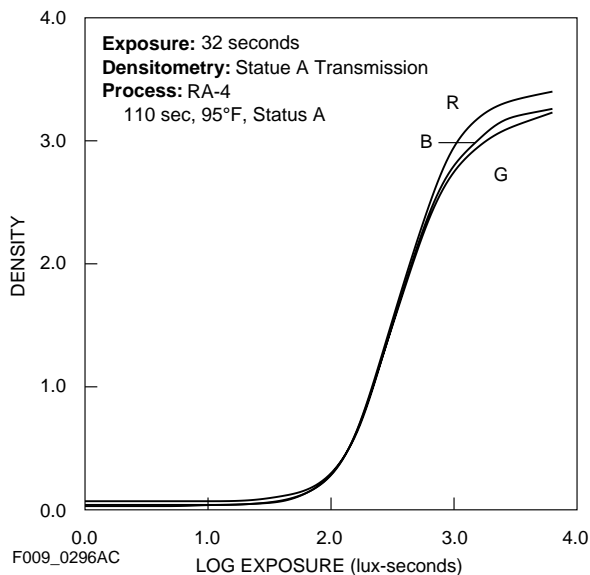
Other standards covering the burning characteristics of these products may apply to markets outside the U.S. Check with the appropriate local agency. Do not use these materials as backdrop displays in theaters.

For more information, see CIS-37, *Combustion of KODAK Films, Resin-Coated Photographic Papers, and Print and Display Materials*, on our website at www.kodak.com/go/professional.

