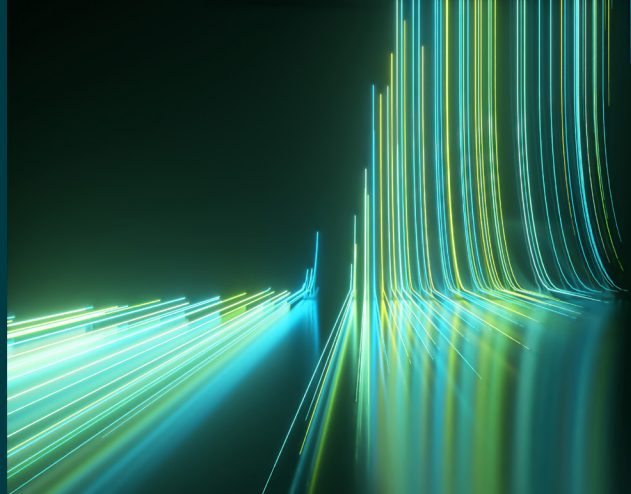


WILEY

Spectral Databases

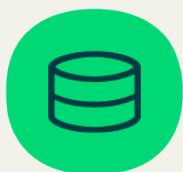
From the leader in spectral data



ATR-IR - Pigments & Dyes - Wiley

Spectra – 420

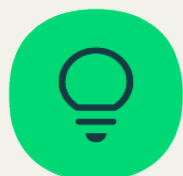
This database is only available as part of the KnowItAll IR Spectral Library subscription.



Description

Attenuated total reflectance-infrared (ATR-IR) spectroscopy is a versatile, non-destructive technique widely used in the analysis of artists' materials, enabling rapid identification with minimal sample preparation. Kremer pigments—known for their historical relevance and diverse mineral, organic, or synthetic compositions—each exhibit distinct IR absorption patterns that function as molecular fingerprints. An ATR-IR database of these pigments provides conservators, conservation scientists, and researchers with a reliable reference library for identifying unknown colorants, verifying material authenticity, and supporting informed decisions in conservation and restoration.

Beyond basic identification, ATR-IR spectroscopy aids in understanding pigment behavior and their interactions with binders and environmental conditions. Subtle spectral shifts can reveal processes such as hydration, oxidation, or binder-pigment reactions that influence long-term stability and appearance. This makes ATR-IR indispensable for monitoring degradation phenomena, studying historical formulations, and assessing compatibility of restoration materials. With its combination of speed, minimal invasiveness, and analytical depth, ATR-IR is a foundational tool for pigment characterization across research, practice, and material history studies.



Applications

- Art conservation
- Environmental and forensic analysis
- Degradation and alteration studies
- Forgery detection



Additional information

When it comes to spectral analysis, the more data you have the better. Wiley spectral databases provide much more information than simply the spectrum. Database records include the following valuable details when available:

- Pigment name
- Catalog number
- Manufacturer
- Chemical description
- Sample description
- Instrument name
- Accessory
- ATR crystal



Compound coverage

This database covers the Kremer catalog of pigments, including:

- Smalt
- Yellow ochre
- Pearl luster pigments
- Fluorescent pigments
- Quinacridone burnt orange
- Pyrrole red
- Cadmium green
- Orasol® pigments



Compatibility

- Subscription includes KnowItAll ID Expert software for one-click basic spectral searches
- Optional: KnowItAll Analytical Edition (recommended for advanced analysis)
- Import spectra from most IR instruments for direct comparison to reference spectra. For instrument compatibility, visit sciencesolutions.wiley.com/compatibility.



Trusted data from a trusted source

Wiley is the authoritative source for spectral data. Our renowned databases are processed according to rigorous protocols to ensure they are of the highest quality. Qualification procedures start at data acquisition and continue throughout the database development process. Any data acquired from trusted partners is thoroughly vetted before inclusion in our collections.