

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
Substance name	: Cadmium Oxide
IUPAC name	:
EC index no	: 048-002-00-0
EC no	: 215-146-2
CAS No	: 1306-19-0
REACH registration No	: 01-2119486766-19
Formula	: CdO
Product group	: Trade product

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category	: Reserved for industrial and professional use.
Industrial/Professional use spec	: Intermediate Non-dispersive use
Use of the substance/mixture	: See attached safety data sheets and/or usage instructions.
Function or use category	: Electrical batteries and accumulators., Laboratory chemicals, Intermediates, Electroplating agents

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Flaurea Chemicals
 12 Quai des Usines
 7800 Ath - Belgique
 T +32(0)68281912 ; 8h30 - 16h45 - F +32(0)68286811
reception@flaureachemicals.com - <http://www.flaureachemicals.com>

1.4. Emergency telephone number

Emergency number : +32(0)68281912 ou <http://www.who.int/countries/en/>
 Immediately call a POISON CENTER or doctor/ physician.

Country	Official advisory body	Address	Emergency number
CANADA EN	Ontario Poison Centre (OPC) / Centre anti-poison de l'Ontario	The Hospital for Sick Children, 555 University Avenue, Toronto, ON M5G 1X8 ON M5G 1X8 Toronto	1-800-268-9017
GREECE	Poisons Information Centre Children's Hospital "Aglaia. Kyriakou"	11527 Athens	+30 10 779 3777
ICELAND	Iceland Poisons Information Centre Landspítali University Hospital	Fossvogi 108 Reykjavik	+354 525 111 +354 543 2222
IRELAND (REPUBLIC OF)	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	: +353 1 8379964
UNITED KINGDOM	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	0870 243 2241
USA	USA - Poison control center - emergency number	general call center	1-800-222-1222
USA	USA poison center	3201 New Mexico Ave, Suite 310 DC 20016 Washington	1-800-222-1222
إسرائيل	Israel Poison Information Center Rambam Health Care Campus	6 Ha'Aliya Street 31096 Haifa	+972 4 854 1900

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 3 (Oral)	H301
Acute Tox. 2 (Inhalation:dust,mist)	H330
Muta. 2	H341
Carc. 1B	H350

Cadmium Oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Repr. 2	H361f
STOT RE 1	H372
Aquatic Acute 1	H400 (M=10)
Aquatic Chronic 1	H410 (M=10)

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.2; R45
Muta.Cat.3; R68
Repr.Cat.3; R62
Repr.Cat.3; R63
T+; R26
T; R48/23/25
N; R50/53
Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



CLP Signal word

: Danger

Hazard statements (CLP)

: H301 - Toxic if swallowed
H330 - Fatal if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361f - Suspected of damaging fertility
H372 - Causes damage to organs through prolonged or repeated exposure
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (CLP)

: P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P281 - Use personal protective equipment as required
P308+P313 - IF exposed or concerned: Get medical advice/attention
P501 - Dispose of contents/container to This material and its container must be disposed of in a safe way, and as per local legislation
P391 - Collect spillage
P405 - Store locked up

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Other hazards not contributing to the classification : Product is inorganic. (CSR 2010).

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type	: Mono-constituent
Name	: Cadmium Oxide
CAS No	: 1306-19-0
EC no	: 215-146-2
EC index no	: 048-002-00-0

Cadmium Oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Name	Product identifier	%	Classification according to Directive 67/548/EEC
Cadmium Oxide substance listed as REACH Candidate	(CAS No) 1306-19-0 (EC no) 215-146-2 (EC index no) 048-002-00-0 (REACH-no) 01-2119486766-19	99,45 - 100	Carc.Cat.2; R45 Muta.Cat.3; R68 Repr.Cat.3; R62 Repr.Cat.3; R63 T+; R26 T; R48/23/25 N; R50/53
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Cadmium Oxide substance listed as REACH Candidate	(CAS No) 1306-19-0 (EC no) 215-146-2 (EC index no) 048-002-00-0 (REACH-no) 01-2119486766-19	99,45 - 100	Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Inhalation:dust,mist), H330 Muta. 2, H341 Carc. 1B, H350 Repr. 2, H361f STOT RE 1, H372 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)

Full text of R- and H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
First-aid measures after inhalation	: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
First-aid measures after skin contact	: For even minor contact, immediately remove contaminated clothing. Wash skin thoroughly with mild soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Give water to drink if victim completely conscious/alert. Do not induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Symptoms/injuries after inhalation	: Dust from this product may cause irritation to the respiratory tract. Cough. Abdominal pain. respiratory complaints.
Symptoms/injuries after eye contact	: Dust from this product may cause eyes irritation. Conjunctival redness.
Symptoms/injuries after ingestion	: gastrointestinal complaints. Nausea. Vomiting. Abdominal pain. Burning sensation. The product causes cramps.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO2). Foam. In a remote area, use water fog. Powder.

5.2. Special hazards arising from the substance or mixture

Explosion hazard : not explosive.

5.3. Advice for firefighters

Protection during firefighting : Self contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Do not breathe dust. Self contained breathing apparatus.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Self contained breathing apparatus.

Cadmium Oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010

6.2. Environmental precautions

Do not allow to enter drains or water courses.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Avoid raising powdered materials into airborne dust.

6.4. Reference to other sections

See protective measures under point 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wear suitable protective clothing, gloves and eye or face protection.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in original containers. Avoid raising powdered materials into airborne dust.
Storage conditions : Do not expose to temperatures exceeding 50°C/122°F.
Storage area : Store in tightly closed containers. Store away from heat/moisture. Store under dry conditions. Store at ambient temperature. Store in a place accessible by authorised persons only.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Cadmium Oxide (1306-19-0)		
EU	IOELV TWA (mg/m ³)	0,004 mg/m ³ Inhalation of dust/particles
EU	Notes	The protection of workers in the Cd-related industry is achieved by the systematic implementation of a carefully designed stepwise risk management system, outlining measures to control worker exposure and combining measurements of both exposure and effect. The system is aimed at prevention of exposure and protection against early manifestation of (subclinical) effect at the level of the critical organ, the kidney. The system is described in detail in annex of section 8, see appended.
Austria	MAK (mg/m ³)	0,15 mg/m ³ E: respirable fraction
Austria	MAK Short time value (mg/m ³)	0,03 mg/m ³ E: respirable fraction
Belgium	Limit value (mg/m ³)	0,002 mg/m ³ respirable dust
Denmark	Grænseværdie (langvarig) (mg/m ³)	0,005 mg/m ³
Finland	HTP-arvo (8h) (mg/m ³)	0,01 mg/m ³
France	VME (mg/m ³)	0,05 mg/m ³
France	VLE (mg/m ³)	0,05 mg/m ³
Hungary	AK-érték	0,05 mg/m ³
Netherlands	Grenswaarde TGG 8H (mg/m ³)	0,005 mg/m ³
Spain	VLA-ED (mg/m ³)	0,002 mg/m ³ respirable dust
Sweden	nivågränsvärde (NVG) (mg/m ³)	0,005 mg/m ³ respirable dust
United Kingdom	WEL TWA (mg/m ³)	0,025 mg/m ³
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	0,02 mg/m ³
Switzerland	VLE (mg/m ³)	0,002 mg/m ³ respirable dust
USA - ACGIH	ACGIH TWA (mg/m ³)	0,005 mg/m ³

Cadmium Oxide (1306-19-0)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	0,05 mg/kg bodyweight/day (Cd)
Acute - systemic effects, inhalation	0,004 mg/m ³ (Cd)
Acute - local effects, inhalation	0,004 mg/m ³ (Cd)
Long-term - systemic effects, inhalation	0,004 mg/m ³ (Cd)
Long-term - local effects, inhalation	0,004 mg/m ³ (Cd)
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	0,001 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0,00019 mg/l (Cd)

Cadmium Oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Cadmium Oxide (1306-19-0)	
PNEC aqua (marine water)	0,00114 mg/l (Cd)
PNEC (Sediment)	
PNEC sediment (freshwater)	1,8 mg/kg dwt
PNEC sediment (marine water)	0,64 mg/kg dwt
PNEC (Soil)	
PNEC soil	0,0009 mg/kg dwt (Cd)
PNEC (Oral)	
PNEC oral (secondary poisoning)	0,00016 kg/kg food (mg Cd/Kg food)
PNEC (STP)	
PNEC sewage treatment plant	0,02 mg/l

DNEL : 0,004 mg/m³ Cd
PNEC : 0,00019 mg/l Drinking water.

