



NEW YELLOW PIGMENT:

## NANOPTTEK YELLOW™

Available for license:

*Vivid yellow nitrogen-doped titania pigment that is stable in light and heat*

**Nanoptek Yellow™** is a new yellow titanium dioxide (titania) pigment. Yellow is achieved by doping titania with nitrogen using Nanoptek's patent-pending process. The process is scalable and compatible with current industry methods and equipment for producing Complex Inorganic Colored Pigments (CICPs).

Yellow pigments and dyes, of which there are dozens, are either diaryl-based, and so can release benzene in processing, or are based on heavy metals such as cadmium, antimony, lead, and chromium. We use only nitrogen to dope our titania so Nanoptek Yellow™ is a CICP. Like white titania it has high absorption in the ultraviolet for fade resistance. Further, it is over 90% reflective throughout its non-absorbing region and so is a "cool" pigment for reduced heat load and damage on surfaces. For colored ceramic processing, Nanoptek Yellow™ retains all of its vibrant yellow color even after exposure to 525°C for over 30 minutes.

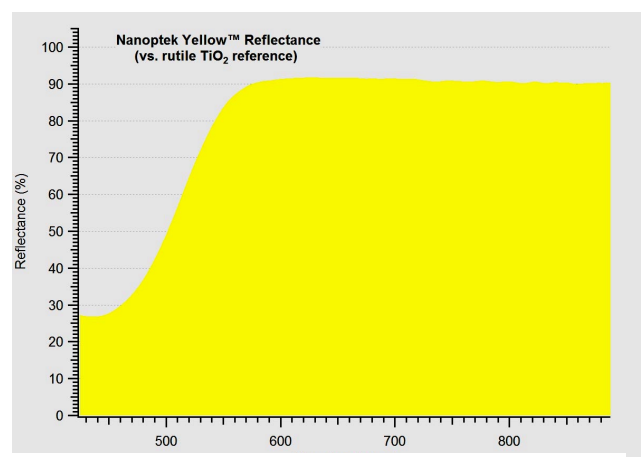


**Market Snapshot.** Market reports generally agree that the global pigment market will be \$45B in 2018. GIA for example projects \$24.5B by 2015. Another study for global dye and organic pigments together reports a \$13.4B market today growing at 4% CAGR and even faster for paints and inks. Yellow pigments and dyes together comprise about a fifth of the market, or as much as \$9B in 2018. Some of the major producers of colored pigments include Shepherd Colors, Ferro, Huntsman, Clariant, Heucotech, and others.

### Nanoptek Yellow™ Features:

- Pleasing vivid yellow color
- Low photocatalytic activity (binding ease)
- Color retention to 525°C @ over 30 minutes
- No heavy metals or diaryl in production
- High TSR (Total Solar Reflection)
- Tinting strength, coverage, dispersion, fade resistance, and other qualities are similar to white titania pigments

**Applications:** Paints (industrial, automotive, decorative), Plastic coloration, Ceramic coloration and coatings, Printing inks, Colorant for powder coatings



**For samples and to discuss licensing opportunities:**



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