



Sc

Specialty Chemicals

F

PET/CTA Films

Pc

Printed Circuit Boards

Sc

Specialty Chemicals

Ct

Coating & Testing Services

Gr

Gravure Services

Sr

Solvent Recovery

Fp

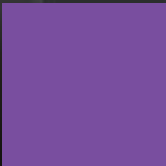
Functional Printing

Eb

Eastman Business Park

Your vision. Our experience. The perfect chemistry.

For more than a century, Kodak has been giving imagination an outlet by creating new ideas, then finding chemical processes to bring them to life. The ability to produce specialty chemicals that utilize complex processes has made Kodak one of the world's most respected and influential companies. With over 500 distinct molecules in production, more than 1,500 approved manufacturing processes, and experience with more than 100,000 complex chemicals, we empower progress every day. Let Kodak's Specialty Chemicals Group put our experience to work for your needs.



IR DYES
Kodak Specialty Chemicals



Great ideas mean little without the capacity to execute them

Working with Kodak allows you to draw on our expertise in process development, design for manufacturing, and statistical process control. In other words, we can take a process from the “white board” into production.

We're flexible enough to produce the smallest and largest batch sizes, which gives you flexibility of choice. And our broad product portfolio includes 1,500 approved manufacturing processes. Plus, confidential custom manufacturing services are available.



Great results give no advantage if they're not repeatable

A commitment to safety, health, the environment, high quality, and high technology are more than just our goals. They're part of our DNA. Kodak has designed and manufactured chemicals for over 100 years, a heritage we simply could not have built without a firm set of standards.

Our Six Sigma Black Belt focus on quality and decades of expertise with specialty chemicals development and manufacturing means Kodak knows how to get things right the first time, and get them right consistently, batch after batch.



Great companies are judged by the relationships they build

A relationship with Kodak is a collaboration with a U.S. manufacturer that has global capabilities. It's a relationship built on a century-long tradition of making the complex simpler. And it's built on trust.

That's why vibrant companies in industries ranging from medical imaging to personal care products, from agriculture to graphics and printing collaborate with Kodak's Specialty Chemicals Group. They understand the benefits of working with a U.S.-based company that has global capabilities. They enjoy our dedication to customer service. And they take comfort in a partnership that guides business forward.



“Kodak Specialty Chemicals has exceptional depth in both the development and synthesis of IR absorbing Dyes. They assisted my company with the development of a new product which utilized IR dyes for light to heat energy conversion. Their expertise helped us to quickly come up with a dye which was compatible in our product and delivered the required performance. Kodak worked with iimak in a very collaborative fashion, helping us through short term development needs as well as provided longer term settled down cost estimate's which enabled us to build a credible business case. At every step of the process, I found Kodak Specialty Chemicals to be very easy to work with and far more knowledgeable and experienced with IR dye technology than competitive suppliers in this industry.”

— Daniel J Harrison
Sr. VP R&D
IIMAK



IRD85 (Product Code 8246340)

High purity IR dye powder with high absorption between 800 and 850 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible light transmission. Soluble in most industrial solvents.

Chemical Class: Cyanine (Indole)

UV:

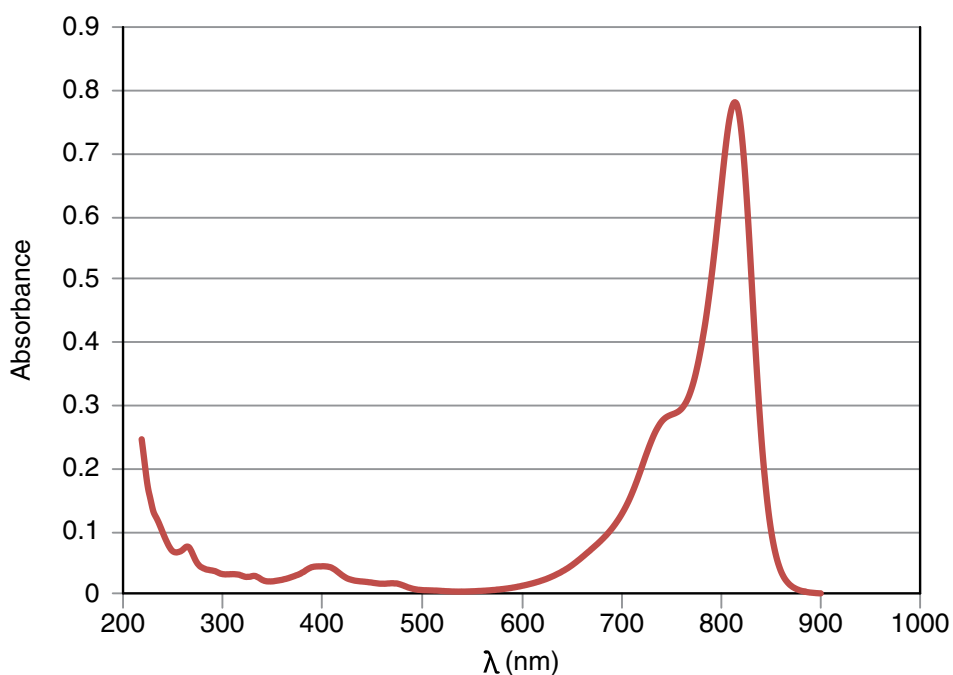
- λ max: 814 nm in methanol
- Absorptivity: 327 L/g cm

Properties:

- MW 755
- MP >173°C
- Decomposes without melting

Specifications:

- Assay by HPLC > 98.0 Area%
- Volatiles <2.0 wt%



*Sample concentration: 2.26 mg/L in methanol



IRD22 (Product Code 1692334)

High purity IR dye powder with absorption between 680 and 780 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible light transmission. Water soluble IR dye.

