



# MATERIAL SAFETY DATA SHEET

according to the Global Harmonized System

Date of issue: 02/04/2013

Version 1.0

## SECTION 1. Identification

### Product identifier

Product number 109960  
Product name Cadmium standard 1000 mg Cd, (CdCl<sub>2</sub> in H<sub>2</sub>O) Titrisol®

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses Reagent for analysis

### Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,  
United States of America | SDS Phone Support: +1-978-715-1335 |  
General Inquiries: +1-978-751-4321 | Monday to Friday, 9:00 AM to  
4:00 PM Eastern Time (GMT-5)  
  
e-mail: mm\_sds@merckgroup.com

Emergency telephone 613-996-6666 CANUTEC (Canada)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

## SECTION 2. Hazards identification

### GHS Classification

Acute toxicity, Category 4, Inhalation, H332  
Germ cell mutagenicity, Category 1B, H340  
Carcinogenicity, Category 1B, H350  
Reproductive toxicity, Category 1B, H360FD  
Specific target organ systemic toxicity - repeated exposure, Category 2, H373  
Chronic aquatic toxicity, Category 2, H411  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Danger

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*Hazard Statements*

H340 May cause genetic defects.  
H350 May cause cancer.  
H360FD May damage fertility. May damage the unborn child.  
H332 Harmful if inhaled.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H411 Toxic to aquatic life with long lasting effects.

*Precautionary Statements*

P201 Obtain special instructions before use.  
P273 Avoid release to the environment.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Restricted to professional users.

**Other hazards**

None known.

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**SECTION 3. Composition/information on ingredients**

Chemical nature Aqueous solution

**Hazardous ingredients**

*Chemical Name (Concentration)*  
CAS-No.  
*Cadmium chloride (>= 1 % - < 5 % )*  
10108-64-2

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**SECTION 4. First aid measures**

**Description of first-aid measures**

*General advice*

First aider needs to protect himself.

*Inhalation*

After inhalation: fresh air. Immediately apply artificial respiration. If necessary oxygen.  
Immediately call in physician.

*Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing. Consult a physician.

*Eye contact*

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

*Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed**

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The following applies to cadmium compounds in general: mucosal irritations, coughing, and dyspnoea after inhalation. Inhalation may lead to the formation of oedemas in the respiratory tract. Toxic effect on gastrointestinal tract. Long-term exposure to the chemical results in toxic effect on kidneys, lungs, bones.

**Indication of any immediate medical attention and special treatment needed**

No information available.

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**SECTION 5. Fire-fighting measures**

**Extinguishing media**

*Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

**Special hazards arising from the substance or mixture**

Not combustible.

Ambient fire may liberate hazardous vapors.

**Advice for firefighters**

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

**Environmental precautions**

Do not empty into drains.

**Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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**SECTION 7. Handling and storage**

**Precautions for safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

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**Conditions for safe storage, including any incompatibilities**

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage temperature: no restrictions.

**SECTION 8. Exposure controls/personal protection**

**Exposure limit(s)**

*Ingredients*

| Basis                              | Value                        | Threshold limits        | Remarks   |
|------------------------------------|------------------------------|-------------------------|---|
| <i>Cadmium chloride 10108-64-2</i> |                              |                         |   |
| CAD AB OEL                         | Time Weighted Average (TWA): | 0.002 mg/m <sup>3</sup> | Form of exposure: Respirable.<br>Expressed as: as Cd          |
| CAD BC OEL                         | Time Weighted Average (TWA): | 0.01 mg/m <sup>3</sup>  | Expressed as: as Cd   |
|                                    | Time Weighted Average (TWA): | 0.002 mg/m <sup>3</sup> | Form of exposure: Respirable.<br>Expressed as: as Cd          |
| CAD MB OEL                         | Time Weighted Average (TWA): | 0.01 mg/m <sup>3</sup>  | Expressed as: as Cd   |
|                                    | Time Weighted Average (TWA): | 0.002 mg/m <sup>3</sup> | Form of exposure: Respirable fraction.<br>Expressed as: as Cd |
| CAD ON OEL                         | Time Weighted Average (TWA): | 0.01 mg/m <sup>3</sup>  | Expressed as: as Cd   |
| OEL (QUE)                          | Time Weighted Average (TWA): | 0.025 mg/m <sup>3</sup> | Exposure must be minimized.<br>Expressed as: as Cd            |

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

*Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

*Eye/face protection*

Safety glasses

*Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

*Other protective equipment:*

protective clothing

*Respiratory protection*

required when vapors/aerosols are generated.