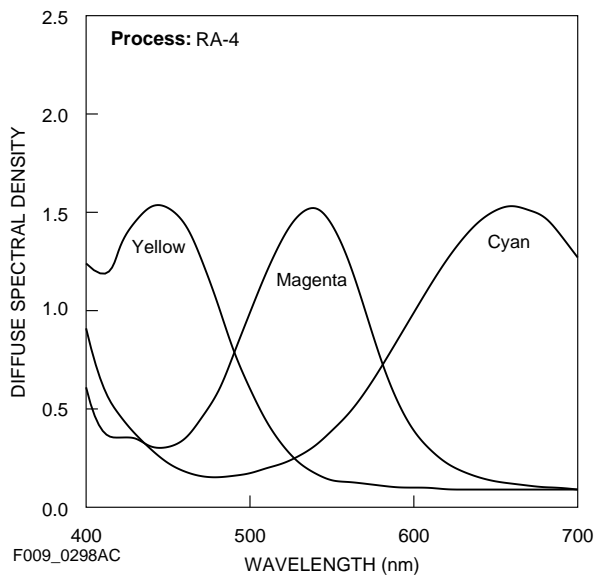
CURVES

KODAK PROFESSIONAL DURACLEAR Display Material

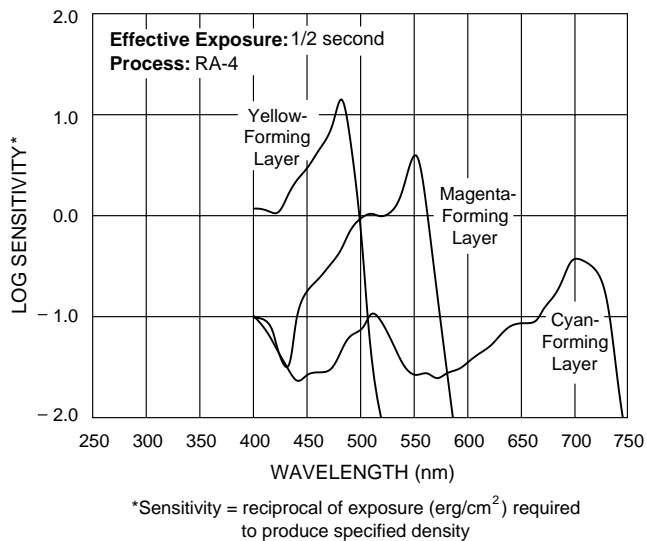
Characteristic Curves



Spectral-Dye-Density Curves



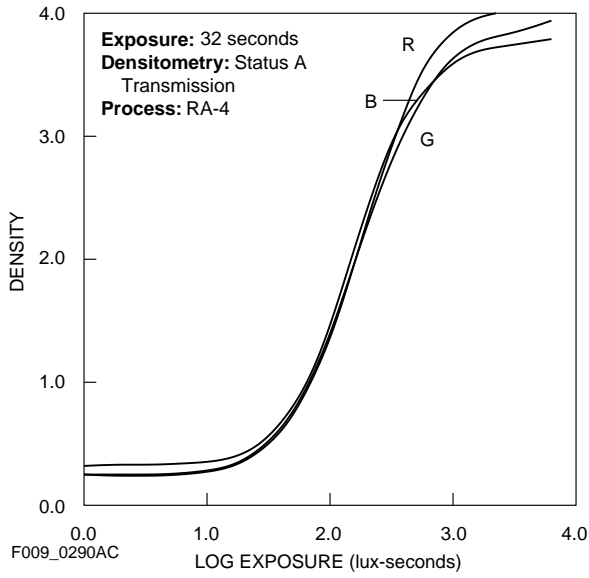
Spectral-Sensitivity Curves



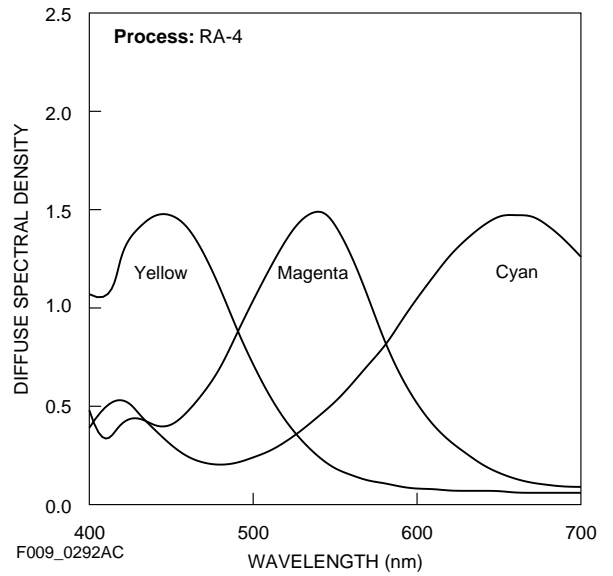
NOTICE: The sensitometric curves and data in this publication represent product tested under the conditions of exposure and processing specified. They are representative of production coatings, and therefore do not apply directly to a particular box or roll of photographic material. They do not represent standards or specifications that must be met by Eastman Kodak Company. The company reserves the right to change and improve product characteristics at any time.