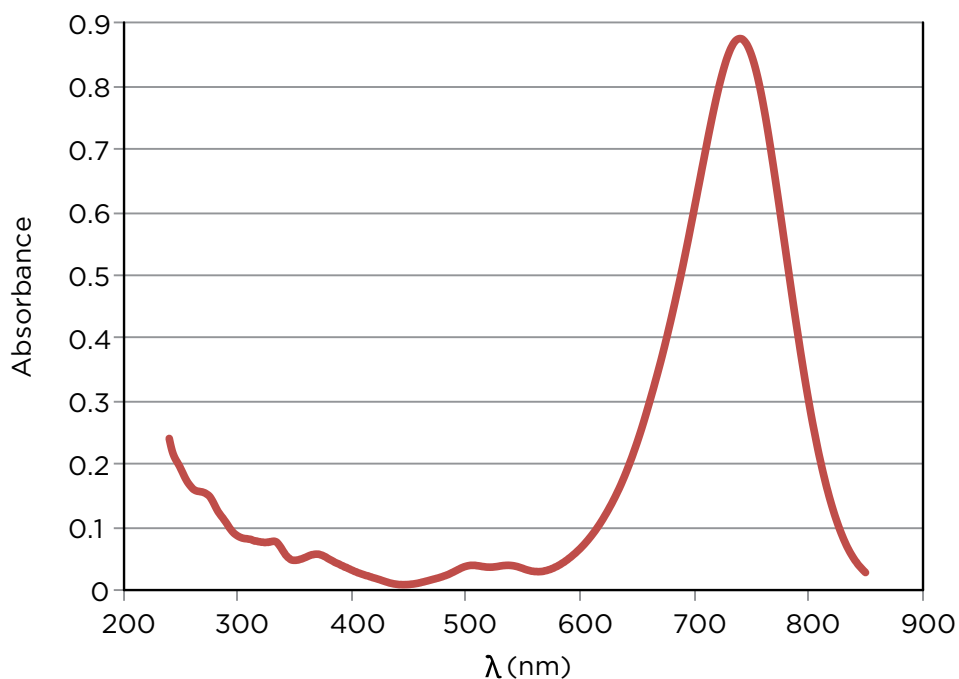
Chemical Class: Cyanine (Indole)

Properties:

- MW 1209
- MP 268°C

UV:

- λ max: 740 nm in methanol + acetic acid
- Absorptivity: 109 L/g cm



*Sample concentration: 8.04 mg/L in methanol + acetic acid



IRD05 (Product Code 1450790)

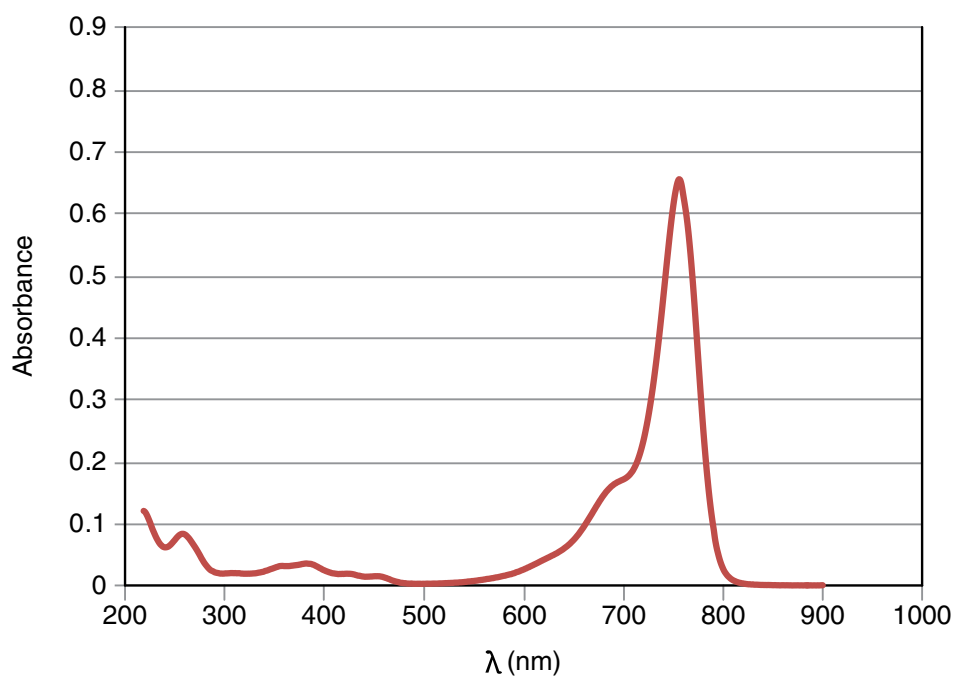
High purity IR dye powder with absorption between 730 and 777 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible light transmission. Soluble in most industrial solvents.

Chemical Class: Cyanine (Benzothiazole)

