

Perovskite CsPbX₃ Quantum Dots

Technical Data Sheet

QD-P-450	CsPb(Cl/Br) ₃ Perovskite quantum dots, 10 mg/mL in hexane, 450nm peak emission.
QD-P-480	CsPb(Cl/Br) ₃ Perovskite quantum dots, 10 mg/mL in toluene, 480nm peak emission.
QD-P-510	CsPbBr ₃ Perovskite quantum dots, 10 mg/mL in toluene, 510nm peak emission.
QD-P-520	MAPbBr ₃ Perovskite quantum dots, 10 mg/mL in toluene, 520nm peak emission.
QD-P-530	FAPbBr ₃ Perovskite quantum dots, 10 mg/mL in toluene, 530nm peak emission.
QD-P-650	CsPb(Br/I) ₃ Perovskite quantum dots, 10 mg/mL in octane, 650nm peak emission.
QD-P-680	CsPbI ₃ Perovskite quantum dots, 10 mg/mL in octane, 680nm peak emission.

Perovskite QDs are a new type of quantum dots that have been discovered recently and have the common formula APbX₃ where A is Cs, MA (methylammonium) or FA (formamidinium) and X is Cl, Br or I. They possess high photoluminescence efficiency and narrow emission, and exhibit chemical robustness. QUANTUM SOLUTIONS is an expert in synthesis of Perovskite Quantum Dots. We produce highly uniform quantum dots with precise control of emission peaks, narrow fluorescence bands and high quantum yields. Quality control is provided by the modern equipment: UV-vis-IR spectrometer, a fluorescence spectrometer with broadband and integrating sphere capability, Transmission electron spectroscopy and Diffractometer.

Application fields

Perovskite QDs emit light in the entire visible spectral region from 450 to 680 nm depending on particle sizes and compositions. The compelling combination of enhanced optical properties and chemical robustness makes Perovskite QDs appealing for optoelectronic applications. These cadmium free QDs with low lead content can be used in QD LEDs, QD lasers, QD backlight for LCD and lighting etc.

Features

- Cadmium free, high efficient quantum dots for lighting and display applications. Low lead content.
- Wide products range from 450 to 680 nm of emission peaks for various applications.



- Bright color, narrow fluorescence bands (FWHM) and high photoluminescence quantum yields (PLQY).

Specification

Catalog Number	QD-P-450	QD-P-480	QD-P-510	QD-P-520	QD-P-530	QD-P-650	QD-P-680
Type	CsPb(Cl/Br) ₃	CsPb(Cl/Br) ₃	CsPbBr ₃	MAPbBr ₃	FAPbBr ₃	CsPb(Br/I) ₃	CsPbI ₃
Capping ligand	Oleic acid Oleylamine	Oleic acid Oleylamine	Oleic acid Oleylamine	Oleic acid Oleylamine	Oleic acid Oleylamine	Oleic acid Oleylamine	Oleic acid Oleylamine
Solvent	Hexane	Toluene	Toluene	Toluene	Toluene	Octane	Octane
Concentration	10 mg/mL	10 mg/mL	10 mg/mL	10 mg/mL	10 mg/mL	10 mg/mL	10 mg/mL
Appearance	Colorless Liquid	Light green Liquid	Green liquid	Green liquid	Green Liquid	Red liquid	Deep red liquid
Emission peak	450 ± 5 nm Royal Blue	480 ± 5 nm Blue	510 ± 5 nm Pale green	520 ± 5 nm Green	530 ± 5 nm Green	650 ± 5 nm Red	680 ± 5 nm Deep red
FWHM	< 25 nm	< 25 nm	< 25 nm	< 25 nm	< 30 nm	< 45 nm	< 45 nm
PLQY	> 10%	> 50 %	> 70 %	> 80 %	> 70%	> 50%	> 50 %

Photo under UV light



Customized products

Perovskite Quantum Dots with different solvents, concentrations, emission peaks are available upon request.

Notes for handling

- Due to halide exchange, don't mix different perovskite QDs together!
- Products are soluble in nonpolar solvents: toluene, hexane, octane, benzene and others
- Products are tested to be compatible with following polymers: PMMA, PP and PS. For more information please contact info@quantum-solutions.com
- Products are degrade in polar solvents: water, alcohols, DMSO, DMF and others
- Shelf Life for QD-P-450, 480, 510, 520 and 530 – 1 year. Suggest to use within 6 months of purchase. Shelf Life for QD-P-650 and 680 – 6 month. Suggest to use within 1-2 months of purchase. Store temperature 2-25 °C. Do not freeze. Store in DARK and DRY place, in sealed packaging or in a glovebox under N₂. Avoid contacts with air.

Packing

Glass vials of 10-30 ml.



QUANTUM SOLUTIONS

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