

SAFETY DATA SHEET

Preparation Date: 8/20/2015

Revision Date: 8/20/2015

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: A1178
Product Name: AMMONIUM DICHROMATE, CRYSTAL, REAGENT

Other means of identification

Synonyms: Ammonium bichromate
 Dichromic acid, diammonium salt
 Diammonium dichromate
 Chromic acid, diammonium salt

CAS #: 7789-09-5
RTECS # HX7650000
Cl#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: In photography. Wood preservation. Treating leather and textiles. Paints. Petroleum Production and Refining. Printing and Lithography.

Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|---|-------------|
| Acute toxicity - Oral | Category 3 |
| Acute toxicity - Dermal | Category 4 |
| Acute toxicity - Inhalation (Gases) | Category 2 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 2 |
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/eye irritation | Category 1 |
| Respiratory sensitization | Category 1 |
| Skin sensitization | Category 1 |
| Germ cell mutagenicity | Category 1B |
| Carcinogenicity | Category 1A |
| Reproductive toxicity | Category 1B |

| | |
|--|------------|
| Specific target organ toxicity (repeated exposure) | Category 1 |
| Oxidizing solids | Category 2 |

Label elements

Danger

Hazard statements

Toxic if swallowed
Harmful in contact with skin
Fatal if inhaled
Causes severe skin burns and eye damage
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
May cause genetic defects
May cause cancer
May damage fertility or the unborn child
Causes damage to organs through prolonged or repeated exposure
May intensify fire; oxidizer



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep/Store away from clothing/ .? /combustible materials
Take any precaution to avoid mixing with combustibles .?

Precautionary Statements - Response

Specific treatment (see .? on this label)
Specific measures (see .? on this label)
Specific treatment is urgent (see .? on this label)
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see .? on this label)
IN CASE OF FIRE: Use water to extinguish. Do not use dry chemicals or foams. CO₂ or Halon may provide limited control.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Components | CAS-No. | Weight % | Trade Secret |
|----------------------------------|-----------|----------|--------------|
| Ammonium Dichromate 7789-09-5 | 7789-09-5 | 100 | * |

4. FIRST AID MEASURES

First aid measures

General Advice:

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

4. FIRST AID MEASURES

| | |
|----------------------|---|
| Skin Contact: | Toxic in contact with skin. Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately. |
| Eye Contact: | Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately. |
| Inhalation: | Toxic by inhalation. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or 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. Immediate medical attention is required. |
| Ingestion: | Toxic if swallowed. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately. |

Most important symptoms and effects, both acute and delayed

| | |
|-----------------|---|
| Symptoms | Fatal if inhaled. Toxic if swallowed. Harmful in contact with skin. Causes skin and eye burns. Causes damage to organs through prolonged or repeated exposure. May damage fertility or the unborn child. May cause sensitization by inhalation and skin contact. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. May cause cancer. May cause heritable genetic damage in humans. May cause respiratory irritation. May cause irritation to mucous membranes. May cause chemical burns to the respiratory tract. It may affect the kidneys. Renal failure. It may affect the blood. May affect the liver. Chronic exposure may affect liver, kidneys/urinary system, and blood. |
|-----------------|---|

Indication of any immediate medical attention and special treatment needed

| | |
|----------------------------|-----------------------|
| Notes to Physician: | Treat symptomatically |
|----------------------------|-----------------------|

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

| | |
|--------------------------------------|--|
| Suitable Extinguishing Media: | Water. CO2 may be of no value in extinguishing fires involving oxidizers and may only provide limited control. |
|--------------------------------------|--|

| | |
|--|----------------------------------|
| Unsuitable Extinguishing Media: | CO2. Dry chemical. Foam. Halons. |
|--|----------------------------------|

Specific hazards arising from the chemical

| | |
|---------------------------------------|---|
| Hazardous Combustion Products: | Ammonia, Chromic oxides, Nitrogen oxides |
| Specific hazards: | Oxidizer. Keep away from combustible materials (wood, paper, oil, clothing, etc.) The product is not flammable, but it may cause fire when in contact with other material Contact with combustible or organic materials may cause fire Will accelerate burning when involved in a fire Container explosion may occur under fire conditions or when heated |

