TECHNICAL DATA SHEET

Cadmium Oxide Powder Technical

Technical

CAS NUMBER	ALLIANCE CODE	GENERATED
1306-19-0	cadmium-oxide-powder	2026-08-31

REVISION	REVIEWED
1.3	2026-07-17 · Andre Taki

IDENTITY & COMPOSITION

PRODUCT NAME
Cadmium Oxide Powder Technical

ALLIANCE CODE
cadmium-oxide-powder

GRADE
Technical

CONCENTRATION
—

CAS NUMBER
1306-19-0 PubChem

FORMULA
CdO PubChem

MOLECULAR WEIGHT
128.41 PubChem

PRODUCT TYPE
pure_substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (CdO)	99.5% minimum	99.8%	—	Supplier specification
Total As + Sb + Tl	0.005 percent total by weight	0.0010 %	dc arc emission spectroscopy or equivalent analysis techniques	Supplier specification

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Chloride (Cl)	0.002 %	0.0005 %	—	Supplier specification
Copper (Cu)	0.005 %	0.0008 %	—	Supplier specification
Lead (Pb)	0.01 %	0.002 %	—	Supplier specification
Nitrate (NO3)	0.01 %	0.002 %	—	Supplier specification
Potassium (K)	Not more than 0.002%	0.0003 %	—	Supplier specification
Sodium (Na)	Not more than 0.01%	0.002 %	—	Supplier specification
Sulfate (SO4)	0.20 %	0.03 %	—	Supplier specification
Iron (Fe)	Not more than 0.005%	0.0010 %	—	Supplier specification
Zinc (Zn)	Max 0.05 %	0.008 %	ICP-OES after dissolution in dilute HCl	Interpreted
Loss on drying (105 C, 2 h)	Max 0.5 %	0.1 %	Gravimetric, oven to constant weight	Interpreted
Matter insoluble in hydrochloric acid	Max 0.1 %	0.01 %	Gravimetric, dissolution in dilute HCl, filtration and ignition	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Fineness, residue on 75 um (200 mesh) sieve	Max 0.5 %	0.05 %	Wet sieve analysis, ASTM B214	Interpreted

Specification values are guaranteed limits. Typical values are representative of production lots and are not guaranteed. Lot-specific certificates of analysis ship with every order.

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE Technical	—	—	current
ACS Reagent	—	—	cadmium-oxide-powder-acs-reagent

Typical assay shown is the rolling-window mean from the sibling product's most recent lots. Grade selection drives downstream end-use — verify the sibling grade matches your specification before substitution.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Dark brown powder or crystals	Supplier specification
Form	Solid	Published reference
Odor	Odorless	Published reference
pH	9–10	Published reference
Density	8.15 g/cm³ (crystalline); 6.95 g/cm³ (amorphous)	Published reference
Boiling Point	~1559 °C (sublimes)	Published reference
Melting Point	~1500 °C (>2732 °F, decomposes/sublimes)	Published reference
Flash Point	Not applicable (non-combustible solid)	Published reference
Vapor Pressure	Negligible	Published reference
Solubility (water)	Insoluble in water (<1 mg/mL)	Published reference

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

UN2570 49 CFR 172.101

HAZARD CLASS

6.1 Adjudicated

PACKING GROUP

I Adjudicated

PROPER SHIPPING NAME

Cadmium compounds (Cadmium oxide)

Adjudicated

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger Adjudicated

H-CODES (HAZARD STATEMENTS)

`H301, H330, H341, H350, H361fd, H372, H410`

Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)

`P201, P202, P260, P264, P270, P271, P273, P280, P281, P284, P301+P310, P304+P340, P308+P313, P310, P314, P320, P321, P330, P391, P403+P233, P405, P501`

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

0.005 mg/m³ TWA (as Cd)

OSHA 29 CFR 1910.1000

ACGIH TLV

— no canonical

NIOSH REL

Ca (carcinogen — lowest feasible concentration)

NIOSH Pocket Guide

NIOSH IDLH

9 mg/m³ (as Cd) NIOSH Pocket Guide

Transport descriptions reflect 49 CFR 172.101 lookup at time of publication. Sourced data: ECHA CLP Annex VI for harmonised classifications, NIOSH Pocket Guide for REL/IDLH, OSHA Z-Tables for PEL. Always verify against the latest regulatory text before shipment-critical decisions.

APPLICATIONS

Used as an electroplating chemical and in the manufacture of cadmium electrodes mubychem.com

Component of silver alloys, phosphors, semiconductors, glass and ceramic glazes mubychem.com

Preparation of cadmium plating solutions (federal commercial item description grade of CdO)

chemicals.emilspec.com

Applications are drawn from published manufacturer and supplier documentation; each is sourced. Suitability for a specific use is the buyer's to confirm.

STORAGE & HANDLING

RECOMMENDED STORAGE

Store in cool, dry and ventilated area away from heat sources and protected from sunlight in tightly closed original container. Keep air contact to a minimum.

mubychem.com

HANDLING PRECAUTIONS

Use standard chemical PPE — splash goggles, gloves, lab coat. Refer to SDS for hazard-specific PPE requirements.

Class-level guidance — not product-specific; the SDS controls.

INCOMPATIBILITIES

Consult the SDS for material-specific incompatibilities.

Class-level guidance — not product-specific; the SDS controls.

SHELF LIFE

Consult Technical Services for product-specific shelf life

For full hazard, PPE, and emergency response guidance, refer to the Safety Data Sheet (SDS) for this product. The SDS controls in all cases where guidance differs.

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

```
UN2570, Cadmium compounds (Cadmium oxide), 6.1, PG I
```

Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS	PLACARD	PACKING GROUP
60	Toxic	PG I

REVISION HISTORY

Last reviewed 2026-07-17 by Andre Taki, DOT Hazmat Specialist.

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-08-05	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • unNumber · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.2	2026-07-22	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • `dotSubsidiaryHazardClass` · canonical change (coa.data_provenance / adjudication) • `dotProperShippingName` · canonical change (coa.data_provenance / adjudication)	canonical_change
1.1	2026-07-17	Canonical data re-verified: 8 fields updated against independent vendor SDSs, CLP Annex VI, 49 CFR, and OSHA HazCom 2024 (GHS classification, hazard/precautionary codes, signal word, physical properties as applicable). • `countryOfOrigin` · canonical adjudication / reground (coa.data_provenance) • `dotProperShippingName` · canonical adjudication / reground (coa.data_provenance) • `ghsClassification` · canonical adjudication / reground (coa.data_provenance) • `hazard_h_codes` · canonical adjudication / reground (coa.data_provenance) • `hazard_p_codes` · canonical adjudication / reground (coa.data_provenance) • `hsCode` · canonical adjudication / reground (coa.data_provenance) • `packingGroup` · canonical adjudication / reground (coa.data_provenance) • `physicalProperties` · canonical adjudication / reground (coa.data_provenance)	canonical_change
1.0	2026-05-20	Initial URL-first TDS published from canonical chemistry registry.	initial

This Technical Data Sheet is provided for technical reference. The Safety Data Sheet (SDS) controls in all cases where guidance differs. Values reflect Alliance Chemical canonical data at time of generation; subsequent revisions are recorded in the Revision History above.