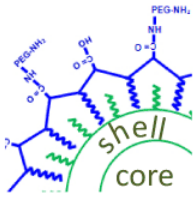
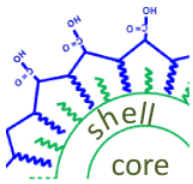
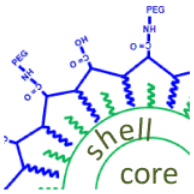
CdS, CdSe, CdSSe Solid Quantum Dots

METALS • INORGANICS • ORGANOMETALLICS • CATALYSTS • LIGANDS • NANOMATERIALS • CUSTOM SYNTHESIS • cGMP FACILITIES

Catalog #	Catalog Size	**CdSe/ZnS** quantum dots in solid form FWHM <35nm, QY >50% *	**CdSe/ZnS** core shell quantum dots with Amine in water FWHM <25nm, QY >50% +	**CdSe/ZnS** core shell quantum dots with carboxylic acid in water FWHM <25nm, QY >50% •	**CdSe/ZnS** core shell quantum dots with PEG in water FWHM <25nm, QY >50% ¤	**CdSSe/ZnS** quantum dots in solid form FWHM <35nm, QY >50% #	**CdSSe/ZnS** core/shell quantum dots with amine in water FWHM <35nm, QY >50% +	**CdSSe/ZnS** core/shell quantum dots with carboxylic acid in water FWHM < 35nm, QY >50% •	**CdSSe/ZnS** core/shell quantum dots with PEG in water FWHM <35nm, QY >50% ¤	**CdS/ZnS** quantum dots in solid form FWHM <35nm, QY >50% **	**CdS/ZnS** core/shell quantum dots with amine in water FWHM <35nm, QY >50% +	**CdS/ZnS** core/shell quantum dots with carboxylic acid in water FWHM <35nm, QY >50% •	**CdS/ZnS** core/shell quantum dots with PEG in water FWHM <35nm, QY >50% ¤	Emission peak
48-1618	10mg 50mg	X												520nm
48-1620	10mg 50mg	X												560nm
48-1622	10mg 50mg	X												600nm
48-1624	10mg 50mg													630nm
48-1666	2nmole 10nmole		X											580nm
48-1668	2nmole 10nmole		X											620nm
48-1638	4nmole 20nmole			X										580nm
48-1640	4nmole 20nmole			X										620nm
48-1652	2nmole 10nmole				X									580nm
48-1654	2nmole 10nmole				X									620nm
48-1664	2nmole 10nmole						X							525nm
48-1670	2nmole 10nmole						X							665nm
48-1636	4nmole 20nmole							X						525nm
48-1642	4nmole 20nmole							X						665nm
48-1650	2nmole 10nmole								X					525nm
48-1656	2nmole 10nmole								X					665nm
48-1606	10mg 50mg					X								540nm
48-1608	10mg 50mg					X								600nm
48-1610	10mg 50mg					X								630nm
48-1612	10mg 50mg					X								665nm
48-1614	10mg 50mg									X				400nm
48-1616	10mg 50mg									X				420nm
48-1658	2nmole 10nmole										X			400nm
48-1630	4nmole 20nmole											X		400nm
48-1644	2nmole 10nmole												X	400nm

				
48-1618, 48-1620, 48-1622, 48-1624, 48-1614, 48-1616	48-1666, 48-1668, 48-1664, 48-1670, 48-1658	48-1638, 48-1640, 48-1636, 48-1642, 48-1630	48-1652, 48-1654, 48-1650, 48-1656, 48-1644	48-1606, 48-1608, 48-1610, 48-1612

Technical Notes:

* Group of highly purified CdS/Zns or CdSe/ZnS quantum dots in solid form. The surface ligand is octadecylamine. The quantum dots can be dispersed in most organic solvents such as toluene, chloroform, and hexane. These quantum dots are specifically designed as emitters for optoelectronic applications such as LEDs.

References:

1. *The Journal of Physical Chemistry C*, **2009**, *113*, 1886.
2. *ACS Nano,* **2009**, *3*, 737.
3. *Journal of Applied Physics*, **2009**, *105*, 034312.
4. *IEEE Photonics Technology Letters*, **2008**, *20*, 1998.
5. *Optical Letters*, **2008**, *33*, 2437.
6. *Applied Physics Letters*, **2008**, *92*, 023111.
7. *Journal of Experiment NanoScience*, **2007**, *2*, 13.
8. *Nanotechnology*, **2007**, *18*, 025403.
9. *Applied Physics Letters*, **2007,** *91*, 023102.
10. *Nature Photonics,* **2007**, *1*, 717.
11. *Nano Letters*, **2007**, *7*, 3803.

\+ A water-soluble CdS/ZnS or CdSSe/ZnS core/shell quantum dots with amphiphilic polymer and PEG coating. Reactive group is an amine.
Properties include:

1. Zeta potential of QSA is from -20mV to +10 mV.
2. Organic layers consist of a monolayer of oleic acid/octadecylamine, a monolayer of amphiphilic polymer, and a monolayer of PEG.
3. Total thickness of organic layers is ~6 nm.
4. The hydrodynamic size of the QDs is about 12-14 nm larger than their inorganic core size as measured by TEM.
5. QSA is very stable in most buffer solutions in the pH range of 5-10, and can survive autoclaving processes of 121°C for 30 mins.
6. Amine density is low due to the long PEG chain.

Reference:

1. *Small*, **2009**, *5*, 235.

• A water-soluble CdSSe/ZnS or CdSe/ZnS quantum dots with amphiphilic polymer and PEG coating. Reactive group is a carboxylic acid.

1. Zeta potential of QSA is from -30mV to -50 mV.
2. Organic layers consist of a monolayer of oleic acid/octadecylamine and a monolayer of amphiphilic polymer.
3. Total thickness of organic layers is ~4 nm.
4. The hydrodynamic size of the QDs is about 8-10 nm larger than their inorganic core size as measured by TEM.
5. QSH is very stable in most buffer solutions in the pH range of 5-10, and can survive autoclaving processes of 121°C for 30 mins.

Reference:

1. *Small*, **2009**, *5*, 235.

** Group of highly purified CdSSe/ZnS quantum dots in solid form. The surface ligand is oleic acid. The quantum dots can be dispersed in most organic solvents such as toluene, chloroform, and hexane. These quantum dots are specifically designed as emitters for optoelectronic applications such as LEDs.

¤ A water-soluble alloy CdSSe/ZnS or CdSe/ZnS core/shell quantum dots with amphiphilic polymer. Their reactive group is a carboxylic acid.

1. Zeta potential of QSA is from -30mV to -50 mV.
2. Total thickness of organic layers is ~4 nm.
3. The organic layers consist of a monolayer of oleic acid/octadeylamine and s monolayer of amphiphilic polymer.
4. The hydrodynamic size of the quantum dots is about 8-10 nm larger than their inorganic core size as measured by TEM.
5. The product is stable in most buffer solutions in the pH range of 5-10.