Special Protective Actions for Firefighters

| | |
|---|--|
| Specific Methods: | For large fires, flood fire area with water from a distance. Cool affected containers with flooding quantities of water. Do not get water inside containers. DO NOT use combustible materials such as sawdust. |
| Special Protective Equipment for Firefighters: | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear |

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Avoid dust formation. Remove all sources of ignition. Keep combustibles (wood, paper, oil, clothing, etc.) away from spilled material.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel. Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Do not use combustible materials such as paper towels, sawdust, clothing, etc. to clean up spill. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Keep away from incompatible materials. All equipment used when handling the product must be grounded.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Use only in well-ventilated areas. Do not breathe vapours/dust. Do not ingest. When using do not smoke. Keep away from combustible material. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Do not store near combustible materials. Store at room temperature in the original container. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:

Organic materials. Combustible materials. Powdered metals. Reducing agents. Acids. Hydrazine. Strong bases. Carbides. Alcohols. Ethylene glycol. Mercury cyanide.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

| Components | OSHA | NIOSH | ACGIH | AIHA WHEEL |
|----------------------------------|--|--------------------------------------|----------------------------|------------|
| Ammonium Dichromate 7789-09-5 | 0.1 mg/m ³ Ceiling 5 ug/m ³ TWA | 0.0002 mg/m ³ TWA (as Cr) | 0.05 mg/m ³ TWA | None |

Canada

| Components | Alberta | British Columbia | Ontario | Quebec |
|----------------------------------|------------------------------------|--|------------------------------------|--------------------------------------|
| Ammonium Dichromate 7789-09-5 | 0.05 mg/m ³ TWA (as Cr) | 0.1 mg.m ³ Ceiling (as Cr) 0.025 mg/m ³ TWA (as Cr) | 0.05 mg/m ³ TWA (as Cr) | 0.05 mg/m ³ TWAEV (as Cr) |

Australia and Mexico

| Components | Australia | Mexico |
|----------------------------------|------------------------------------|--|
| Ammonium Dichromate 7789-09-5 | 0.05 mg/m ³ TWA (as Cr) | 0.05 mg/m ³ TWA 0.5 mg/m ³ TWA LMPE-PPT |

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation, especially in confined areas. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles.
- Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.
- Respiratory protection:** Be sure to use an approved/certified respirator or equivalent.. Wear respirator with dust filter.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|--|--|
| Physical state: Solid. | Appearance: Crystalline powder. Crystals. | Color: Orange. Red. |
| Odor: Odorless. | Taste No information available | Formula: (NH ₄) ₂ CrO ₇ |
| Molecular/Formula weight: 252.10 g/mol | Flammability: Oxidizer | Flash point (°C): No data available |
| Flashpoint (°C/°F): No information available. | Flash Point Tested according to: Not available | Autoignition Temperature (°C/°F): 190-225°C/374-437°F 218°C/424°F |
| Lower Explosion Limit (%): No information available | Upper Explosion Limit (%): No information available | pH: 3.95 (1%) 3.45 (10%) |
| Melting point/range(°C/°F): 170°C/338°F | Boiling point/range(°C/°F): No information available | Decomposition temperature(°C/°F): 180°C/356°F |
| Bulk density: 1000 kg/m ³ | Density (g/cm³): 2.15 | Specific gravity: No information available |
| Vapor pressure @ 20°C (kPa): No information available | Evaporation rate: No information available | Vapor density: 8.7 |
| VOC content (g/L): No information available | Odor threshold (ppm): No information available | Partition coefficient (n-octanol/water): No information available |
| Viscosity: No information available | Miscibility: No information available | Solubility: Soluble in Water Soluble in Alcohol Insoluble in Acetone |

10. STABILITY AND REACTIVITY

Reactivity

Oxidizer. Reacts with reducing agents, organic material, combustible materials, and powdered metals
Incompatible with strong bases, hydrazine, carbide, acids, alcohols, ethylene glycol, and mercury cyanide

Chemical stability

Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Avoid dust formation. Contact with combustible materials (wood, paper, oil, clothing, etc.). Incompatible materials.

