

1. Identification

Product identifier	CADMIUM, 99.999%, SHOT	
Other means of identification		
Product code	A1299	
CAS number	7440-43-9	
Recommended use	manufacture of other chemical products, professional, scientific and technical activities: other professional, scientific and technical activities	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	GFS Chemicals, Inc.	
Address	P.O. Box 245 Powell, OH 43065 United States	
Telephone	Phone	740-881-5501
	Toll Free	800-858-9682
	Fax	740-881-5989
Website	www.gfschemicals.com	
E-mail	service@gfschemicals.com	
Emergency phone number	Emergency Assistance	Chemtrec 800-424-9300

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 3
	Acute toxicity, inhalation	Category 1
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 1A
	Reproductive toxicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger
Hazard statement	Toxic if swallowed. Fatal if inhaled. Suspected of causing genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash 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. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.
Response	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. If inhaled: Remove person to fresh air and keep comfortable for breathing. In case of fire: Use appropriate media to extinguish. Collect spillage.

Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store contents under inert gas.
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.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
CADMIUM		7440-43-9	100

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Most important symptoms/effects, acute and delayed	Headache. Nausea, vomiting. Diarrhea. Coughing. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Powder. Dry sand.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	None known.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

Refer to attached safety data sheets and/or instructions for use. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Sweep up or gather material and place in appropriate container for disposal. The product is immiscible with water and will sediment in water systems. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Should not be released into the environment. Clean up in accordance with all applicable regulations.

Large Spills: Stop the flow of material, if this is without risk. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Do not breathe dust. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Material should be stored under an inert atmosphere.

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

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

Material	Type	Value
CADMIUM (CAS 7440-43-9)	TWA	0.005 mg/m3

US. OSHA Table Z-2 (29 CFR 1910.1000)

Material	Type	Value	Form
CADMIUM (CAS 7440-43-9)	Ceiling	0.6 mg/m3	Dust.
		0.3 mg/m3	Fume.
	TWA	0.2 mg/m3	Dust.
		0.1 mg/m3	Fume.

US. ACGIH Threshold Limit Values

Material	Type	Value	Form
CADMIUM (CAS 7440-43-9)	TWA	0.01 mg/m3	
		0.002 mg/m3	Respirable fraction.

Biological limit values

ACGIH Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
CADMIUM (CAS 7440-43-9)	5 µg/g	Cadmium	Creatinine in urine	*
	5 µg/l	Cadmium	Blood	*

* - For sampling details, please see the source document.

Appropriate engineering controls

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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing. Use of an impervious apron is recommended.
Respiratory protection	Respirator must be worn if exposed to dust.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Shot.
Color	metallic silver.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	609.8 °F (321 °C)
Initial boiling point and boiling range	1409 °F (765 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.

Solubility(ies)

Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.

Auto-ignition temperature	482 °F (250 °C)
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Density	8.65 g/cm ³ at 25 °C
Explosive properties	Not explosive.
Molecular formula	Cd
Molecular weight	112.41 g/mol
Oxidizing properties	Not oxidizing.
Specific gravity	8.65

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

Conditions to avoid Moisture. Contact with incompatible materials.
Incompatible materials Acids. Strong oxidizing agents.
Hazardous decomposition products Hydrogen gas.

11. Toxicological information

Information on likely routes of exposure

Inhalation Fatal if inhaled.
Skin contact No adverse effects due to skin contact are expected.
Eye contact Direct contact with eyes may cause temporary irritation.
Ingestion Toxic if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Headache. Nausea, vomiting. Diarrhea. Coughing.

Information on toxicological effects

Acute toxicity Fatal if inhaled. Toxic if swallowed.

Product	Species	Test Results
CADMIUM (CAS 7440-43-9)		
Acute		
Inhalation		
LC50	Rat	0.025 mg/l, 900 Days
Oral		
LD50	Mouse	890 mg/kg
	Rat	225 mg/kg
Other		
LD50	Mouse	5.7 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.
Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity Suspected of causing genetic defects.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

CADMIUM (CAS 7440-43-9) 1 Carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

CADMIUM (CAS 7440-43-9) Cancer

US. National Toxicology Program (NTP) Report on Carcinogens

CADMIUM (CAS 7440-43-9) Known To Be Human Carcinogen.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Product	Species		Test Results
CADMIUM (CAS 7440-43-9)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.0491 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.0024 - 0.0029 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	None known.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN2570
UN proper shipping name	Cadmium compounds (CADMIUM), MARINE POLLUTANT
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Label(s)	6.1
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB8, IP3, T1, TP33
Packaging exceptions	153
Packaging non bulk	213
Packaging bulk	240

IATA

UN number	UN2570
UN proper shipping name	Cadmium compound (CADMIUM)
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	6L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN2570
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Material name: CADMIUM, 99.999%, SHOT

A1299

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UN proper shipping name CADMIUM COMPOUND (CADMIUM), MARINE POLLUTANT
Transport hazard class(es)
Class 6.1(PGIII)
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-A, S-A
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

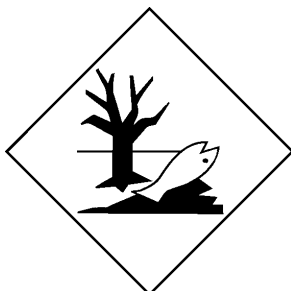
DOT



IATA; IMDG



Marine pollutant



General information DOT Regulated Severe Marine Pollutant. IMDG Regulated Severe Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

CADMIUM (CAS 7440-43-9) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

CADMIUM (CAS 7440-43-9) Cancer
 Lung
 Kidney
 Acute toxicity

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Yes
Hazardous chemical

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
CADMIUM	7440-43-9	100

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

CADMIUM (CAS 7440-43-9)

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

Not regulated.

Clean Water Act (CWA) Priority pollutant
Section 112(r) (40 CFR 68.130) Toxic pollutant

Safe Drinking Water Act (SDWA) 0.005 mg/l
0.005 mg/l

US state regulations

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

CADMIUM (CAS 7440-43-9) Listed: October 1, 1987

US - California Proposition 65 - CRT: Listed date/Developmental toxin

CADMIUM (CAS 7440-43-9) Listed: May 1, 1997

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

CADMIUM (CAS 7440-43-9) Listed: May 1, 1997

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

CADMIUM (CAS 7440-43-9)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Toxic Chemical Substances (TCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date February-10-2015
Revision date September-28-2017
Version # 02

Disclaimer

GFS Chemicals, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.