KODAK PROFESSIONAL DURATRANS Display Material

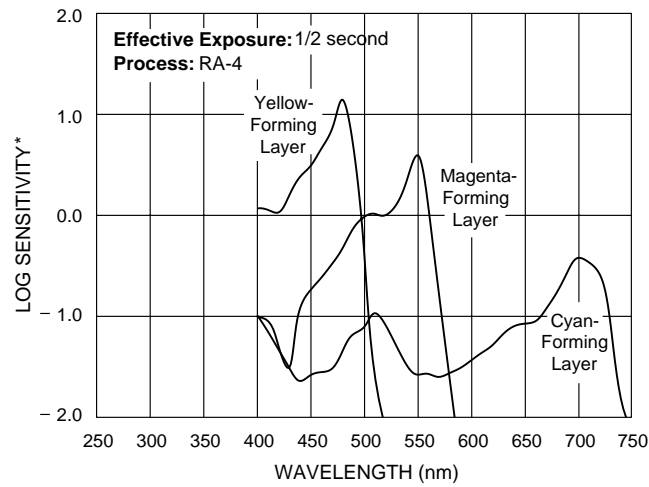
Characteristic Curves



Spectral-Dye-Density Curves



Spectral-Sensitivity Curves

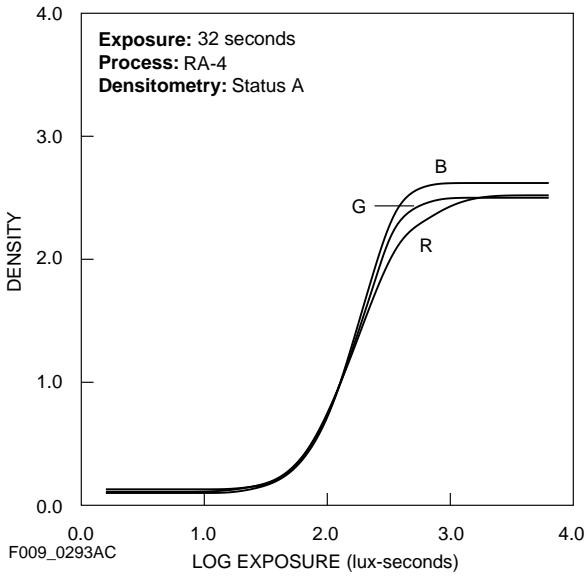


*Sensitivity = reciprocal of exposure (erg/cm²) required to produce specified density

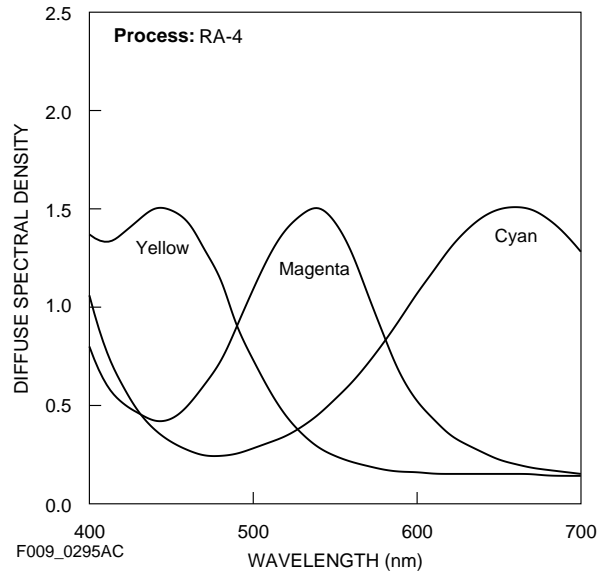
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KODAK PROFESSIONAL DURAFLEX
Print Material

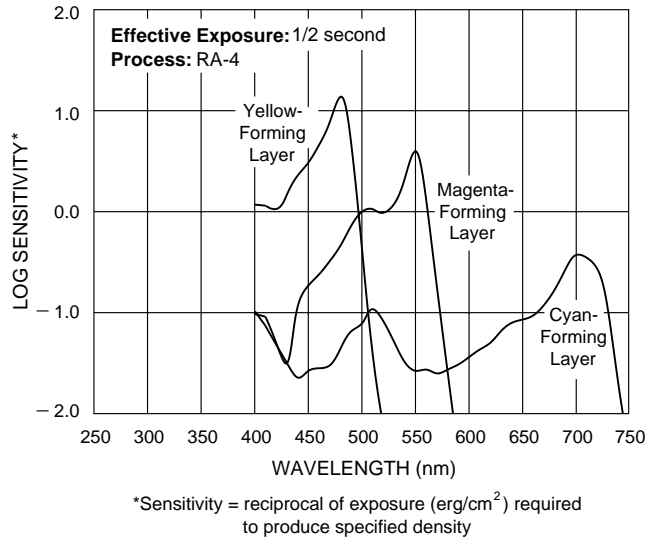
Characteristic Curves



Spectral-Dye-Density Curves



Spectral-Sensitivity Curves



SIZES AVAILABLE

KODAK PROFESSIONAL DURACLEAR Display Material

Rolls in. x ft	Sp	CAT No.
10 x 100	902	833 3460
11 x 100	902	157 3427
20 x 100	901	186 8066
24 x 100	901	824 8726
30 x 100	901	142 7129
40 x 100	901	165 9036
43 x 100	901	179 4171
50 x 100	901	184 7474
72 x 100	901	188 8452