Incompatible Materials: Organic materials. Combustible materials. Powdered metals. Reducing agents. Acids. Hydrazine. Strong bases. Carbides. Alcohols. Ethylene glycol. Mercury cyanide.

Hazardous decomposition products: Ammonia. Chromium oxides. Nitrogen oxides (NO_x).

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation. Skin. Eyes.

Acute Toxicity

Component Information

Ammonium Dichromate - 7789-09-5

LD50/oral/rat = 48 mg/kg Oral LD50 Rat
80 mg/kg oral LD50 rat
53 mg/kg oral LD50 rat

LD50/oral/mouse = No information available

LD50/dermal/rat = No information available

LD50/dermal/rabbit = 1640 mg/kg Dermal LD50 Rabbit
1860 mg/kg dermal LD50 rabbit

LC50/inhalation/rat = 0.156 mg/L Inhalation LC50 Rat 4 h
0.2 mg/L inhalation LC50 rat 4h

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 48mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = 1640mg/kg

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = 0.156mg/l (4-hr.)

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Harmful if absorbed through skin. Causes severe irritation and burns. May cause deep penetrating ulcers of the skin. May cause allergic skin reaction.

Eye Contact: Causes severe irritation and burns. Causes serious eye damage.. Eye contact may cause eye corrosion or ulceration.

Product code: A1178

Product name: AMMONIUM
DICHROMATE, CRYSTAL, REAGENT

8 / 15

Inhalation Fatal if inhaled. May cause irritation of the respiratory tract and mucous membranes irritation. May cause nose, throat, and lung irritation. May cause chemical burns to the respiratory tract.

Ingestion Toxic if swallowed. May cause digestive (gastrointestinal) tract irritation. May affect the blood. It may affect the kidneys and liver. Symptoms of acute poisoning may include ulceration and corrosion, epigastric pain, nausea, vomiting, diarrhea, vertigo, fever, muscle cramps, hemorrhagic diathesis, toxic nephritis, renal failure, intravascular hemolysis, circulatory collapse, liver damage, peripheral vascular collapse, acute multisystem shock and coma, death depending on the dose.

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Chronic poisoning usually results from inhalation or ingestion. May affect the lungs, blood, kidneys and liver. Signs and symptoms may include lacrimation, dermatitis, penetrating ulcers, perforation of nasal septum, asthma, pneumonia, pulmonary edema, congestion, chronic rhinitis, polyps of the upper respiratory tract, inflammation of the lung, emphysema, tracheitis, bronchitis, pharyngitis, adhesions of the diaphragm, inflammation of larynx, conjunctivitis, loss of appetite, nausea, vomiting, inflammation of liver or even acute hepatitis with jaundice, respiratory irritations, leukocytosis, leukopenia, monocytosis, and eosinophilia. Prolonged or repeated ingestion may cause allergic dermatitis. Repeated or prolonged skin contact may cause skin sensitization. Prolonged or repeated inhalation may cause respiratory sensitization. Inhalation: May cause allergic respiratory reaction (occupational asthma).

Sensitization: May cause sensitization by inhalation and skin contact

Mutagenic Effects: May affect genetic material

Carcinogenic effects: Carcinogenic.

| Components | IARC | ACGIH - Carcinogens | NTP | OSHA HCS - Carcinogens | Australia - Notifiable Carcinogenic Substances | Australia - Prohibited Carcinogenic Substances |
|---------------------|--|-------------------------------|------------------------|------------------------------|--|--|
| Ammonium Dichromate | Group 1 - Carcinogenic to humans - Monograph 49 [1990] Chromium[VI] Supplement 7 [1987] Monograph 23 [1980] Monograph 2 [1973] Monograph 100C [2012] | A1 Confirmed Human Carcinogen | Known Human Carcinogen | Present see 29 CFR 1910.1026 | Not listed | Not listed |

