

GENERAL DESCRIPTION

CuInS₂/ZnS core-shell quantum dots (QD) emitting near infrared photoluminescence at a peak wavelength of 800 nm. Common uses include light-conversion to near-infrared. The ZnS shell and organic ligand sphere provide surface passivation for improved optical stability and safer handling. Exhibits strong UV absorption. Demonstrated in WENDOW® Solar Windows. Can be used as an additive to polymers, inks, or coatings.

- Heavy metal- and phosphine-free composition supports regulatory and environmental objectives.
- Low self-absorption due to a large Stokes shift (>300 meV).

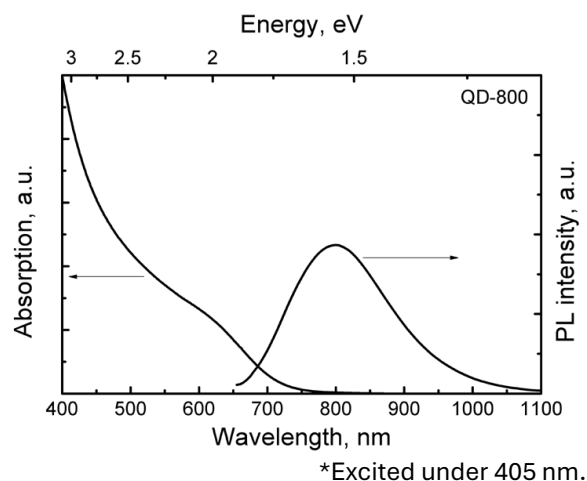
PROPERTIES

CAS #	927198-36-5
Delivery Form	Tacky particulate solids
Composition	CuInS ₂ /ZnS
Peak Emission Wavelength, UV excited (nm)	800 ± 20
Full width at half maximum (nm)	180 ± 50
Quantum Yield (%)	>75%
Color	Dark charcoal
Particle Size (nm)	6 ± 2
Ligand	Long chain carboxylic acid

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



REPRESENTATIVE ABSORPTION & EMISSION SPECTRA*



HANDLING, STORAGE & SHELF LIFE

- Avoid exposure to UV or direct sunlight during handling; normal indoor lighting is acceptable.
- Store in closed container at room temperature protected from light and moisture.
- Long term storage in halogenated solvents is not recommended.
- Unopened Shelf Life: 6 months

STABILITY & DURABILITY

- May undergo photo-oxidation and loss of quantum yield if not properly formulated, packaged, and stored.
- As-supplied solids are intended for use in formulations and are 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 & POLYMER COMPATIBILITY

- Good solubility in non-polar solvents. Poor solubility in polar solvents.
- Successfully compounded into thermoplastic polymers via twin-screw extruder.
- Successfully blended into UV-curable resin.
- Emission wavelength and FWHM may shift depending on solvent and matrix. User must test in their chosen formulation and verify under intended conditions.

- + High, +/- Partial, - Low/Not Recommended

Solvent	Solubility	Shelf Life
Toluene	+	+/-
1-octadecene	+	+
Hexane	+	+
Water	-	-
Highly polar solvents	-	-

Polymer	Compatibility
Polyethylene	+
EVA	+
POE	+
PA (Nylon)	+
PMMA	+
EVOH	+
Polycarbonate	-
TPU	+
Acrylates	+

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.