

## SAFETY DATA SHEET

Preparation Date: 11/17/2016

Revision Date: 11/17/2016

Revision Number: G1

### 1. IDENTIFICATION

#### Product identifier

**Product code:** C1250  
**Product Name:** CHROMIUM NITRATE, CRYSTAL, REAGENT

#### Other means of identification

**Synonyms:** Chromic nitrate nonahydrate  
 Chromium trinitrate nonahydrate  
 Nitric acid, Chromium salt, nonahydrate  
**CAS #:** 7789-02-8  
**RTECS #** GB6300000  
**CI#:** Not available

#### Recommended use of the chemical and restrictions on use

**Recommended use:** For manufacturing or laboratory use only.  
**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 according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Oxidizing solids	Category 3

#### Label elements

##### **Warning**

##### **Hazard statements**

May be harmful if swallowed  
 Causes skin irritation  
 Causes serious eye irritation  
 May intensify fire; oxidizer

**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

May be harmful if swallowed

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Keep/Store away from clothing and other combustible materials  
Take any precaution to avoid mixing with combustibles  
Wear protective gloves  
Wear eye/face protection

**Precautionary Statements - Response**

IN CASE OF FIRE: Use water to extinguish. Do not use dry chemicals or foams. CO<sub>2</sub> 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. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash it before reuse

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS-No.	Weight %
Chromium Nitrate nonahydrate	7789-02-8	100

**4. FIRST AID MEASURES****First aid measures****General Advice:**

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

**Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

**Eye Contact:**

Flush eyes with water for 15 minutes. Get medical attention. If symptoms persist, call a physician.

**Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

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

**Symptoms** Causes serious eye irritation. Causes skin irritation. May be harmful if swallowed. Exposure to nitrites/nitrates can cause gastroenteritis, abdominal pain, nausea, vomiting, diarrhea, metabolic acidosis, purging, methemoglobinemia, cyanosis, muscle weakness, dizziness, lightheadedness, loss of coordination, fatigue, headache, seizures, convulsions, dyspnea, dysrhythmias, coma, and death. Can affect the liver, metabolism (weight loss), blood (methemoglobinemia), cardiovascular system (bradycardia/tachycardia, hypotension, vasodilation, irregular heartbeat), kidneys.

### **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:** Dry chemical. Foam. Halons.

### **Specific hazards arising from the chemical**

**Hazardous Combustion Products:** Chromium oxides, Nitrogen oxides

**Hazardous Combustion Products:** No information available.

**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. Contact with finely divided (powdered) metals may cause ignition (fire) or explosion. 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:** Water mist may be used to cool closed containers. For large fires, flood fire area with water from a distance. 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:** Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition. Avoid dust formation. Keep combustibles (wood, paper, oil, clothing, etc.) away from spilled material.

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

### 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 into suitable containers for disposal. 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 incompatible materials.

#### **Safe Handling Advice**

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Use only in well-ventilated areas. Do not ingest. Do not breathe dust. Keep away from heat and sources of ignition. Keep away from combustible material. 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:**

Reducing agents  
Combustible materials  
Organic materials

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### **National occupational exposure limits**

##### **United States**

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Chromium Nitrate nonahydrate	7789-02-8	0.5 mg/m <sup>3</sup> TWA (as Cr)	0.5 mg/m <sup>3</sup> TWA (as Cr)	0.5 mg/m <sup>3</sup> TWA (as Cr)	None

##### **Canada**

**Product code:** C1250

**Product name:** CHROMIUM  
NITRATE, CRYSTAL, REAGENT

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Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Chromium Nitrate nonahydrate	7789-02-8	0.5 mg/m <sup>3</sup> TWA (as Cr)	0.5 mg/m <sup>3</sup> TWA (as Cr)	0.5 mg/m <sup>3</sup> TWA (as Cr)	0.5 mg/m <sup>3</sup> TWAEV (as Cr)

### Australia and Mexico

Components	CAS-No.	Australia	Mexico
Chromium Nitrate nonahydrate	7789-02-8	0.5 mg/m <sup>3</sup> TWA (as Cr)	0.5 mg/m <sup>3</sup> TWA

### 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 or Safety glasses with side-shields
- Skin and body protection:** Gloves. Long sleeved clothing. Chemical resistant apron.
- Respiratory protection:** Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Solid	<b>Appearance:</b> Crystals.	<b>Color:</b> Dark purple.
<b>Odor:</b> Slight nitric.	<b>Taste</b> No information available.	<b>Formula:</b> Cr(NO <sub>3</sub> ) <sub>3</sub> .9H <sub>2</sub> O
<b>Molecular/Formula weight:</b> 400.15 g/mol	<b>Flammability:</b> No information available	<b>Flashpoint (°C/°F):</b> No information available.
<b>Flash Point Tested according to:</b> Not available	<b>Autoignition Temperature (°C/°F):</b> No information available	<b>Lower Explosion Limit (%):</b> No information available
<b>Upper Explosion Limit (%):</b> No information available	<b>Melting point/range(°C/°F):</b> 60°C/140°F	<b>Decomposition temperature(°C/°F):</b> 100°C/212°F
<b>Boiling point/range(°C/°F):</b> No information available	<b>Bulk density:</b> No information available	<b>Density (g/cm<sup>3</sup>):</b> 1.85

**Specific gravity:**  
No information available

**pH:**  
No information available

**Vapor pressure @ 20°C (kPa):**  
No information available

**Evaporation rate:**  
No information available

**Vapor density:**  
No information available

**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 Alcohol  
Soluble in Water

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactive with organic materials  
Can react vigorously on contact with reducing materials  
Contact with combustible materials (wood, paper, oil, clothing, etc.) may cause fire

### Chemical stability

**Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur  
May release toxic and/or corrosive fumes

**Conditions to avoid:** Avoid dust formation. Contact with combustible materials (wood, paper, oil, clothing, etc.). Contact with finely divided (powdered) metals. Heat, flames and sparks. Incompatible materials.

