

GENERAL DESCRIPTION

CuInS₂/ZnS core-shell quantum dots (QD) emitting peak photoluminescence at 800 nm wavelength, supplied as a stabilized liquid concentrate in 1-tetradecene (TDE) for customer reformulation prior to incorporation into inks, coatings, or polymer systems. Typical applications include light conversion to near-infrared. The ZnS shell and organic ligand layer provide surface passivation for improved optical stability. Exhibits strong UV absorption. Heavy-metal- and phosphine-free composition. Low self-absorption due to a large Stokes shift (>300 meV).

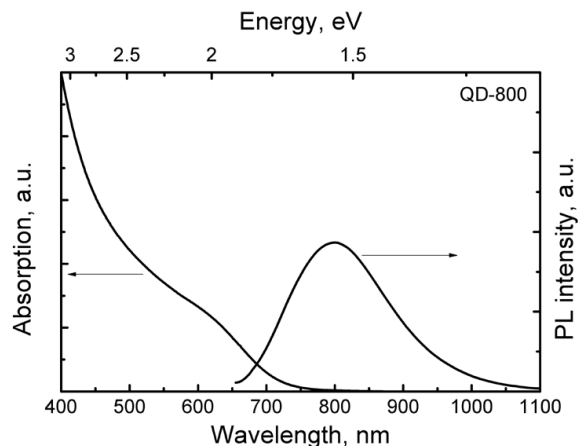


PROPERTIES

QD CAS #	927198-36-5
TDE CAS #	1120-36-1
Form	Colloidal dispersion
Composition	CuInS ₂ /ZnS
Peak Emission Wavelength, UV excited (nm)	800 ± 20
Full width at half maximum (nm)	180 ± 50
Quantum Yield (%)	>75%
Appearance	Dark charcoal
QD Particle Size (nm)	6±2
Solvent	1-tetradecene
QD Content	50 ± 1 wt%
Filtration	Shipped ≥0.2 μm PTFE-filtered
Density, 25°C (g/mL)	1.2 ± 0.1
Ligand	Long chain carboxylic acid

For more information about test methods, contact your UbiQD representative.

REPRESENTATIVE ABSORPTION & EMISSION SPECTRA*



*Excited under 405nm. Diluted in toluene.

HANDLING, STORAGE & SHELF LIFE

- Avoid exposure to UV or direct sunlight during handling; normal indoor lighting is acceptable.
- Store in closed, upright container at room temperature protected from light and moisture.
- Unopened Shelf Life: 6 months

STABILITY & DURABILITY

- QDs may undergo photo-oxidation and loss of quantum yield if not properly formulated, packaged, and stored.
- As-supplied dispersion is intended for formulation and not for direct use. Long-term stability depends on the user's chosen

formulation and must be verified under intended conditions.

- Incompatible with strong acids and bases, or with strong oxidizing agents.
- QDs may degrade at temperatures 180-240°C.
- QD emission may redshift at temperatures >50°C.

SOLVENT COMPATIBILITY & DILUTION

- Good: toluene, hexane, 1-octadecene
- Poor/not recommended: alcohols, water, highly polar or protic solvents

- Note: Dilution solvent can shift emission wavelength and impact quantum yield. User must test in their chosen formulation and verify under intended conditions.

PROCESSING & USE

- For polymer compounding, use liquid injection for extrusion.
- For solution applications: settling can occur; redisperse by gentle inversion, vortexing, or brief low-energy sonication (<30 s). Avoid prolonged high-shear, probe, or aggressive sonication.

Available for commercial supply, subject to a separate supply/license agreement.

Values and statements herein (including test results) are typical and for guidance only; they do not constitute specifications or a guarantee of performance. Test methods and Certificate of Analysis (COA) available on request. Suitability depends on the complete formulation and processing and must be verified by the user. This product is neither tested nor represented as suitable for medical or pharmaceutical uses. To the maximum extent permitted by law, no warranties, express or implied, including merchantability or fitness for a particular purpose, are made, and no license to any intellectual-property rights is granted or implied. UbiQD products are warranted only to conform to our then-current specifications at shipment; the purchaser's exclusive remedy is replacement or refund of purchase price. This document is not part of the Terms and Conditions of Sale. See the SDS for safe handling and regulatory information.