

SAFETY DATA SHEET

1. Identification

Product identifier: CADMIUM CHLORIDE ANHYDROUS

Other means of identification

Product No.: 1212

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Health hazards

Acute toxicity (Oral)	Category 3
Acute toxicity (Inhalation - dust and mist)	Category 2
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1B
Toxic to reproduction	Category 1B
Specific target organ toxicity - repeated exposure	Category 1

Environmental hazards

Acute hazards to the aquatic environment	Category 2
Chronic hazards to the aquatic environment	Category 2

Label elements

Hazard symbol:



Signal word: Danger

Hazard statement: Toxic if swallowed.
Fatal if inhaled.
May cause genetic defects.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.
May form combustible dust concentrations in air.

Precautionary statement

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. [In case of inadequate ventilation] wear respiratory protection. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Prevent dust accumulation to minimize explosion hazard.

Response: Specific treatment is urgent (see this label). IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice/attention. Collect spillage.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
CADMIUM CHLORIDE		10108-64-2	99 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Give large quantities of water and induce vomiting. Never give liquid to an unconscious person. Get medical attention immediately.

Inhalation: Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary.

Skin contact: Wipe off excess material from skin. Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Most important symptoms/effects, acute and delayed

Symptoms: Fatal if inhaled. Toxic if swallowed.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: Can form dust clouds that may explode on contact with flames, heat and oxidizers.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Ventilate closed spaces before entering them. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up: Avoid dust formation. Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spills for later disposal.

Notification Procedures: Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

Environmental precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

7. Handling and storage

Precautions for safe handling: Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Do not breathe dust. Do not taste or swallow. Do not eat, drink or smoke when using the product. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use only with adequate ventilation. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in a well-ventilated place. Store in a dry place. Store locked up.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
CADMIUM CHLORIDE - Respirable fraction. - as Cd	TWA	0.002 mg/m ³	US. ACGIH Threshold Limit Values (2011)
CADMIUM CHLORIDE - as Cd	TWA	0.01 mg/m ³	US. ACGIH Threshold Limit Values (2011)
CADMIUM CHLORIDE	TWA	0.005 mg/m ³	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) (02 2006)
	OSHA_ACT	0.0025 mg/m ³	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) (02 2006)
	ST ESL	0.1 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL	0.01 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)

Biological limit values

Chemical identity	Exposure Limit values	Source
CADMIUM CHLORIDE (Cadmium: Sampling time: Not critical.)	5 µg/l (Blood)	ACGIH BEL (2011)
	5 µg/g (Creatinine in urine)	ACGIH BEL (2011)

Appropriate engineering controls No data available.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection: Chemical resistant gloves

Other: Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Provide eyewash station and safety shower.

9. Physical and chemical properties

Appearance

Physical state:	Solid
Form:	Crystals or powder
Color:	Colorless
Odor:	Odorless
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	568 °C
Initial boiling point and boiling range:	960 °C
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	0.01 kPa (471 °C)
Vapor density:	No data available.
Relative density:	4.07 (20 °C)
Solubility(ies)	
Solubility in water:	1,400 g/l (20 °C)
Solubility (other):	methanol: 1.7 g/ml (15.5 °C)
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.
Other information	
Molecular weight:	183.32 g/mol (CdCl ₂)

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames. Avoid conditions which create dust. Contact with incompatible materials.
Incompatible materials:	Oxidizing agents. Metals.
Hazardous decomposition products:	In case of fire, toxic gases may be formed.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	Toxic if swallowed.
Inhalation:	Fatal if inhaled.
Skin contact:	May cause irritation.
Eye contact:	May irritate eyes.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: LD 50 (Rat): 88 mg/kg

Dermal
Product: No data available.

Inhalation
Product: No data available.

Repeated dose toxicity
Product: No data available.

Skin corrosion/irritation
Product: May cause skin irritation.

Serious eye damage/eye irritation
Product: May irritate eyes.

Respiratory or skin sensitization
Product: Not a skin nor a respiratory sensitizer.

Carcinogenicity
Product: May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

CADMIUM
CHLORIDE Overall evaluation: 1. Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

CADMIUM
CHLORIDE Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity

In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity

Product: May damage fertility or the unborn child.

Specific target organ toxicity - single exposure

Product: None known.

