ERIC stands for **E**ffective **R**esidual **I**nk **C**oncentration and is a control parameter used to quantify the amount of residual ink left in recycled or de-inked pulp (DIP) and paper before and after de-inking and/or bleaching processes. Other parameters measured are brightness and dirt content.
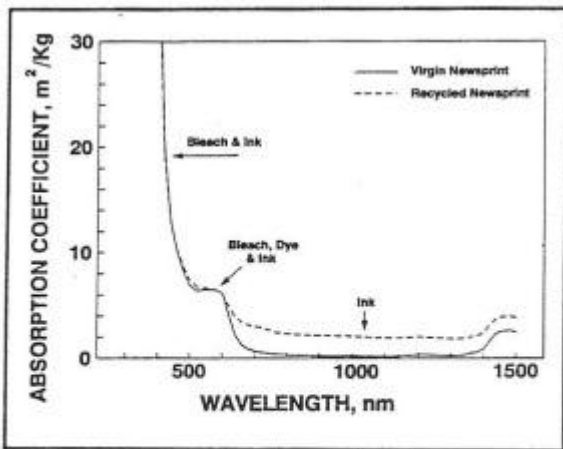

Fig. 10. The average absorption coefficient spectra corresponding to the reflectance curves in Fig. 9. The spectral ranges influenced by combinations of ink, dye, and bleaching levels are indicated.

Image Source: www.Technidyne.com

Absorption curve showing residual ink levels at NIR 800 to 1200 nm.

Based on joint research by PAPRICAN (Pulp And Paper Research Institute of Canada) and Technidyne Corporation, it was determined that there was a relationship between the ink and only the ink (not dyes or colorants, paper lignins, pulp yellowing or loss of brightness due to bleaching or process effects) and the reflectance in the 800 – 1200-nm infrared region of the spectrum. This unique correlation makes the ERIC value based on absorption at 950 nm ideal for verification of residual ink concentration for recycled paper.

The ERIC value is affected by the distribution of ink particle size with this metric being most effective for residual ink determination when the ink particles are submicron in size.

ERIC values in ppm = (Ink Absorption Coefficient * Absorption at 950-nm)

where the Ink Absorption Coefficient is based on analytical determination.

ERIC value is a dimensionless ratio of the light absorption coefficient of pulp or paper containing ink to the light absorption coefficient of the ink itself, both being determined at a wavelength of 950 nm. The User will need to calibrate the ERIC value to report in ppom with an added Ink Absorption Coefficient determined by the User.

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ISO 22754 Pulp and paper — Determination of the effective residual ink concentration (ERIC number) by infrared reflectance measurement

PAPTAC E.8 ERIC value for residual ink concentration