UV: • λ max: 756 nm in methanol

Properties: • MW 702

Specifications: • Absorptivity at Lambda max: 340 L/g cm



*Sample concentration: 1.80 mg/L in methanol



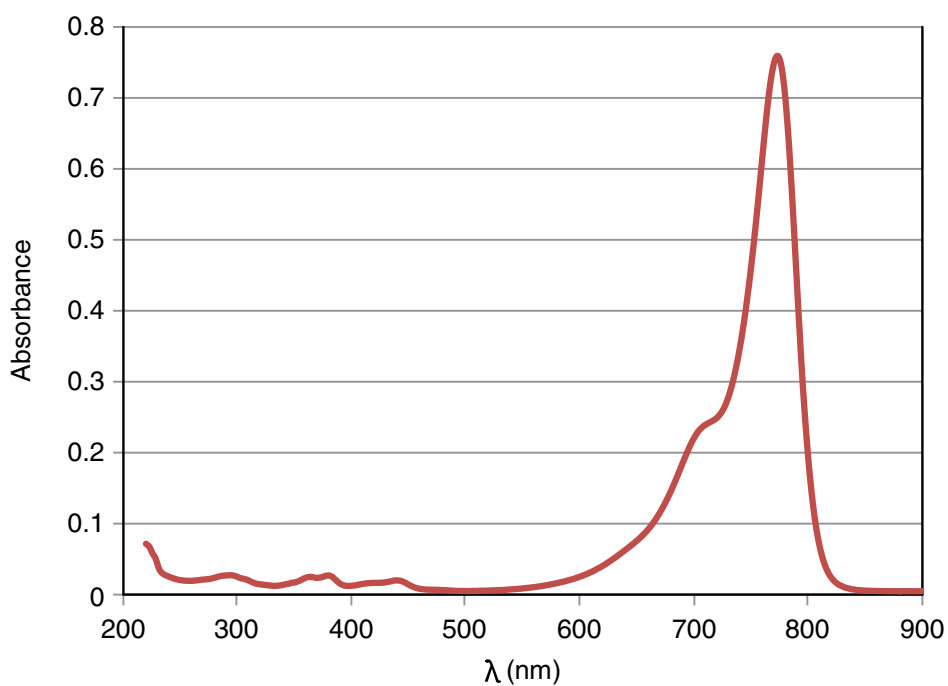
IRD67 (Product Code 1567718)

High purity IR dye powder with absorption between 745 and 794 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible and UV light transmission. Soluble in most industrial solvents.

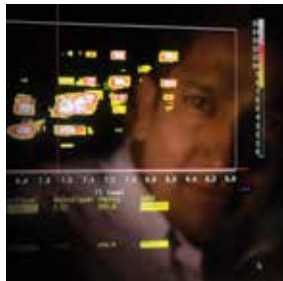
Chemical Class: Cyanine (Indole)

UV: • λ max: 775 nm in methanol
• Absorptivity: 420 L/g cm

Properties: • MW 655



*Sample concentration: 1.77 mg/L in methanol



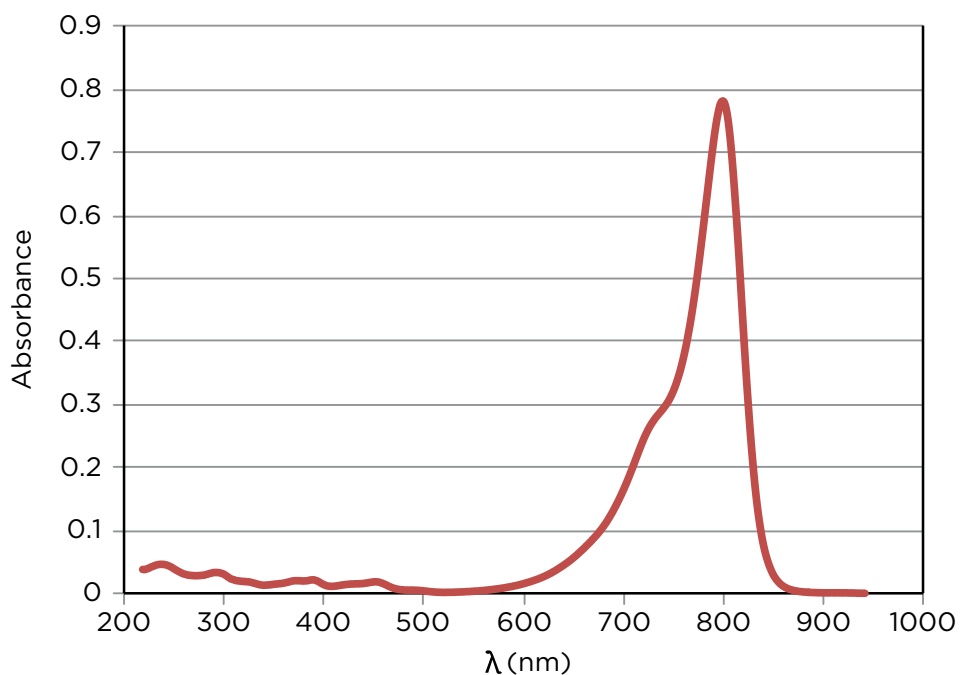
IRD57 (Product Code 1816347)

High purity IR dye powder with high absorption between 750 and 825 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible and UV light transmission. Soluble in most industrial solvents.

Chemical Class: Cyanine (Indole)

UV: • λ max: 799 nm in methanol
• Absorptivity: 358 L/g cm

Properties: • MW 661
• MP 350°C estimated



*Sample concentration: 2.17 mg/L in methanol



IRD31 (Product Code 1962000)

High purity IR dye powder with high absorption between 750 and 835 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible light transmission. Soluble in most industrial solvents.

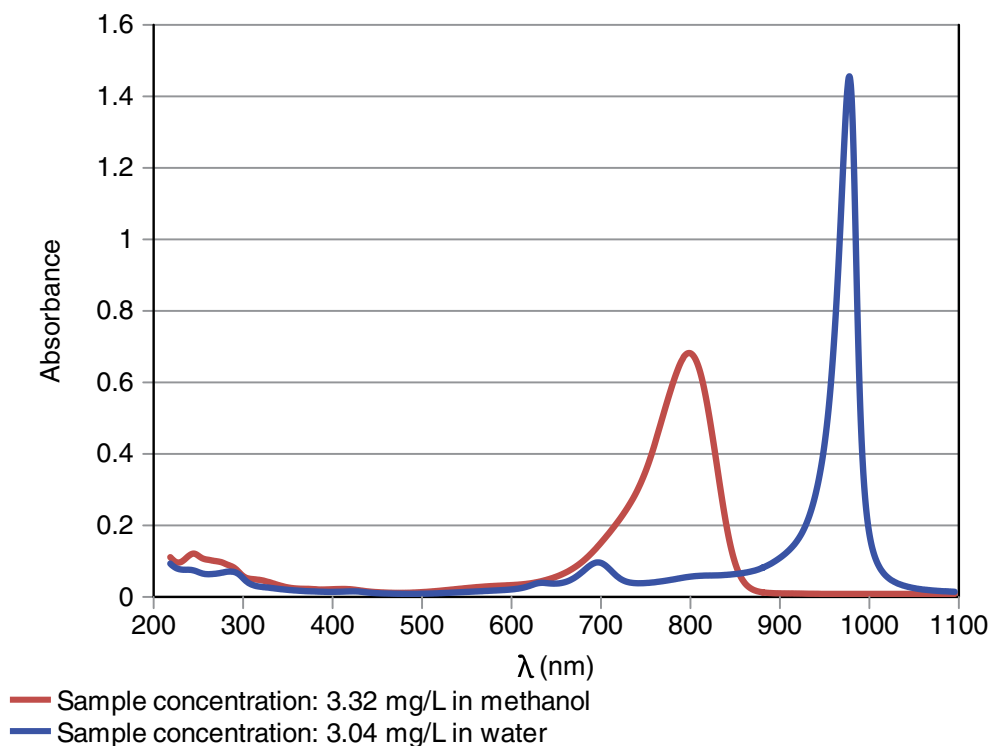
Designed to form an aggregate in an aqueous mixture which shifts the absorption to a deeper wavelength.