Reproductive toxicity May damage fertility or the unborn child

Reproductive Effects: Causes adverse reproductive effects
May impair fertility

Developmental Effects: May cause adverse developmental effects

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.
Target Organs: Liver. Kidneys. Respiratory system. Lungs.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Ammonium Dichromate - 7789-09-5

Freshwater Fish Species Data: 136 mg/L LC50 96h
212 mg/L LC50 Mosquito fish 48h
50 mg/L LC50 Leuciscus idus (Golden orfe) 48h

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal. Do not re-use empty containers Dispose of as unused product.

| Components | RCRA - F Series Wastes | RCRA - K Series Wastes | RCRA - P Series Wastes | RCRA - U Series Wastes |
|---------------------|------------------------|------------------------|------------------------|------------------------|
| Ammonium Dichromate | None | None | None | None |

14. TRANSPORT INFORMATION

DOT

UN-No: UN1439
Proper Shipping Name: Ammonium dichromate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
ERG No: 141
Marine Pollutant No data available
DOT RQ (lbs): No information available
Symbol(s): R2

14. TRANSPORT INFORMATION

TDG (Canada)

UN-No: UN1439
Proper Shipping Name: Ammonium dichromate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

ADR

UN-No: UN1439
Proper Shipping Name: Ammonium dichromate
Hazard Class: 5.1
Packing Group: II
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1439
Proper Shipping Name: Ammonium dichromate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-H
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1439
Proper Shipping Name: Ammonium dichromate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1439
Proper Shipping Name: Ammonium dichromate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

IATA

UN-No: UN1439
Proper Shipping Name: Ammonium dichromate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 5L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

| Components | U.S. TSCA | KOREA KECL | Philippines (PICCS) | Japan ENCS | CHINA | Australia (AICS) | EINECS-No. |
|----------------------------|-----------|------------------|---------------------|-----------------|---------|------------------|-------------------|
| <i>Ammonium Dichromate</i> | Present | Present KE-01653 | Present | Present (1)-273 | Present | Present | Present 232-143-1 |

U.S. Regulations

Ammonium Dichromate

Massachusetts RTK: Present

New Jersey RTK Hazardous Substance List: 0097

3575

2245

New Jersey (EHS) List: 2245 500 lb TPQ

New Jersey - Discharge Prevention - List of Hazardous Substances: Present

Pennsylvania RTK: Environmental hazard

Pennsylvania RTK - Environmental Hazard List Present

Pennsylvania RTK - Special Hazardous Substances Present

Minnesota - Hazardous Substance List: Carcinogen (as Cr)

New York Release Reporting - List of Hazardous Substances:

10 lb RQ

Louisiana Reportable Quantity List for Pollutants: 10lbfinal RQ

4.54kgfinal RQ

California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm (See table below)

| Components | Carcinogen | Developmental Toxicity | Male Reproductive Toxicity | Female Reproductive Toxicity: |
|----------------------------|------------|------------------------|----------------------------|-------------------------------|
| <i>Ammonium Dichromate</i> | carcinogen | developmental toxicity | male reproductive toxicity | female reproductive toxicity |

CERCLA/SARA

| Components | CERCLA - Hazardous Substances and their Reportable Quantities | Section 302 Extremely Hazardous Substances and TPQs | Section 302 Extremely Hazardous Substances and RQs | Section 313 - Chemical Category | Section 313 - Reporting <i>de minimis</i> |
|----------------------------|---|---|--|---------------------------------|---|
| <i>Ammonium Dichromate</i> | 10 lb final RQ 4.54 kg final RQ | None | None | None | 0.1% de minimis concentration |

U.S. TSCA

| Components | TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS) | TSCA 8(d) -Health and Safety Reporting |
|----------------------------|---|--|
| <i>Ammonium Dichromate</i> | Not Applicable | Not Applicable |

Canada

WHMIS hazard class:

C Oxidizing materials

D1A Very toxic materials

D2A Very toxic materials

D2B Toxic materials

Product code: A1178

Product name: AMMONIUM
DICHROMATE, CRYSTAL, REAGENT

12 / 15

Ammonium Dichromate
C D1A D2A D2B

Canada Controlled Products Regulation:

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

| Components | WHMIS Ingredient Disclosure List - |
|---------------------|------------------------------------|
| Ammonium Dichromate | 1 % |

Inventory

| Components | Canada (DSL) | Canada (NDSL) |
|---------------------|--------------|---------------|
| Ammonium Dichromate | Present | Not Listed |

| Components | CEPA Schedule I - Toxic Substances | CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting |
|---------------------|------------------------------------|---|
| Ammonium Dichromate | Present | Not listed |

EU Classification

R-phrase(s)

- R 2 - Risk of explosion by shock, friction, fire or other sources of ignition.
- R 8 - Contact with combustible material may cause fire.
- R21 - Harmful in contact with skin.
- R25 - Toxic if swallowed.
- R26 - Very toxic by inhalation.
- R34 - Causes burns.
- R45 - May cause cancer.
- R46 - May cause heritable genetic damage.
- R50 - Very toxic to aquatic organisms.
- R53 - May cause long-term adverse effects in the aquatic environment.
- R60 - May impair fertility.
- R61 - May cause harm to the unborn child.
- R48/23 - Toxic: danger of serious damage to health by prolonged exposure through inhalation.
- R42/43 - May cause sensitization by inhalation and skin contact.

S -phrase(s)

- S53 - Avoid exposure - obtain special instructions before use.
- S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S60 - This material and its container must be disposed of as hazardous waste.
- S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.
- S 1/2 - Keep locked up and out of the reach of children.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
- S 7/9 - Keep container tightly closed and in a well-ventilated place.

| Components | Classification | Concentration Limits: | Safety Phrases |
|------------|----------------|-----------------------|----------------|
|------------|----------------|-----------------------|----------------|

| | | | |
|---------------------|---|--|-----------------|
| Ammonium Dichromate | E; R2 Xn; R21 T; R25-48/23 T+; R26 C; R34 R42/43 Carc.Cat.2; R45 Muta.Cat.2; R46 N; R50-53 Repr.Cat.2; R60-61 O; R8 | 10%≤C: C; R24 5%≤C<10%: Xi; R36/37/38 0.2%≤C: R42/23 | S53 S45 S60 S61 |
|---------------------|---|--|-----------------|

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

E - Explosive.

C - Corrosive.

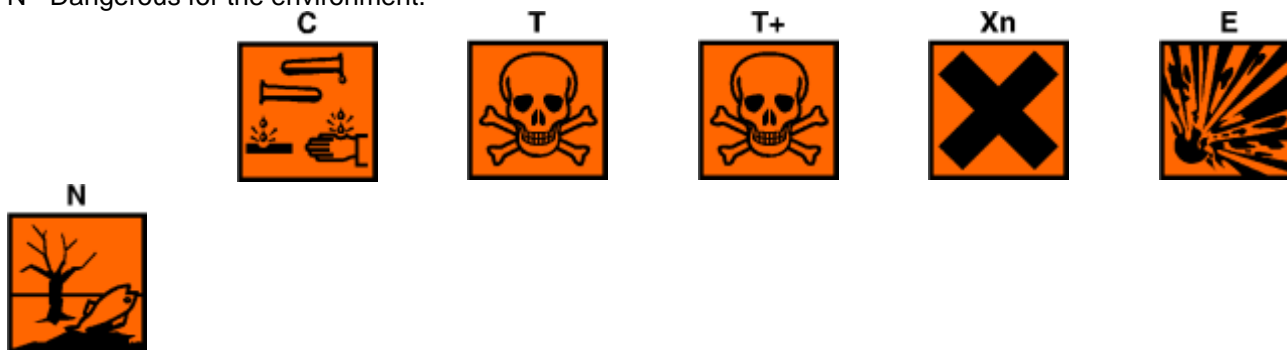
T+ - Very toxic.

T - Toxic

Xn - Harmful.

O - Oxidising.

N - Dangerous for the environment.



16. OTHER INFORMATION

16. OTHER INFORMATION

Preparation Date: 8/20/2015
Revision Date: 8/20/2015
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet