

PRODUCT IDENTIFICATION



Product Name: Cadmium Oxide Powder ACS Reagent

CAS Number: 1306-19-0

Molecular Formula: CdO

Molecular Weight: 128.41 g/mol

Grade: ACS Grade

Purity / Concentration: Not Available

Synonyms: Cadmium(II) oxide, Cadmium oxide

PRODUCT OVERVIEW

Cadmium Oxide Powder (CAS 1306-19-0) is a high-purity ACS Reagent grade material featuring a 100.0% assay and extremely low trace metal impurities. This fine crystalline powder is essential for applications requiring precise chemical consistency, particularly in semiconductor manufacturing and specialized industrial catalysis.

Grade Significance: ACS Reagent grade signifies that the product meets the stringent purity standards set by the American Chemical Society, ensuring reliability for analytical and laboratory-critical applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay	%	100.0	99.5	100.5	Titration/Gravimetric
Iron	ppm	≤ 30 ppm	—	—	ICP
Lead	ppm	≤ 50 ppm	—	—	Per specification
Manganese Mn	ppm	≤ 10 ppm	—	—	ICP-OES
Nickel Ni	ppm	≤ 15 ppm	—	—	ICP-OES
Chloride (Cl ⁻)	ppm	0.0030	—	0.01	Ion chromatography
Sulfate (SO ₄ ²⁻)	ppm	0.015	—	0.05	Ion chromatography
Cadmium Cd	ppm	≥ 870000 ppm	—	—	ICP-MS
Loss On Ignition	%	≤ 0.5 %	—	—	Gravimetric (1000°C)
Particle Size	µm	1 – 2 µm	—	—	Sieve Analysis

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Off-white to gray fine crystalline powder	Form	Solid
Boiling Point	2838 °F at 760 mmHg (sublimes) (NTP, 1992)	Melting / Freezing Point	Greater than 2732 °F (EPA, 1998)
Specific Gravity	1.5	Solubility	Slightly soluble in water, soluble in acids
Molecular Formula	CdO	Molecular Weight	128.41 g/mol
Decomposition Temp.	Above 600°C (thermally stable under 20°C conditions)		

APPLICATIONS

1. **Ceramics** — Functions as a critical pigment and flux in ceramic glazes to achieve specific vibrant colors and surface finish properties.
2. **Electronics** — Acts as a foundational component in the production of semiconductors and specialized electronic materials due to its high chemical purity.
3. **Energy Storage** — Utilized in the manufacturing of cadmium-based batteries, where it contributes to superior energy density and performance characteristics.
4. **Chemical Synthesis** — Serves as an effective catalyst in various industrial chemical reactions, helping to optimize reaction rates and overall yield.

STORAGE & HANDLING

Proper storage is critical because Cadmium Oxide is classified as toxic if swallowed and fatal if inhaled. It must be kept in a tightly sealed container within a cool, dry, and well-ventilated area to prevent accidental exposure and to maintain the integrity of the powder's particle size and purity.

- Store in a cool, dry place away from incompatible materials.
- Use appropriate personal protective equipment (PPE) such as gloves and goggles.
- Ensure adequate ventilation in the storage area to avoid dust accumulation.
- Avoid exposure to moisture to maintain product integrity.
- Compatible with HDPE containers and glass.

AVAILABLE PACKAGING

- 1 lbs.
- 4 lbs.
- 25 lbs.
- 50 Lbs.

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Danger**



Hazard Statements:

- H301: Toxic if swallowed
- H330: Fatal if inhaled
- H341: Suspected of causing genetic defects
- H350: May cause cancer
- H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
- H372: Causes damage to organs through prolonged or repeated exposure
- H410: Very toxic to aquatic life with long lasting effects

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

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