

*To be presented at the Society for Imaging Science and Technology (IS&T)
International Symposium on Technologies for Digital Photo Fulfillment (TDPF)
in Dresden, Germany on September 24, 2018:*

Title:

**An Overview of WIR Print Permanence Ratings for Color Print Materials
Used in Consumer and Professional Markets**

By Henry Wilhelm
Wilhelm Imaging Research, Inc.
Grinnell, Iowa U.S.A.
www.wilhelm-research.com

Abstract

This presentation gives an overview of the various factors affecting the display permanence and dark-storage stability of the many types of color prints commonly found in consumer and professional markets. The similarities and differences between Epson, Canon, and HP inkjet prints, made with dye-based inks, pigmented inks, traditional silver-halide (chromogenic) prints made with Kodak and Fuji color papers (including the new, improved-permanence Fujicolor Crystal Archive papers to be introduced by Fujifilm in late 2018), thermal-dye-transfer prints (often called “dye-sub” prints), ChromaLuxe dye-sublimation prints (often referred to as “metal prints”), and prints made with UV-curable pigment inkjet processes are discussed. WIR print permanence test methods are described for light stability, dark storage stability, ozone resistance, waterfastness, and humidity-fastness. The effects of ozone in polluted air is an especially important factor to consider in evaluating the permanence of dye-based inkjet prints made with “instant dry” microporous photo papers. In this study, both the Wilhelm Imaging Research “Display Permanence Ratings” and the WIR “Unprotected Ozone Resistance Ratings” were found to cover an extremely wide range – the most stable prints were rated to last more than 200 times longer than the least stable prints.

Biography

Henry Wilhelm is Director of Research at Wilhelm Imaging Research, Inc. in Grinnell, Iowa, USA. www.wilhelm-research.com Wilhelm has authored or co-authored more than 35 technical papers presented at conferences sponsored by the Society for Imaging Science and Technology (IS&T), the Imaging Society of Japan (ISJ), and the American Institute for Conservation (AIC) in the United States, Europe, Japan, China, Australia, Singapore, and other countries. Wilhelm is currently serving with Shigeo Suga of Suga Test Instruments Co. Ltd., Tokyo, Japan as Co-Project Leader for the development of the new ISO 18937-3 accelerated test methods standard for LED illumination sources.