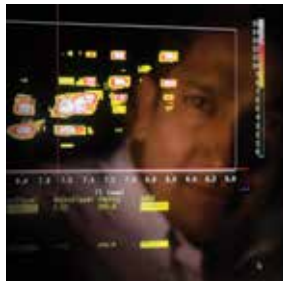
Chemical Class: Cyanine (Benzothiazole)

Properties: • MW 1015

UV:

- λ max: 802 nm in methanol
- Absorptivity: 180 L/g cm
- λ max: 982 nm in water
- Absorptivity: 477 L/g cm





IRD75 (Product Code 1921014)

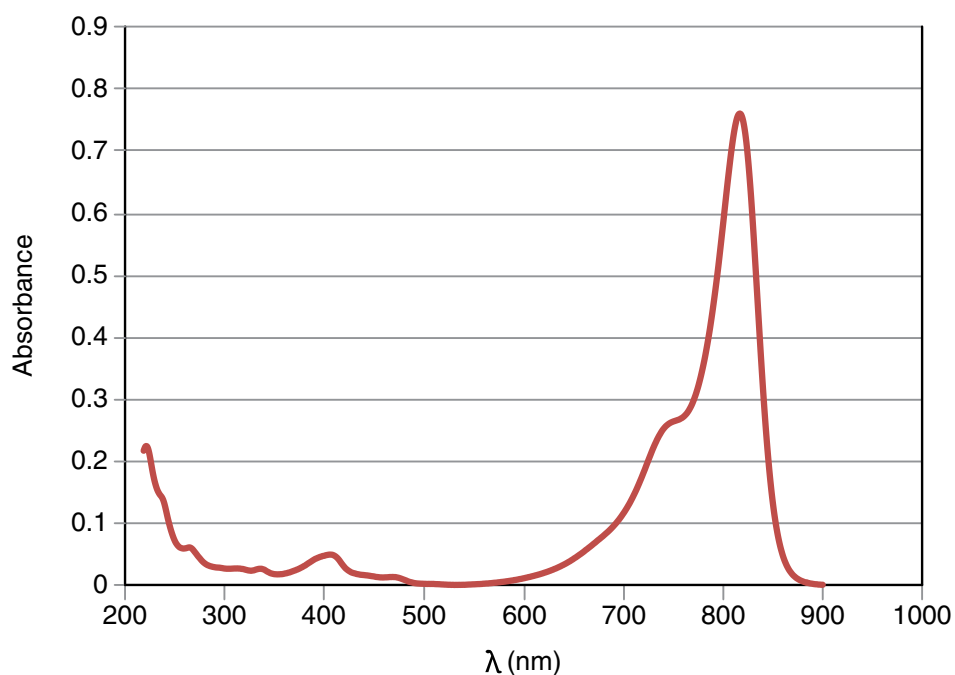
High purity IR dye powder with high absorption between 800 and 850 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible light transmission. Soluble in most industrial solvents.

Chemical Class: Cyanine (Indole)

UV: • λ max: 817 nm in methanol
• Absorptivity: 297 L/g cm

Properties: • MW 928

Specifications: • Potency by
UV/Vis > 96.0 Wt%



*Sample concentration: 2.56 mg/L in methanol



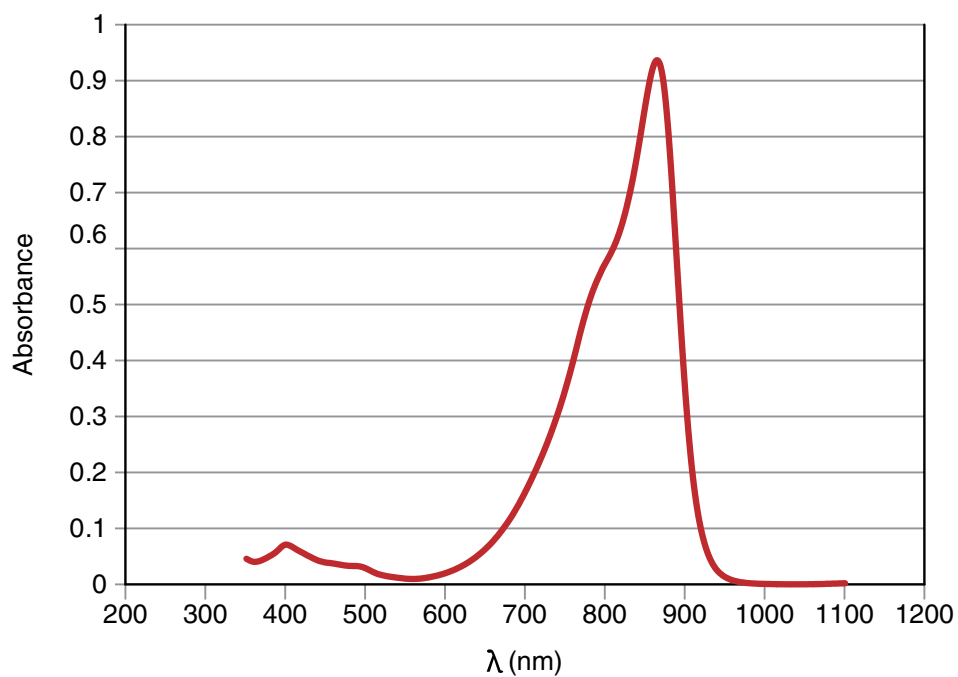
IRD04 (Product Code 1171859)

R&D high purity IR dye powder with high absorption between 770 and 895 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible light transmission. Soluble in most industrial solvents.

Chemical Class: Cyanine (Indole)

UV: • λ max: 864 nm in acetone
• Absorptivity: 194 L/g cm

Properties: • MW 799



*Sample concentration: 4.81mg/L in Acetone



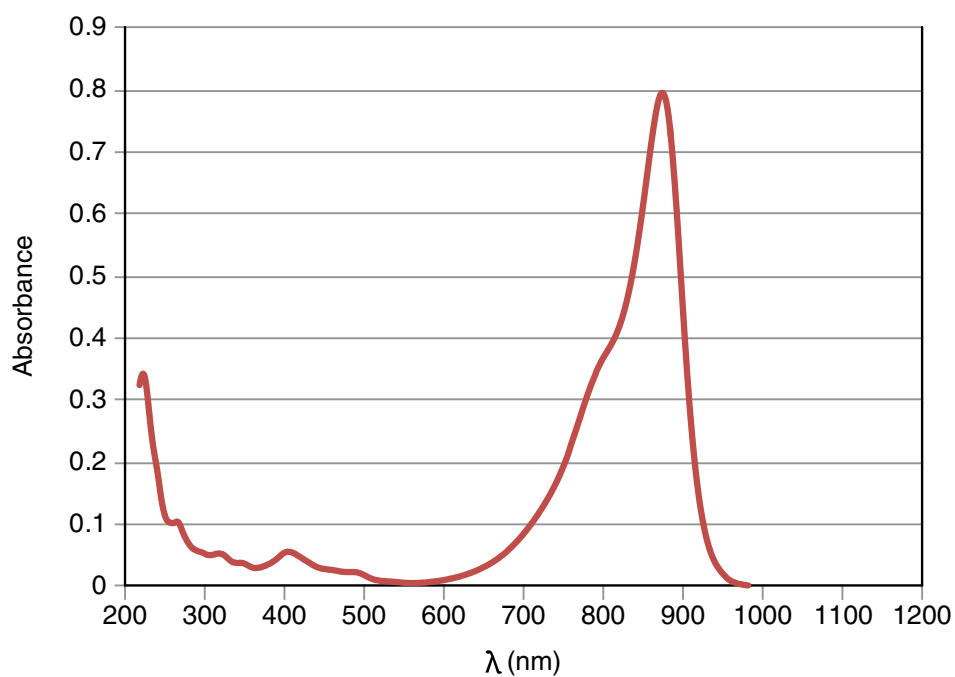
IRD79 (Product Code 1504737)

High purity IR dye powder with absorption between 815 and 900 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible light transmission. Water soluble IR dye.

Chemical Class: Cyanine (Indole)

UV: • λ max: 875 nm in methanol
• Absorptivity: 178 L/g cm

Properties: • MW 1097



*Sample concentration: 4.48 mg/L in methanol



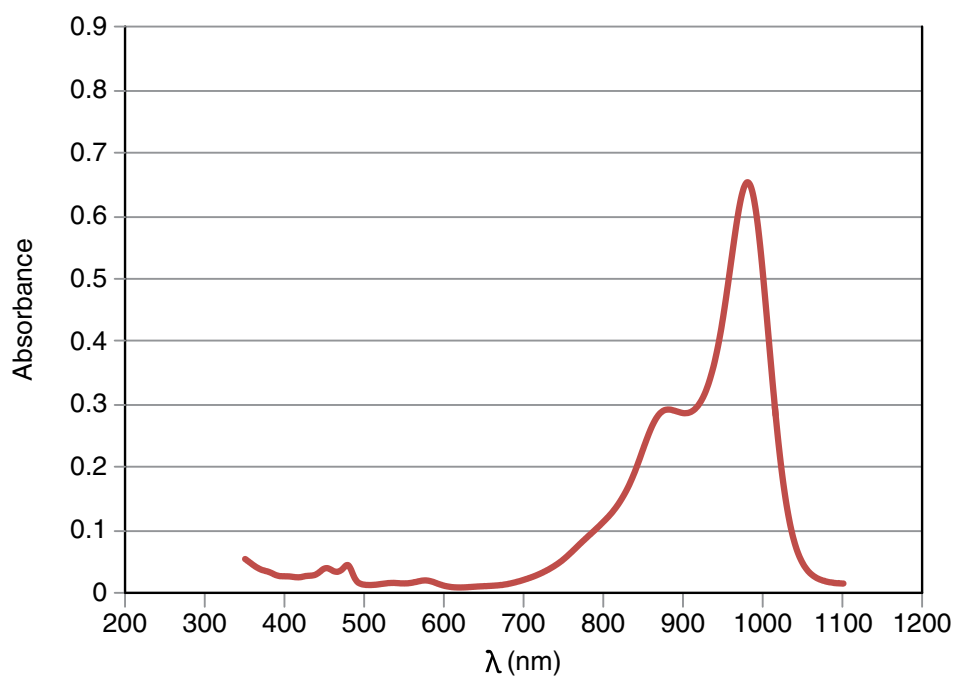
IRD73 (Product Code 1242262)

High purity IR dye powder with high absorption between 900 and 1000 nm. Suitable for coating applications requiring absorption of deeper IR radiation. Excellent visible light transmission. Soluble in most industrial solvents.

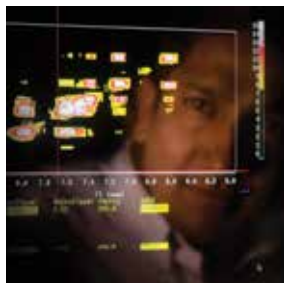
Chemical Class: • Cyanine (Indole)

UV: • λ max: 980 nm in acetone
• Absorptivity: 311 L/g cm

Properties: • MW 654



*Sample concentration: 2.10 mg/L in acetone



IRD50 (Product Code 1467992)

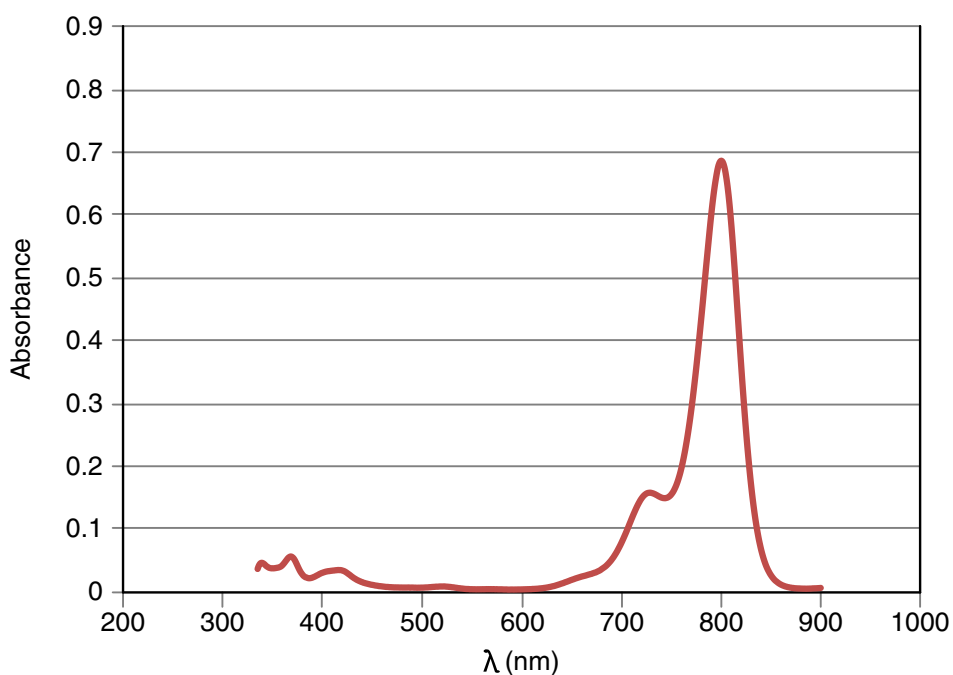
High purity IR dye powder with absorption between 775 and 820 nm. Suitable for coating applications requiring absorption of IR radiation. Excellent visible light transmission. Stable in solvent coatings. Soluble in most industrial solvents.

Chemical Class: Squarylium

UV: • λ max: 800 nm in methyl ethyl ketone

Properties: • MW 931

Specifications: • Absorptivity at Lambda max: 170 L/g cm



*Sample concentration: 3.84 mg/L in methyl ethyl ketone



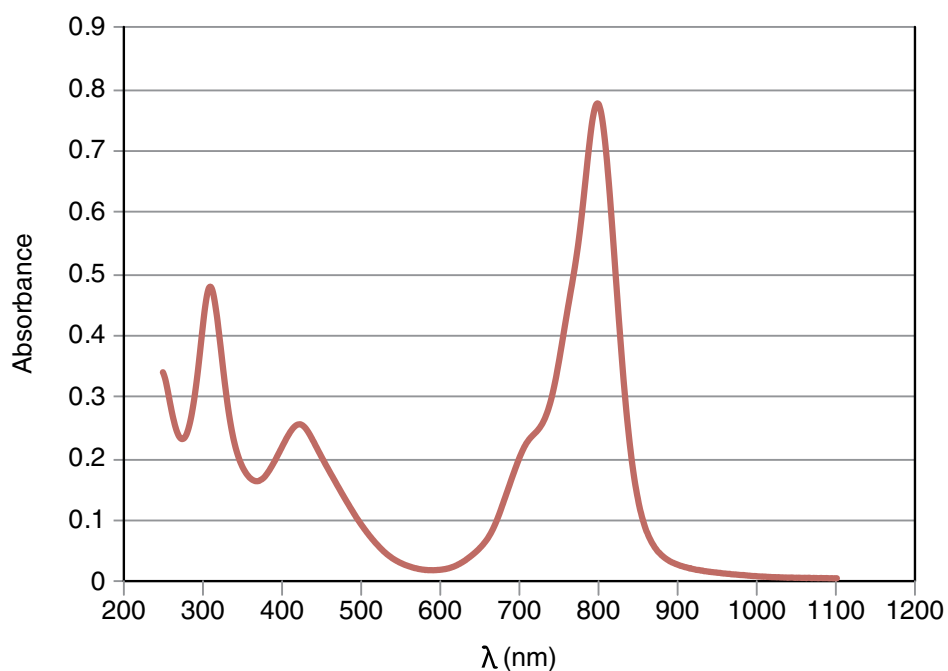
IRD031 (Product Code 1925932)

High purity IR pigment powder with absorption between 750 and 830 nm. Suitable for coating applications requiring absorption of IR radiation. Also exhibits UV absorption. Resistant to light fade.

