

Material Safety Data Sheet

Cadmium oxide, brown, 99%

ACC# 80057

Section 1 - Chemical Product and Company Identification

MSDS Name: Cadmium oxide, brown, 99%

Catalog Numbers: AC223790000, AC223791000, AC223795000

Synonyms: Cadmium monoxide; Cadmium oxide; Cadmium oxide fume; Cadmium oxide, production

Company Identification:

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
1306-19-0	Cadmium oxide, brown	99	215-146-2

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: red-brown powder.

Danger! Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Possible risks of irreversible effects. Cancer hazard. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of impaired fertility. Possible risk of harm to the unborn child.

Target Organs: Kidneys, liver, lungs.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin irritation.

Ingestion: May cause irritation of the digestive tract. Toxic if swallowed. Symptoms may be delayed 15 - 30 hours after ingestion and include increased salivation, nausea and vomiting, abdominal pains, diarrhea, vertigo, and unconsciousness.

Inhalation: May cause respiratory tract irritation. Toxic if inhaled. 12-16 hours after inhalation, the following symptoms may occur: change in sense of smell, headache, vertigo, gastrointestinal lesions, severe abdominal and chest pains, cough with blood, dyspnea, high temperature, severe perspiration, collapse and pneumonia. Causes kidney and lung damage. May cause severe pulmonary edema resulting in death.

Chronic: May cause cancer in humans. Chronic exposure may cause reproductive disorders and teratogenic effects. Cadmium and compounds may cause lung, liver and kidney damage and lung and prostate cancer in humans. Possible risk of irreversible effects. Possible risk of harm to the unborn child. May impair fertility. Inhalation over a number of years results in chronic cadmium poisoning, a disease characterized by distinctive, nonhypertrophic emphysema with or without

renal tubular injury. Long term exposure may also cause anemia, chronic rhinitis, yellow discoloration of the teeth and bone

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Call a poison control center.

Inhalation: If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask. POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Persons with skin problems or liver, kidney, lung, or blood diseases may be at increased risk from exposure to this substance. Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: Not available.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Use only in a chemical fume hood. Do not breathe dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Cadmium oxide, brown	0.01 mg/m ³ TWA (as Cd); 0.002 mg/m ³ TWA (respirable fraction, as Cd) (listed under Cadmium compounds).	none listed	2.5 æg/m ³ Action Level (as Cd); 5 æg/m ³ TWA (as Cd. Do not eat, drink or chew tobacco or gum or apply cosmetics in regulated areas. Carcinogen: dust can cause lung and kidney disease. See 29 CFR 1910.1027) (listed under Cadmium compounds).

OSHA Vacated PELs: Cadmium oxide, brown: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves and clothing to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Powder

Appearance: red-brown

Odor: odorless

pH: Not available.

Vapor Pressure: 1 mm Hg @ 1000 deg C

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 1385 deg C @ 760.00mmHg

Freezing/Melting Point: decomp @ 950 deg C

Decomposition Temperature: > 900 deg C

Solubility: practically insoluble in water

Specific Gravity/Density: 8.15 g/cm³

Molecular Formula: CdO

Molecular Weight: 128.40

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. May discolor on exposure to light.

Conditions to Avoid: Incompatible materials, light, dust generation, excess heat.

Incompatibilities with Other Materials: Oxidizing agents, strong oxidizing agents, acids.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, cadmium fumes.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 1306-19-0: EV1925000

LD50/LC50:

CAS# 1306-19-0:

Inhalation, mouse: LC50 = 250 mg/m³/2H;

Inhalation, rabbit: LC50 = 2500 mg/m³/10M;

Inhalation, rat: LC50 = 45 mg/m³/1H;

Oral, mouse: LD50 = 67 mg/kg;

Oral, rat: LD50 = 72 mg/kg;

Carcinogenicity:

CAS# 1306-19-0:

- | ACGIH: A2 - Suspected Human Carcinogen (listed as 'Cadmium compounds').
- | California: carcinogen, initial date 10/1/87 (listed as Cadmium compounds).
- | NTP: Known carcinogen (listed as Cadmium compounds).
- | IARC: Group 1 carcinogen

Epidemiology: NIOSH cited recent epidemiological evidence of a significant excess of respiratory cancer deaths among a cohort of cadmium production workers and concluded that cadmium and its compounds are potential carcinogens.

Teratogenicity: Teratogenic effects have occurred in experimental animals.

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals. Evidence of gonadal effects from cadmium include changes in sperm and prostate cancer.

Mutagenicity: No information found

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: Cadmium may migrate in the environment in the form of nitrate, chloride and carbonate complexes, hydroxide complexes, ammonia complexes, and as chelated and other organo-metallic complexes resulting from decay of plant and animal matter and humus. Tends to precipitate in natural waters w/manganese oxide, iron oxide, and hydrates. Relatively mobile in aquatic environment and may be transported in solution as either hydrated cations or as organic or inorganic complexes. Adsorption onto soils is strongly pH-dependent, increasing as conditions become more alkaline.

Physical: Tends to precipitate in natural waters w/manganese oxide, iron oxide, and hydrates. No evidence was found indicating that photolysis is an important mechanism in determining the fate of cadmium compounds in the aquatic environment.

Other: Do not empty into drains.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	CADMIUM COMPOUNDS	CADMIUM COMPOUND (CADMIUM OXIDE)
Hazard Class:	6.1	6.1
UN Number:	UN2570	UN2570
Packing Group:	I	I

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 1306-19-0 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

CAS# 1306-19-0: 100 lb lower threshold TPO; 10000 lb upper threshold T PO

Section 313

This material contains Cadmium oxide, brown (listed as Cadmium compounds), 99%, (CAS# 1306-19-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 1306-19-0 (listed as Cadmium compounds) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA. CAS# 1306-19-0 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 1306-19-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Cadmium oxide, brown, listed as 'Cadmium compounds', a chemical known to the state of California to cause cancer.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T+ N

Risk Phrases:

R 26 Very toxic by inhalation.

R 45 May cause cancer.

R 48/23/25 Toxic : danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

R 62 Possible risk of impaired fertility.

R 63 Possible risk of harm to the unborn child.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 68 Possible risk of irreversible effects.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 1306-19-0: 3

Canada - DSL/NDSL

CAS# 1306-19-0 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1A, D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 1306-19-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/02/1997

Revision #8 Date: 6/18/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.