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Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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**SECTION 9. Physical and chemical properties**

|  |  |
|--|--|
| Physical state                         | liquid                                     |
| Color                                  | colorless                                  |
| Odor                                   | odorless                                   |
| Odor Threshold                         | No information available.                  |
| pH                                     | ca. 4.2<br>at 68 °F (20 °C)                |
| Melting point                          | No information available.                  |
| Boiling point                          | No information available.                  |
| Flash point                            | No information available.                  |
| Evaporation rate                       | No information available.                  |
| Flammability (solid, gas)              | No information available.                  |
| Lower explosion limit                  | No information available.                  |
| Upper explosion limit                  | No information available.                  |
| Vapor pressure                         | No information available.                  |
| Relative vapor density                 | No information available.                  |
| Relative density                       | 1.03 g/cm <sup>3</sup><br>at 68 °F (20 °C) |
| Water solubility                       | at 68 °F (20 °C)<br>soluble                |
| Partition coefficient: n-octanol/water | No information available.                  |
| Autoignition temperature               | No information available.                  |
| Decomposition temperature              | No information available.                  |
| Viscosity, dynamic                     | No information available.                  |
| Explosive properties                   | No information available.                  |

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**SECTION 10. Stability and reactivity**

**Reactivity**

See below

**Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

**Possibility of hazardous reactions**

Violent reactions possible with:

Alkali metals, halogen-halogen compounds, The generally known reaction partners of water.

**Conditions to avoid**

no information available

**Incompatible materials**

no information available

**Hazardous decomposition products**

no information available

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**SECTION 11. Toxicological information**

**Information on toxicological effects**

*Likely route of exposure*

Eye contact, Skin contact

*Acute oral toxicity*

Acute toxicity estimate: 3,155 mg/kg

Calculation method

*Acute inhalation toxicity*

Acute toxicity estimate: 15.77 mg/l

Calculation method

absorption

*CMR effects*

Carcinogenicity:

May cause cancer.

Mutagenicity:

May cause genetic defects.

Teratogenicity:

May damage the unborn child.

Reproductive toxicity:

May damage fertility.

*Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ systemic toxicity - repeated exposure*

May cause damage to organs through prolonged or repeated exposure.

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*Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

**Carcinogenicity**

|       |  |
|-------|--|
| IARC  | Group 1: Carcinogenic to humans<br>Cadmium chloride 10108-64-2   |
| OSHA  | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |
| NTP   | Known carcinogen.<br>Cadmium chloride 10108-64-2   |
| ACGIH | A2: Suspected human carcinogen<br>Cadmium chloride 10108-64-2  |

**Further information**

Quantitative data on the toxicity of this product are not available.

Further toxicological data:

The following applies to cadmium compounds in general: mucosal irritations, coughing, and dyspnoea after inhalation. Inhalation may lead to the formation of oedemas in the respiratory tract. Toxic effect on gastrointestinal tract. Long-term exposure to the chemical results in toxic effect on kidneys, lungs, bones.

Further data:

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

**Ingredients**

*Cadmium chloride*

No information available.

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**SECTION 12. Ecological information**

**Ecotoxicity**

No information available.

**Persistence and degradability**

No information available.

**Bioaccumulative potential**

No information available.

**Mobility in soil**

No information available.

**Other adverse effects**

**Ingredients**

*Cadmium chloride*

No information available.

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**SECTION 13. Disposal considerations**

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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**SECTION 14. Transport information**

**Land transport (DOT)**

**UN number** UN 3082  
**Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CADMIUM CHLORIDE)  
**Class** 9  
**Packing group** III  
**Environmentally hazardous** --

**Air transport (IATA)**

**UN number** UN 3082  
**Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CADMIUM CHLORIDE SOLUTION)  
**Class** 9  
**Packing group** III  
**Environmentally hazardous** --  
**Special precautions for user** no

**Sea transport (IMDG)**

**UN number** UN 3082  
**Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CADMIUM CHLORIDE SOLUTION)  
**Class** 9  
**Packing group** III  
**Environmentally hazardous** --  
**Special precautions for user** yes  
**EmS** F-A S-F

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**SECTION 15. Regulatory information**

**United States of America**

**Canada**

**WHMIS Classification**

D1B Toxic Material Causing Immediate and Serious Toxic Effects  
D2A Very Toxic Material Causing Other Toxic Effects

Toxic by ingestion, Toxic by inhalation., Teratogen, Carcinogen, Reproductive hazard, Mutagen

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.



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**Notification status**

TSCA: On TSCA Inventory

DSL: All components of this product are on the Canadian DSL.

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**SECTION 16. Other information**

**Training advice**

Provide adequate information, instruction and training for operators.

**Full text of H-Statements referred to under sections 2 and 3.**

|        |  |
|--------|--|
| H332   | Harmful if inhaled.  |
| H340   | May cause genetic defects.   |
| H350   | May cause cancer.  |
| H360FD | May damage fertility. May damage the unborn child.                 |
| H373   | May cause damage to organs through prolonged or repeated exposure. |
| H411   | Toxic to aquatic life with long lasting effects.                   |

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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