Specific target organ toxicity - repeated exposure

Product: Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

CADMIUM CHLORIDE
LC 50 (Sheepshead minnow (Cyprinodon variegatus), 96 h): 50 mg/l Mortality
LC 50 (Bluegill (Lepomis macrochirus), 96 h): 5.6 - 7.47 mg/l Mortality
LC 50 (Bluegill (Lepomis macrochirus), 96 h): 2.2 - 2.9 mg/l Mortality
LC 50 (Fathead minnow (Pimephales promelas), 96 h): 2 - 3.81 mg/l Mortality
LC 50 (Carp (Cyprinus carpio), 96 h): 2.237 - 3.887 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

CADMIUM CHLORIDE
EC 50 (Tubificid worm (Tubifex tubifex), 48 h): 51.44 - 71.18 mg/l Intoxication
EC 50 (Water flea (Daphnia magna), 96 h): 0.044 mg/l Intoxication
LC 50 (Water flea (Daphnia magna), 96 h): 0.0115 - 0.0139 mg/l Mortality
LC 50 (Snail (Amnicola limosa), 96 h): 2.71 mg/l Mortality
LC 50 (Fiddler crab (Uca pugilator), 96 h): 23.3 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s):

CADMIUM CHLORIDE
LC 50 (Large duckweed (Spirodela polyrhiza), 14 d): 0.05 mg/l Mortality

Persistence and degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: Has the potential to bioaccumulate.

Partition coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: The product is water soluble and may spread in water systems.

Other adverse effects: Very toxic to aquatic life with long lasting effects.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number:	UN 2570
UN proper shipping name:	Cadmium compounds(CADMIUM CHLORIDE)
Transport hazard class(es)	
Class(es):	6.1
Label(s):	6.1
Packing group:	III
Marine Pollutant:	Yes

IMDG

UN number:	UN 2570
UN proper shipping name:	CADMIUM COMPOUND(CADMIUM CHLORIDE)
Transport hazard class(es)	
Class(es):	6.1
Label(s):	6.1
EmS No.:	F-A, S-A
Packing group:	III
Marine Pollutant:	No

IATA

UN number:	UN 2570
Proper Shipping Name:	Cadmium compound(CADMIUM CHLORIDE)
Transport hazard class(es):	
Class(es):	6.1
Label(s):	6.1
Marine Pollutant:	No
Packing group:	III

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
 None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

CADMIUM CHLORIDE Reportable quantity: 10 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

Chemical identity	RQ
CADMIUM CHLORIDE	10 lbs.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
CADMIUM CHLORIDE	500 lbs

SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
CADMIUM CHLORIDE	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

CADMIUM CHLORIDE Reportable quantity: 10 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

CADMIUM CHLORIDE	Carcinogenic.
CADMIUM CHLORIDE	Developmental toxin.
CADMIUM CHLORIDE	Male reproductive toxin.

US. New Jersey Worker and Community Right-to-Know Act

CADMIUM CHLORIDE	Listed
------------------	--------

US. Massachusetts RTK - Substance List

CADMIUM CHLORIDE	Listed
------------------	--------

US. Pennsylvania RTK - Hazardous Substances

CADMIUM CHLORIDE	Listed
------------------	--------

US. Rhode Island RTK

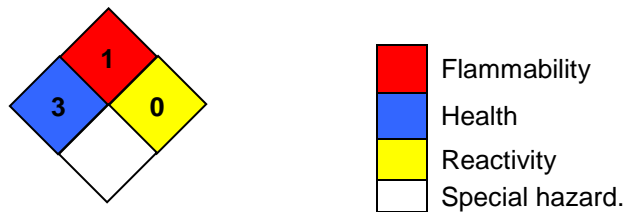
CADMIUM CHLORIDE	Listed
------------------	--------

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date:	07-09-2014
Revision date:	No data available.
Version #:	2.0
Further information:	No data available.

Disclaimer:

THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED "AS IS," AND AVANTOR PERFORMANCE MATERIALS MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION<(>,<)> WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE APPROPRIATENESS OF SUCH ISSUES. ACCORDINGLY, AVANTOR PERFORMANCE MATERIALS ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. AVANTOR PERFORMANCE MATERIALS REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES.