E. I. du Pont de Nemours and Co., Inc.
Imaging Systems/Medical Products
Optical Element Venture
Experimental Station Laboratory, P. O. Box 80352
Wilmington, DE 19880-0352

April 10, 1992

high-speed, full-color holographic recording film
HRF-705X-20 (lot E72922-10-1, -2)

General information

The enclosed samples are not commercial products; they are being supplied to you under the research and development exemption provisions of the **Toxic Substances Control Act (TSCA)** as defined under Title 40 CFR 720.36 Exemption for Research And Development. One or more constituents of this material are not listed on the TSCA Chemical Substances Inventory. Under the provisions of TSCA, it is illegal to manufacture or process for commercial purposes any chemical substance which is not listed on the TSCA inventory. Consequently, your use of this material must be restricted to research and development activities or evaluation as defined in Part 720.36.

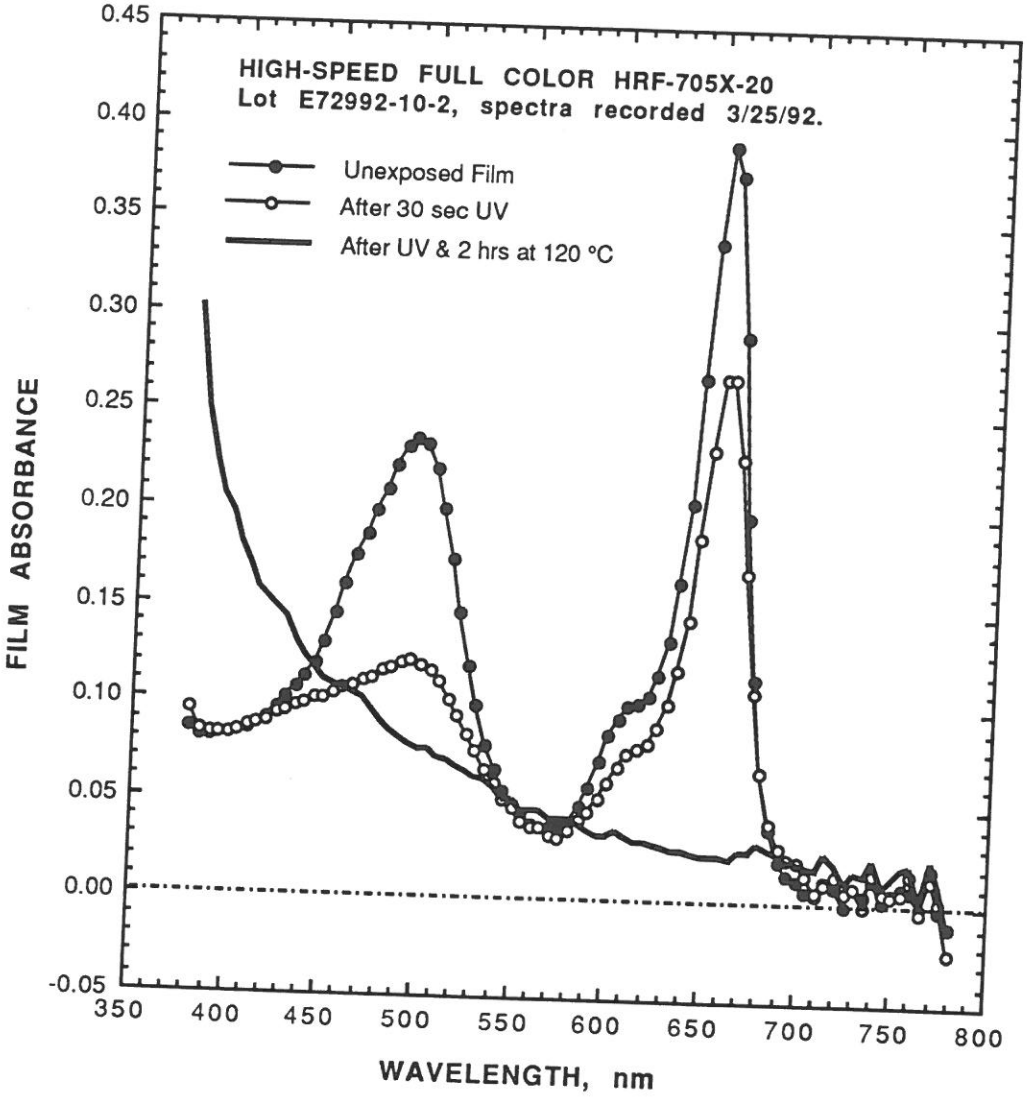
We strongly recommend using these materials promptly (within six months).

