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# General handling and storage of quantum dots

**This applies to the following organic soluble quantum dots (QDs) with product catalog numbers:**

QSP – CdSe/ZnS core/shell QD
QPP – CdSSe/ZnS core/shell QD
QCO – CdSe core QD
QPT- CdSe core QD in solid form with TOPO coating

**And water soluble CdSe core QD with product catalog number:**

QCH – CdSe core QD with MPA coating

## 1. Storage

QSP, QPP can be stored at 4-25°C for at least 12 months. QCO, QPT and QCH can be stored at 4-25°C for 6 months

## 2. Determination of QD concentration

The concentration of QD can be determined spectrophotometrically. Scan QD solution to locate the maximum absorption peak which is normally 10-15 nm lower than the emission wavelength.

Follow the equation:

QD concentration (mg/mL)=($OD_{\text{first absorption peak}*}$-$OD_{800nm}$) x constant**

*$OD_{500nm}$ for QPP665

**this constant is size dependent and is given in the following charts:

**CORE/SHELL CdSe/ZnS**

QSP

| Em λ (nm) | constant | Em λ (nm) | constant |
|---|---|---|---|
| 640 | 1 | 570 | 0.8 |
| 630 | 1 | 560 | 0.7 |
| 620 | 1 | 550 | 0.6 |

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| | | | |
|---|---|---|---|
| 610 | 1 | 540 | 0.6 |
| 600 | 1 | 530 | 0.5 |
| 590 | 1 | 520 | 0.5 |
| 580 | 1 | 510 | 0.5 |

QPP

| Em λ (nm) | constant | Em λ (nm) | constant |
|---|---|---|---|
| 665* | 1 | 540 | 1.75 |
| 645 | 2 | 525 | 1.75 |
| 630 | 2.24 | 490 | 2 |
| 600 | 2.2 | 450 | 1.8 |
| 575 | 2.47 | | |

*: Use $OD_{500nm}$

**CORE CdSe**

| Em λ (nm) | constant | Em λ (nm) | constant |
|---|---|---|---|
| 640 | 0.63 | 570 | 0.52 |
| 630 | 0.58 | 560 | 0.46 |
| 620 | 0.58 | 550 | 0.45 |
| 610 | 0.57 | 540 | 0.40 |
| 600 | 0.55 | 530 | 0.41 |
| 590 | 0.54 | 520 | 0.40 |

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| | | | |
|---|---|---|---|
| 580 | 0.54 | 510 | 0.43 |

**3. Colloidal stability**

QSP and QPP have been tested for dispersion in hexane, toluene, chloroform, xylene, and THF.

QCO and QPT have been tested for dispersion in hexane and toluene.

QCH is stable in water at pH 6-10.

**YES! We do provide custom nanoparticle synthesis service.** For detailed information, please check our website: http://oceannanotech.com/nav.php?qid=1

If you have more questions, please contact us at info@oceannanotech.com.