

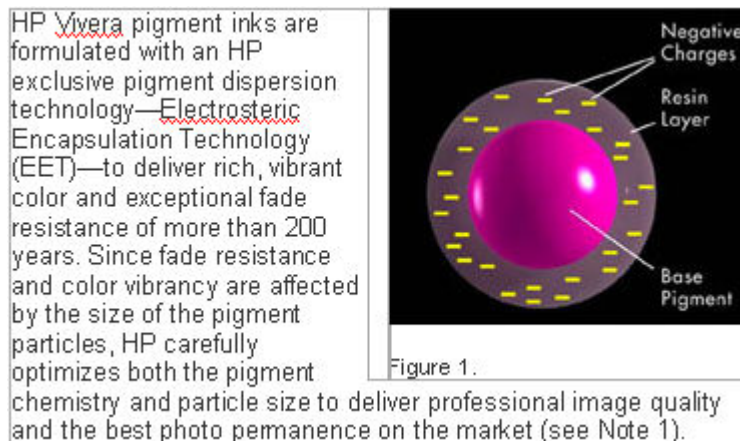
HP Vivera Notes
www.PaulRoark.com
4-09

HP, with its Vivera inks for the Z3100 24” and 44” printers, reputedly has the most neutral gray “quadtone” OEM pigments. They are, apparently, able to print a relatively neutral B&W without any addition of separate color inks. Note that this appears to be accomplished by means of blending color with carbon and is not the same as the 100% carbon inksets and workflows I’ve designed in pursuit of the “carbon on cotton” medium that I see as the best for fine art B&W digital printing.

See <http://www.paulroark.com/BW-Info/> How much carbon, as opposed to other substances, contributes to the density and tone of these pigments is an open question.

I’ve reproduced an HP patent at <http://www.paulroark.com/BW-Info/HPpat7452415.pdf> that may indicate some of the approaches used in the Vivera inkset to deal with the problem of differential fade when color pigments are blended with carbon.

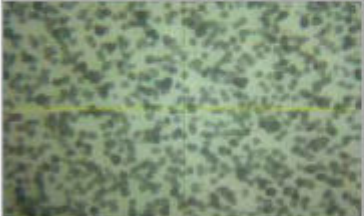
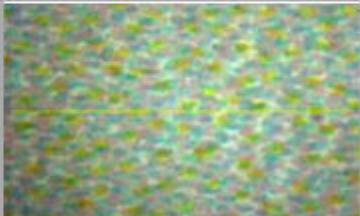
One interesting aspect of the HP pigments is the “electrosteric” stabilization technology that they are utilizing. See http://h10088.www1.hp.com/cda/gap/display/main/gap_content.jsp?zn=gap&cp=1-315-374-392%5E27752_4000_100



In practice I’ve found that the Vivera pigments are easily suspended in a generic base, such that custom dilutions of the ink are easy to make. See <http://www.paulroark.com/BW-Info/Eboni-6.pdf>

Neutral gray ink

HP's third-generation gray ink printing technology delivers true, neutral grays across a broad range of media for artistic black-and-white photos and fine art prints (see examples below).

	
<p>Figure 3. The HP Photosmart Pro B9180 uses HP Vivera gray ink to produce true, neutral grays.</p>	<p>Figure 4. Even competitive printers that use gray ink add composite inks, which produce less neutral grays.</p>

The HP Material Safety Data Sheets are on the web at

http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/pdf/ij_c9451a_us_eng_v1.pdf
(Vivera Z3100 Grey MSDS)

http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/pdf/ij_c9452a_us_eng_v1.pdf
(Light grey)

http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/pdf/ij_c9437a_us_eng_v1.pdf
(Z3100 Photo Black)

http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/pdf/ij_c9449a_us_eng_v1.pdf (Z3100 MK MSDS)

http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/pdf/ij_c9447a_us_eng_v1.pdf (Gloss enhancer)

See <http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/ijmsdsuseng.html> for other MSDSs.

Note that the matte black MSDS appears to be the same as the PK MSDS.

The MSDSs have a different set of chemicals in them than we usually see in the Epson compatible inks.

There is more water, for example, in the HP mix – the grey is 80% water. (It's a lower viscosity, thermal printer ink.)

There is less carbon in the HP mix. The photo black ink, for example, has less than 2.5% carbon black in it. (HP claims that part of their technology is carbon particles that are much blacker, but the color pigments probably are a major reason for the relatively low carbon content.)

"2-pyrrolidone" (<5%) (See <http://en.wikipedia.org/wiki/Pyrrolidone> – This is a high-boiling point, polar solvent.)

Diethylene glycol (<5%) (This is common in inks, but this is less than we see in Epson formulas. Propylene glycol is safer.)

Triethanolamine (<1%) (This may be used as a base pH balancer. Electrostatic stabilization is sensitive to pH. It may also act as one of the surfactants.)

Proprietary "alkyldiol" (<7.5%)