Spec 901: Unperforated, emulsion in, no leader or trailer, no edge markings

Spec 902: Unperforated, emulsion out, no leader or trailer

Sheets (inches)	No. of Sheets	CAT No.
8 x 10	10	129 9528
8 x 10	50	813 3522
10 x 10	50	122 7917
11 x 14	10	184 4653
11 x 14	50	193 9800
16 x 20	10	139 0673
16 x 20	50	185 7366
20 x 24	10	172 3964
30 x 40	10	179 7596

KODAK PROFESSIONAL DURATRANS Display Material

Rolls in. x ft	Sp	CAT No.
10 x 100	902	841 8675
11 x 100	902	846 1733
20 x 100	901	811 8325
24 x 100	901	823 5970
30 x 100	901	155 4625
40 x 100	901	803 9695
43 x 100	901	827 5927
50 x 100	901	812 7045
72 x 100	901	840 3859
74 x 100	901	840 9468

Spec 901: Unperforated, emulsion in, no leader or trailer, no edge markings

Spec 902: Unperforated, emulsion out, no leader or trailer

Sheets (inches)	No. of Sheets	CAT No.
8 x 10	10	831 2340
8 x 10	50	831 9220
11 x 14	10	832 5821
11 x 14	50	800 6041
16 x 20	10	822 5930
16 x 20	50	809 5911
20 x 24	10	801 3336
30 x 40	10	839 9032

KODAK PROFESSIONAL DURAFLEX Print Material

Rolls in. x ft	Sp	CAT No.
3½ x 500	917	804 3143
5 x 275	917	847 5204
8 x 275	917	826 4400
11 x 275	917	835 6586
30 x 100	901	161 5434
30 x 100	901	191 8986
36 x 100	901	199 4045
40 x 100	901	810 8870
50 x 100	901	844 0877

Spec 901: Unperforated, emulsion in, no leader or trailer, no edge markings

Spec 917: Unperforated, emulsion out, no leader or trailer

Sheets (inches)	No. of Sheets	CAT No.
8 x 10	50	821 5519
8½ x 11	50	826 5639
11 x 14	10	836 3525
16 x 20	10	169 4918
16 x 20	50	806 5013
20 x 24	10	812 8811
30 x 40	10	847 9222

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MORE INFORMATION

Kodak has many publications to assist you with information on Kodak products, equipment, and materials.

Additional information is available on the Kodak website and through the U.S.A./Canada faxback system.

The following publications are available from dealers who sell Kodak products, or you can contact Kodak in your country for more information.

- E-30 *Storage and Care of KODAK Photographic Materials—Before and After Processing*
- E-70 *Retouching Prints on KODAK EKTACOLOR and EKTACHROME Papers*
- J-39 *Tray, Drum, and Rotary-Tube Processing with KODAK EKTACOLOR RA Chemicals*
- K-4 *How Safe Is Your Safelight?*
- Z-130 *Using KODAK EKTACOLOR RA Chemicals*

For the latest version of technical support publications for KODAK PROFESSIONAL Products, visit Kodak on-line at: http://www.kodak.com/go/professional
Many technical support publications for KODAK PROFESSIONAL Products can be sent to your fax machine from the Kodak Information Center. Call: U.S. 1-800-242-2424, Ext. 33 / Canada 1-800-295-5531 —Available 24 hours a day, 7 days a week—
If you have questions about KODAK PROFESSIONAL Products, call Kodak. In the U.S.A.: 1-800-242-2424, Ext. 19, Monday–Friday 9 a.m.–7 p.m. (Eastern time) In Canada: 1-800-465-6325, Monday–Friday 8 a.m.–5 p.m. (Eastern time)

Note: The Kodak materials described in this publication for use with KODAK PROFESSIONAL Display and Print Materials are available from dealers who supply KODAK PROFESSIONAL Products. You can use other materials, but you may not obtain similar results.

Kodak Professional