

1. Identification

Product identifier	CADMIUM CHLORIDE, HYDRATED, REAGENT (ACS)	
Other means of identification		
Product code	869	
Synonyms	CADMIUM CHLORIDE, HEMIPENTAHYDRATE	
Recommended use	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, dermal	Category 4
	Acute toxicity, inhalation	Category 2
	Carcinogenicity	Category 1
	Reproductive toxicity	Category 1
	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. Harmful in contact with skin. Fatal if inhaled. May cause cancer. May damage 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/fume. 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 respiratory protection. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF ON SKIN: Wash with plenty of soap and water. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Take off contaminated clothing and wash before reuse. Collect spillage. Rinse mouth.

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.
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 CHLORIDE, HYDRATED	CADMIUM CHLORIDE, HEMIPENTAHYDRATE	7790-78-5	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 or persists. Get medical advice/attention if you feel unwell. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops or persists. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Drink plenty of water. 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	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	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). Use any media suitable for the surrounding fires.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	In the event of fire fumes of cadmium may be formed.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Fire fighting equipment/instructions	Move containers from fire area if you can do it without risk. 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. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. 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). This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas. Stop leak if you can do so without risk.

Large Spills: Wet down with water and dike for later disposal. Sweep up or gather material and place in appropriate container for disposal. Avoid dust formation. Prevent entry into waterways, sewer, basements or confined areas. Clean up in accordance with all applicable regulations. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. After removal flush contaminated area thoroughly with water. Small Dry Spills: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. This material and its container must be disposed of as hazardous waste.

Environmental precautions

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

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. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. 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. Wash contaminated clothing before reuse.

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). Store in a cool dry place.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA

Material	Type	Value	Form
CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)	TWA	0.005 mg/m ³	as Cd

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

Material	Type	Value
CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)	TWA	0.005 mg/m ³

ACGIH

Material	Type	Value	Form
CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)	TWA	0.01 mg/m ³	total dust as Cd
		0.002 mg/m ³	respirable fraction as Cd

US. ACGIH Threshold Limit Values

Material	Type	Value	Form
CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)	TWA	0.01 mg/m ³	
		0.002 mg/m ³	Respirable fraction.

Biological limit values

US. ACGIH. BEIs. Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)	5 µg/g	Cadmium	Creatinine in urine	*

US. ACGIH. BEIs. Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
	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 appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Wear respirator if there is dust formation.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. 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**

Crystals

Physical state

Solid.

Form

Solid.

Color

White.

Odor

Odorless.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

Not available.

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) 1680 g/l

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

Not available.

Decomposition temperature

Not available.

Viscosity

Not available.

Other information

Density 3.327 g/cm³

Molecular formula	CdCl ₂ ·2.5H ₂ O
Molecular weight	228.35 g/mol
Specific gravity	3.33

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	Avoid high temperatures. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Chlorine. Decomposition of this product may yield metallic oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Fatal if inhaled.
Skin contact	Harmful in contact with skin.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Toxic if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Fatal if inhaled. Toxic if swallowed. Harmful in contact with skin.

Product	Species	Test Results
CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)		
Acute		
<i>Oral</i>		
LD50	Mouse	60 mg/kg
	Rat	88 mg/kg
<i>Other</i>		
LD50	Mouse	3.5 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 available.
Skin sensitization	This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) 1 Carcinogenic to humans.

US OSHA Hazard Categories (1)

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) Cancer

US. National Toxicology Program (NTP) Report on Carcinogens

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) Known To Be Human Carcinogen.

Reproductive toxicity May damage 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 available.

Chronic effects

Hazardous by WHMIS criteria. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Causes damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Product	Species	Test Results
CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss)
		0.0093 - 0.0102 mg/l, 48 hours
		0.006 mg/l, 96 hours

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

Persistence and degradability No data is available on the degradability of this product.

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. Dispose of waste material according to Local, State, Federal, and Provincial Environmental 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 Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information**DOT**

UN number	UN2570
UN proper shipping name	Cadmium compounds (CADMIUM CHLORIDE)
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Label(s)	6.1
Packing group	III
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 CHLORIDE)
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.
Cargo aircraft only Allowed.

IMDG

UN number UN2570
UN proper shipping name CADMIUM COMPOUND (CADMIUM CHLORIDE)
Transport hazard class(es)
Class 6.1(PGIII)
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant No.
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****15. Regulatory information**

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
 All components are on the U.S. EPA TSCA Inventory List.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) Listed.

SARA 304 Emergency release notification

Not regulated.

US OSHA Hazard Categories (1)

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) Cancer

US OSHA Hazard Categories (2)

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) Lung

US OSHA Hazard Categories (3)

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) Kidney

US OSHA Hazard Categories (4)

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) 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 CHLORIDE, HYDRATED	7790-78-5	100

Other federal regulations

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

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)

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

Not regulated.

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

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

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)

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

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)

US. Pennsylvania Worker and Community Right-to-Know Law

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

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 CHLORIDE, HYDRATED (CAS 7790-78-5) Listed: October 1, 1987

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

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) Listed: May 1, 1997

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

CADMIUM CHLORIDE, HYDRATED (CAS 7790-78-5) Listed: May 1, 1997

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)	Yes
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
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 August-24-2015

Version # 01

Disclaimer GFS Chemicals 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 Product and Company Identification: Synonyms
Hazards Identification: US Hazardous
Composition / Information on Ingredients: Disclosure Overrides
Exposure Controls / Personal Protection: OELs
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Data
Transport Information: Proper Shipping Name/Packing Group
Regulatory Information: Risk Phrases - Class.
HazReg Data: North America
GHS: Classification