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation. (High efficiency 90-95%).

Personal protective equipment : Protective clothing. Dust/aerosol mask with filter type P3. Protective goggles. Gloves. rubber gloves. NBR (Nitrile rubber). Neoprene. Butyl caoutchouc (butyl rubber). PolyEthylene. EN 374-3 : 2003.

Materials for protective clothing : Wear protective gloves/protective clothing/eye protection/face protection.

Hand protection : Wear gloves

Eye protection : Safety glasses

Skin and body protection : Wear protective gloves/protective clothing.



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Powder.

Molecular mass : 128,4104

Colour : red brown.

Odour : odourless.

Odour threshold : Not applicable

pH : Not applicable

pH solution : Not applicable

Relative evaporation rate (butylacetate=1) : Not applicable

Relative evaporation rate (ether=1) : Not applicable

Melting point : No data available

Freezing point : 950 °C

Boiling point : Not applicable

Flash point : Not applicable

Critical temperature : Not applicable

Auto-ignition temperature : Not applicable

Decomposition temperature : Not applicable

Flammability (solid, gas) : Not applicable

Vapour pressure : Not applicable

Vapour pressure at 50 °C : Not applicable

Critical pressure : Not applicable

Relative vapour density at 20 °C : Not applicable

Relative density : Not applicable

Relative density of saturated gas/air mixture : Not applicable

Density : 8,26 g/cm³ (20°C)

Relative gas density : Not applicable

Cadmium Oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Solubility	: slightly soluble. Water: 2,1 mg/l (20°C)
Log Pow	: Not applicable
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive properties	: not explosive.
Oxidising properties	: not applicable.
Explosive limits	: Not applicable Not applicable

9.2. Other information

Sublimation point	: 950 °C
Miscibility	: eau 0,021 g/100ml
VOC content	: Not applicable
Particle size in µm	: D50 : 129 µm; D80 : >215µm

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable at room temperature.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

alkaline. Do not mix with acids.

10.5. Incompatible materials

Magnesium.

10.6. Hazardous decomposition products

None known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed. Inhalation:dust,mist: Fatal if inhaled.

Cadmium Oxide (1306-19-0)	
LD50 oral rat	63 - 259 mg/kg
LD50 oral	63 mg/kg Mouse
LC50 inhalation rat (mg/l)	0,0008 - 0,066 mg/l/4h

Skin corrosion/irritation	: Not classified (Conclusive but not sufficient for classification) pH: Not applicable
Serious eye damage/irritation	: Not classified (Conclusive but not sufficient for classification) pH: Not applicable
Respiratory or skin sensitisation	: Not classified (Conclusive but not sufficient for classification)
Germ cell mutagenicity	: Suspected of causing genetic defects.
Carcinogenicity	: May cause cancer.
Reproductive toxicity	: Suspected of damaging fertility.
Specific target organ toxicity (single exposure)	: Not classified (Conclusive but not sufficient for classification)
Specific target organ toxicity (repeated exposure)	: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified (Lack of data)

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: N : Dangerous for the environment.
Ecology - water	: Avoid release to the environment. Refer to special instructions/Safety data sheets.

Cadmium Oxide (1306-19-0)	
LC50 fish 1	0,034 - 6,47 mg/l Salmo salar
EC50 Daphnia 1	0,036 mg/l Daphnia magna (Big water flea).

Cadmium Oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Cadmium Oxide (1306-19-0)	
EC50 other aquatic organisms 1	0,021 mg/l Selenastrum capricornutum
EC50 Daphnia 2	0,038 - 1,9 mg/l
ErC50 (algae)	0,018 mg/l Selenastrum capricornutum
NOEC (chronic)	0,00021 mg/l Daphnia magna (Big water flea).
NOEC chronic fish	0,00047 mg/l Salmo salar
NOEC chronic algae	0,00085 mg/l Asterionella formosa
unit/Content	Cadmium, mg/l

12.2. Persistence and degradability

Cadmium Oxide (1306-19-0)	
Persistence and degradability	Not applicable. Mineral.

12.3. Bioaccumulative potential

Cadmium Oxide (1306-19-0)	
Bioconcentration factor (BCF REACH)	Inconclusive data
Log Pow	Not applicable
Bioaccumulative potential	According to literature, not bioaccumulative. BCF Fish. Low. Inconclusive data.

12.4. Mobility in soil

Cadmium Oxide (1306-19-0)	
Log Koc	2,45 (pH 6.5)

12.5. Results of PBT and vPvB assessment

Cadmium Oxide (1306-19-0)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Recycling.
Waste treatment methods	: Consult the appropriate local waste disposal expert about waste disposal. Recycling.
Waste disposal recommendations	: Recycling.
Ecology - waste materials	: Recycling. S.N.A.M. Avenue Jean Jaurès 12110 Viviez, France T: +33 565437730.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No.	: 2570
UN-No. (IMDG)	: 2570
UN-No.(IATA)	: 2570
UN-No.(ADN)	: Not applicable
UN-No. (RID)	: 2570

14.2. UN proper shipping name

Proper Shipping Name	: Cadmium compound (Cadmium Oxide)
Proper Shipping Name (IMDG)	: Cadmium compound (Cadmium Oxide)
Proper Shipping Name (IATA)	: Cadmium compound (Cadmium Oxide)
Proper Shipping Name (ADN)	: Not applicable
Proper Shipping Name (RID)	: Not applicable
Transport document description	: UN 2570 Cadmium compound (Cadmium Oxide), 6.1, I, (E), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG)	: UN 2570 Cadmium compound (Cadmium Oxide), 6.1, I, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 6.1
Danger labels (UN)	: 6.1

Cadmium Oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010



IMDG

Transport hazard class(es) (IMDG) : 6.1

Danger labels (IMDG) : 6.1



IATA

Transport hazard class(es) (IATA) : 6.1

Hazard labels (IATA) : 6.1



ADN

Transport hazard class(es) (ADN) : 6.1

Danger labels (ADN) : 6.1



RID

Transport hazard class(es) (RID) : 6.1

Danger labels (RID) : 6.1



14.4. Packing group

Packing group (UN) : I
Packing group (IMDG) : I
Packing group (IATA) : I
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : Yes
Marine pollutant : Yes
Other information : Marine pollutant:

14.6. Special precautions for user

Special transport precautions : Must not come into contact with food or be consumed.

14.6.1. Overland transport

Classification code (UN) : T5

Cadmium Oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Special provisions (ADR)	: 274, 596
Vehicle for tank carriage	: AT
Transport category (ADR)	: 1
Tunnel restriction code (ADR)	: E

14.6.2. Transport by sea

14.6.3. Air transport

14.6.4. Inland waterway transport

Not subject to ADN : No

14.6.5. Rail transport

Carriage prohibited (RID) : No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions
is on the REACH Candidate List
Cadmium Oxide is not on the REACH Annex XIV List

VOC content : Not applicable

15.1.2. National regulations

France

Occupational diseases : RG 61 BIS - Cancer broncho-pulmonaire provoqué par l'inhalation de poussières ou fumées renfermant du cadmium
RG 61 - Maladies professionnelles provoquées par le cadmium et ses composés

Germany

Water hazard class (WGK) : 3 - severe hazard to waters

Netherlands

Waterbezwaarlijkheid : 4 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

15.2. Chemical safety assessment

A chemical safety assessment has been carried out
GES are available in English (see appendix).

SECTION 16: Other information

Indication of changes:

Major, according to Regulation (EC) No. 453/2010, according to Regulation (EC) No. 1907/2006 (REACH). Labelling according to Regulation (EC) No. 1272/2008 [CLP].

15.1	substance listed as REACH Candidate	Added	
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Data sources : Chemical Safety Report from REACH Registration file.

Other information : Read label before use. The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Full text of R-, H- and EUH-phrases:

Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Carc. 1B	Carcinogenicity, Category 1B
Muta. 2	Germ cell mutagenicity, Category 2

Cadmium Oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Repr. 2	Reproductive toxicity, Category 2
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
H301	Toxic if swallowed
H330	Fatal if inhaled
H341	Suspected of causing genetic defects
H350	May cause cancer
H361f	Suspected of damaging fertility
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
R26	Very toxic by inhalation
R45	May cause cancer
R48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R62	Possible risk of impaired fertility
R63	Possible risk of harm to the unborn child
R68	Possible risk of irreversible effects
N	Dangerous for the environment
T	Toxic
T+	Very toxic

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product