

## MATERIAL SAFETY DATA SHEET

Date Printed: 01/20/2004

Date Updated: 09/05/2002

Version 1.1

## Section 1 - Product and Company Information

Product Name	AMMONIUM DICHROMATE, 99%
Product Number	224812
Brand	ALDRICH
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS MO 63103 US
Technical Phone:	314 771 5765
Emergency Phone:	414 273 3850 Ext. 5996
Fax:	800 325 5052

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
AMMONIUM DICHROMATE	7789-09-5	No
Formula	(NH <sub>4</sub> ) <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	
Synonyms	Ammonio (bicromato di) (Italian) * Ammonio (dicromato di) (Italian) * Ammoniumbichromaat (Dutch) * Ammoniumdichromat (German) * Ammonium bichromate * Ammoniumdichromaat (Dutch) * Ammonium dichromate * Ammonium (dichromate d') (French) * Ammonium dichromate (VI) * Bichromate d'ammonium (French)	
RTECS Number:	HX7650000	

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Explosive. Highly Toxic (USA) Toxic (EU).

May cause cancer. Explosive when dry. Contact with combustible material may cause fire. Toxic by inhalation, in contact with skin and if swallowed. Causes burns. May cause sensitization by skin contact.

Target organ(s): Lungs. Kidneys.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

## Section 5 - Fire Fighting Measures

## EXPLOSION HAZARDS

Container explosion may occur under fire conditions.

## FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Contact with other material may cause fire.  
Emits toxic fumes under fire conditions.

EXPOSURE HAZARD(S)

Material: Corrosive. Sensitizer.

---

Section 6 - Accidental Release Measures

---

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal.

---

Section 7 - Handling and Storage

---

HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Keep away from combustible materials, heat, sparks, and open flame. Store in a cool dry place.

---

Section 8 - Exposure Controls / PPE

---

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA USA	ACGIH ACGIH	TWA TWA	0.05 MG(CR)/M3 0.05 MG(CR)/M3
USA USA	MSHA Standard-air	TWA TWA	0.5 MG(CR)/M3 0.5 MG(CR)/M3
USA USA	OSHA. OSHA.	PEL PEL	CL 0.1 MG(CRO3)/M3 CL 0.1 MG(C
USA	NIOSH	TWA	0.001 MG(CR)/M3

---

## Section 9 - Physical/Chemical Properties

---

Appearance	Form: Crystals	
Property	Value	At Temperature or Pressure
Molecular Weight	252.07 AMU	
pH	3 - 4	
BP/BP Range	N/A	
MP/MP Range	170 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	8.7 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	2.15 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

---

## Section 10 - Stability and Reactivity

---

### STABILITY

Materials to Avoid: Strong reducing agents, Alcohols, Strong acids  
Avoid contact with acid.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Nature of decomposition products  
not known.

---

## Section 11 - Toxicological Information

---

### ROUTE OF EXPOSURE

Multiple Routes: May be fatal if inhaled, swallowed, or absorbed  
through skin.

### SENSITIZATION

Skin: May cause allergic skin reaction.

### TARGET ORGAN(S) OR SYSTEM(S)

Lungs. Kidneys. Liver.

### SIGNS AND SYMPTOMS OF EXPOSURE

Inhalation of dichromate dusts can cause ulceration and

perforation of the nasal septum. Contact with breaks in the skin can cause ulceration (chrome sores). Other symptoms of exposure include erosion and discoloration of the teeth, nephritis, epigastric pain (inflammation and ulceration of the gastrointestinal tract). Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Exposure can cause: Stomach pains, vomiting, diarrhea. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### TOXICITY DATA

Oral Oral  
Child Child

99 mg/kg 99 mg/kg

LDLO LDLO

Remarks: Gastrointestinal:Other changes. Kidney, Ureter, Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis). Blood:Change in clotting factors. Gastrointestinal:Other changes. Kidney, Ureter, Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis). Blood:Change in clotting factors.

#### CHRONIC EXPOSURE - CARCINOGEN

Result: Carcinogen.

#### IARC CARCINOGEN LIST

Rating: Group 1

#### ACGIH CARCINOGEN LIST

Rating: A1

---

#### Section 12 - Ecological Information

---

No data available.

---

#### Section 13 - Disposal Considerations

---

#### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

---

#### Section 14 - Transport Information

---

#### DOT

Proper Shipping Name: Ammonium dichromate

UN#: 1439

Class: 5.1

Packing Group: Packing Group II

Hazard Label: Oxidizer

PIH: Not PIH

#### IATA

Proper Shipping Name: Ammonium dichromate

IATA UN Number: 1439  
Hazard Class: 5.1  
Packing Group: II

---

## Section 15 - Regulatory Information

---

### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: E T+ N

Indication of Danger: Explosive. Very toxic. Dangerous for the environment.

R: 49 46 1 8 21 25 26 37/38 41 43 50/53

Risk Statements: May cause cancer by inhalation. May cause heritable genetic damage. Explosive when dry. Contact with combustible material may cause fire. Also harmful in contact with skin. Also toxic if swallowed. Also very toxic by inhalation. Irritating to respiratory system and skin. Risk of serious damage to eyes. May cause sensitization by skin contact. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S: 53 45 60 61

Safety Statements: Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Explosive. Highly Toxic (USA) Toxic (EU).

Risk Statements: May cause cancer. Explosive when dry. Contact with combustible material may cause fire. Toxic by inhalation, in contact with skin and if swallowed. Causes burns. May cause sensitization by skin contact.

Safety Statements: Avoid exposure - obtain special instructions before use. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. This material and its container must be disposed of in a safe way. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Target organ(s): Lungs. Kidneys.

### UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

NOTES: This product is subject to SARA section 313 reporting requirements. This product is subject to SARA section 313 reporting requirements.

TSCA INVENTORY ITEM: Yes Yes

### UNITED STATES - STATE REGULATORY INFORMATION

#### CALIFORNIA PROP - 65

California Prop - 65: California Proposition 65: This product is or contains chemical(s) known to the state of California to cause cancer. California Proposition 65: This product is or contains chemical(s) known to the state of California to cause cancer.

### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS

contains all the information required by the CPR.  
DSL: Yes  
NDSL: No

---

## Section 16 - Other Information

---

### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.