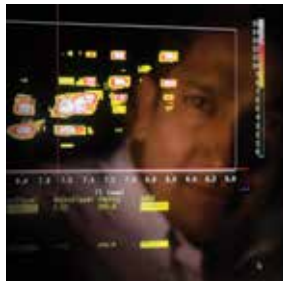
Chemical Class: Phthalocyanine

Properties: • MW 648

UV: • λ max: 798 nm in concentrated sulfuric acid
• Absorptivity: 131 L/g cm



*Sample concentration: 5.91 mg/L in sulfuric acid



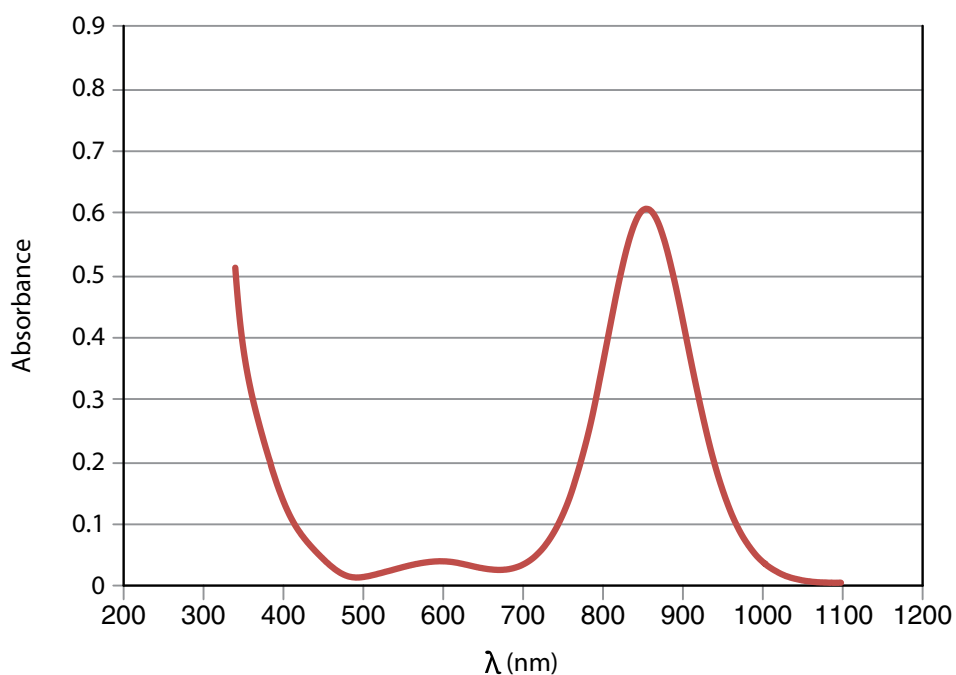
IRD24 (Product Code 1621598)

R&D IR dye powder with absorption between 795 and 920 nm. Suitable for coating applications requiring absorption of deeper IR radiation. Also exhibits UV absorption. Can be combined with other IR dyes to improve light stability.

Chemical Class: Dithiolene

UV: • λ max: 855 nm in methylene chloride
• Absorptivity: 55 L/g cm

Properties: • MW 543



*Sample concentration: 11.0 mg/L in methylene chloride



IRD86 (Product Code 1891399)

High purity IR dye powder with absorption between 900 and 1100 nm. Suitable for coating applications requiring absorption of deeper IR radiation. Also exhibits UV absorption. Excellent visible light transmission. Soluble in acetone, methyl ethyl ketone and methylene chloride.

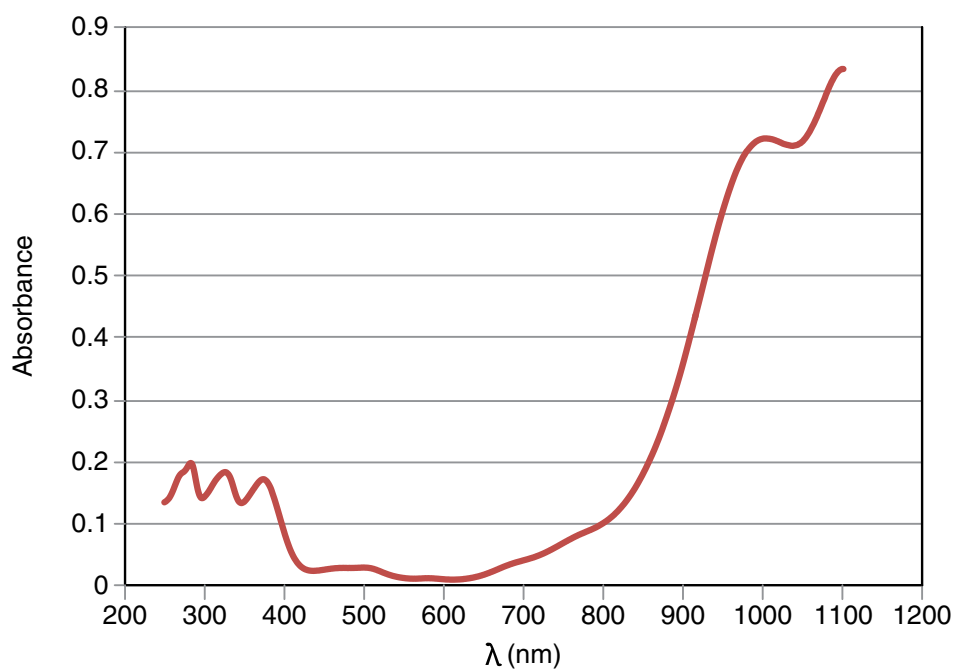
Chemical Class: Diiminium

Properties:

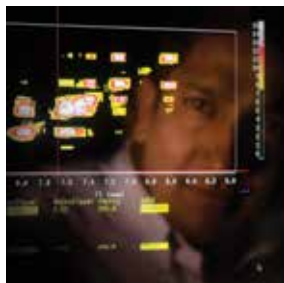
- MW 1392
- MP > 265 °C

UV:

- λ max: 1098 nm in methylene chloride
- Absorptivity: 70 L/g cm



*Sample concentration: 10.64 mg/L in methylene chloride



DIRP807 (Product Code 1556026)

R&D Nano particulate. 10% aqueous dispersion of highly stable IR chromophore. Stabilized with a proprietary dispersant (25% relative to the IR chromophore). Suitable for coating or inkjet applications requiring absorption of IR radiation.

