
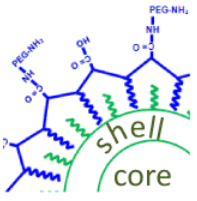
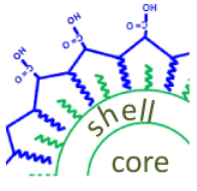
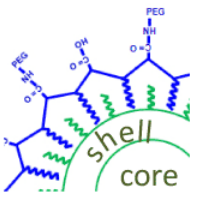



METALS • INORGANICS • ORGANOMETALLICS • CATALYSTS • LIGANDS • NANOMATERIALS • CUSTOM SYNTHESIS • cGMP FACILITIES

| 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 |

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

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/octadecylamine and a 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.