Use this film under very dim red safe lights. Be sure to test the film's sensitivity to your safe lights under your operating conditions. **Inadvertent exposure will degrade the film's holographic performance.**

UV-curing conditions: overall UV and/or visible light exposure of 50-100 mJ/cm^2.

Baking conditions (after UV-curing): 120 °C for 2 hours.

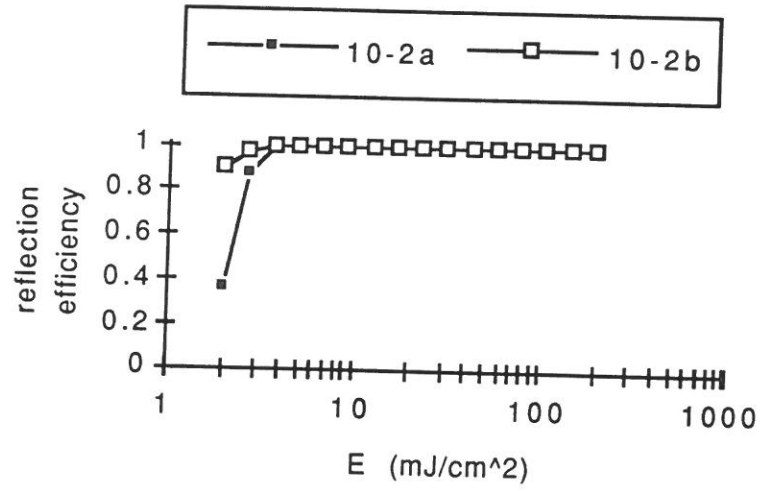
Absorption spectra

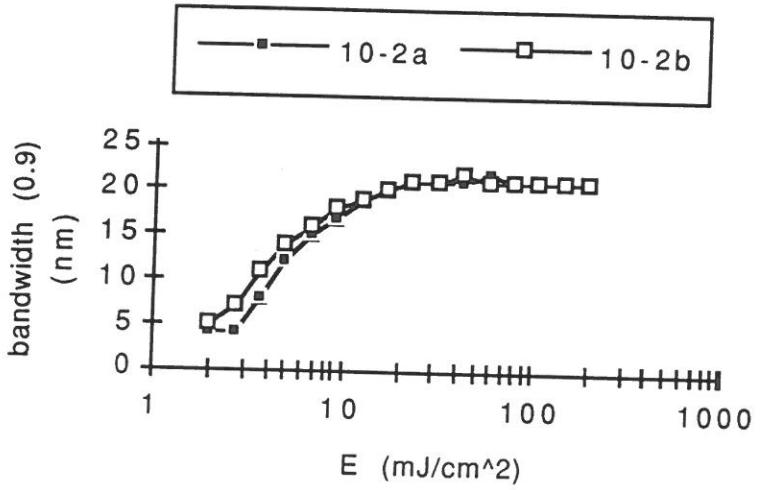


Test results at 514.5 nm for HRF-705X-20 (lot E72922-10-2)

sample	playback wavelength (nm)	optical density	bandwidth (0.9) (nm)	haze (%)
a	500.4 ± 0.3	5.00 ± 0.46	21.2 ± 0.4	1.06 ± 0.37
b	502.3 ± 2.6	5.07 ± 1.15	21.1 ± 0.4	1.05 ± 0.37

These are results from duplicate (a and b) simple-mirror holograms recorded at normal incidence at 514.5 nm with 10 mW/cm^2 and 20–200 mJ/cm^2. **Bandwidth is full width at 90 % of maximum reflection efficiency.** The results are presented as the mean ± one sample standard deviation (N = 8). The test date was March 25, 1992.





Test results at 647 nm for HRF-705X-20 (lot E72922-10-2)

sample	playback wavelength (nm)	optical density	bandwidth (0.9) (nm)	haze (%)
c	633.2 ± 1.1	3.24 ± 0.18	21.3 ± 0.5	1.07 ± 0.05
d	632.4 ± 0.6	3.18 ± 0.11	21.4 ± 0.5	0.88 ± 0.12

These are results from duplicate (c and d) simple-mirror holograms recorded at normal incidence at 647 nm with 10 mW/cm^2 and 30–200 mJ/cm^2. **Bandwidth is full width at 90 % of maximum reflection efficiency.** The results are presented as the mean ± one sample standard deviation (N = 8). The test date was March 27, 1992.