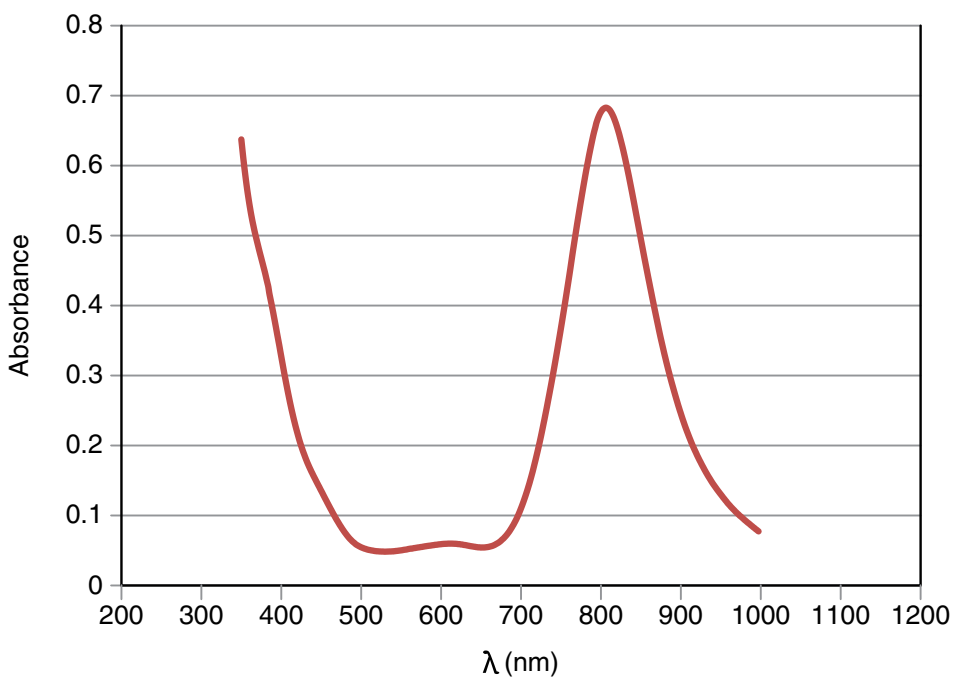
Properties:

- Aqueous dispersion
- 10% chromophore concentration
- $D_{50} = 10 \text{ nm}^\dagger$

UV:

- $\lambda \text{ max: } 828 \text{ nm}$ in distilled, deionized H_2O
- Absorptivity: 4.3 L/g cm

[†] As determined by Dynamic Light Scattering



*Sample concentration: 194.232 mg/L in Distilled, Deionized H_2O



DIRP843 (Product Code 1406032)

R&D Nano particulate. 10% aqueous dispersion of stable IR chromophore. Stabilized with a proprietary dispersant (25% relative to the IR chromophore). Suitable for coating or inkjet applications requiring absorption of IR radiation.

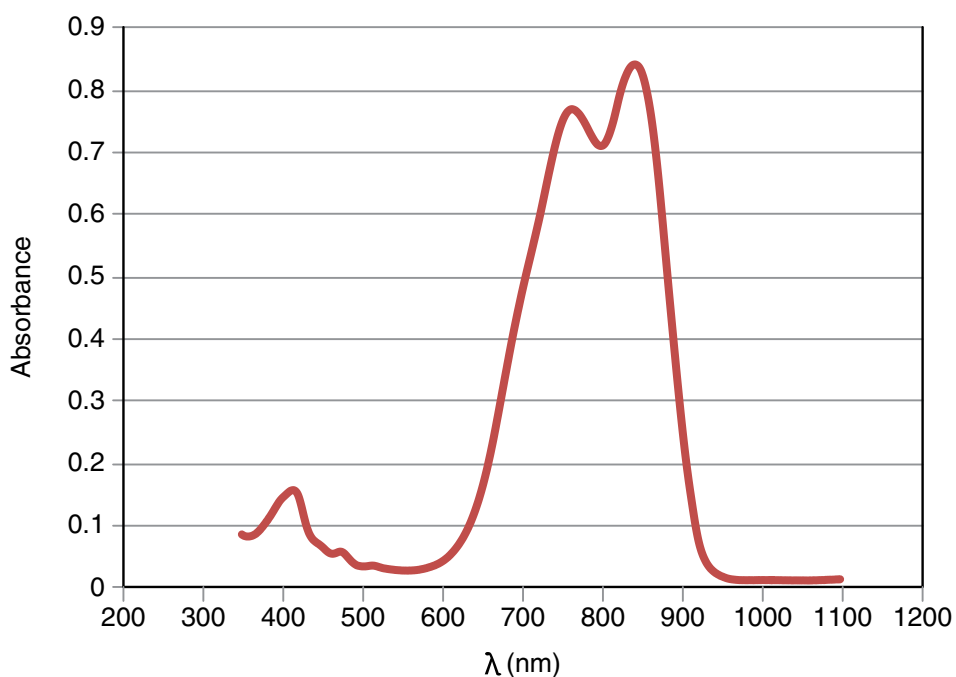
Properties:

- Aqueous dispersion
- 10% chromophore concentration
- $D_{50} = 10 \text{ nm}^\dagger$

UV:

- $\lambda \text{ max1}$: 843 nm in distilled, deionized H_2O
- Absorptivity: 10.10 L/g cm
- $\lambda \text{ max2}$: 764 nm in distilled, deionized H_2O
- Absorptivity: 9.23 L/g cm

[†] As determined by Dynamic Light Scattering



*Sample concentration: 83.396 mg/L in Distilled, Deionized H_2O

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