**Incompatible Materials:** Reducing agents  
Combustible materials  
Organic materials

**Hazardous decomposition products:** Chromium oxides. Nitrogen oxides (NO<sub>x</sub>).

### 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.

### Acute Toxicity

### Component Information

Chromium Nitrate nonahydrate

CAS-No. 7789-02-8

LD50/oral/rat = 3250 mg/kg Oral LD50 Rat  
LD50/oral/mouse = 2976 mg/kg oral LD50 mouse  
LD50/dermal/rabbit = No information available  
LD50/dermal/rat = No information available  
LC50/inhalation/rat = No information available  
LC50/inhalation/mouse = No information available  
Other LD50 or LC50 information = No information available

## Product Information

LD50/oral/rat =  
VALUE- Acute Tox Oral = 3250 mg/kg

LD50/oral/mouse =  
Value - Acute Tox Oral = 2976 mg/kg

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

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 = No information available

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

## Symptoms

**Skin Contact:** Causes skin irritation. May cause burning sensation, itching, redness.

**Eye Contact:** Causes serious eye irritation. May cause itching, burning, and swelling of the eyes.

**Inhalation** May cause irritation of the mucous membranes and upper respiratory tract. Symptoms may include wheezing, cough, chest tightness, and shortness of breath. May also cause nausea, vomiting, diarrhea, abdominal pain. Inhalation of high levels of nitrites/nitrates may also cause pulmonary edema. It can also interfere with the ability of the blood to carry oxygen causing headache, dizziness and a blue color to the skin and lips (methemoglobinemia), and other symptoms of methemoglobinemia (see other symptoms under ingestion). Higher levels can cause trouble breathing, circulatory collapse and even death.

**Ingestion** May be harmful if swallowed. Nitrates themselves are not toxic in the amounts we normally encounter. The acute toxicity of nitrates is a result of their conversion into nitrites within the body. Clinical signs associated with nitrate poisoning include: Gastroenteritis, abdominal pain, nausea, vomiting, colic, diarrhea, metabolic acidosis, muscular weakness, fatigue, dizziness, vertigo, syncope, unconsciousness, persistent throbbing headache, mental impairment, incoordination, stupor, dyspnea, and in severe cases, methemoglobinemia (conversion of hemoglobin to methemoglobin causing inadequate oxygenation of the blood leading to progressive cyanosis, hypoxia, anoxia, and coma. Cyanosis is first visible as a bluish discoloration of the mucous membranes and

unpigmented areas of the body. Cardiovascular symptoms such as accelerated heart rate, heart palpitations, orthostatic hypotension, cardiac arrhythmias, heart murmurs can also occur. May cause digestive (gastrointestinal) tract irritation. May affect urinary system (kidneys). May affect liver.

**Aspiration hazard** No information available.

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

**Chronic Toxicity** Prolonged or repeated contact may cause skin allergy. Prolonged or repeated ingestion may affect the liver, and kidneys. Prolonged or repeated ingestion may cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, shortness of breath, cyanosis (a bluish discoloration of the skin, lips, nails due to deficient oxygenation of the blood), rapid heart rate, unconsciousness. Ingestion: The toxicity of nitrates is due to in vivo conversion to nitrites. Chronic ingestion of more than 5 mg/kg/day is considered unacceptable. Primary overdose effects include orthostatic hypotension and Methemoglobinemia. Orthostatic hypotension, faintness, fatigue, weakness, depression, mental impairment, dizziness, shortness of breath, and reflex tachycardia are common; headache, nausea and vomiting may also occur. Chronic ingestion may also cause nephritis.

**Sensitization:** No information available.

**Mutagenic Effects:** Mutagenic effects in mammalian somatic cells  
Experiments with bacteria and/or yeast have shown mutagenic effects

**Carcinogenic effects:** IARC group 2A - Listed under Nitrate or Nitrite (ingested) under conditions that result in endogenous nitrosation.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Chromium Nitrate nonahydrate	7789-02-8	Monograph 94 [2010] Monograph 49 [1990] Supplement 7 [1987]	Present	Not listed	Present	Not listed	Not listed

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*NTP (National Toxicology Program)*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available  
**Developmental Effects:** No information available  
**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available.  
**STOT - repeated exposure** No information available.  
**Target Organs:** Liver. Kidneys. Blood. Skin.



## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Ecotoxicity effects:** No data available.

**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	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Chromium Nitrate nonahydrate	7789-02-8	None	None	None	None

## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** UN2720  
**Proper Shipping Name:** Chromium nitrate  
**Hazard Class:** 5.1  
**Subsidiary Class** No information available  
**Packing group:** III  
**Emergency Response Guide Number** 141  
**Marine Pollutant** No data available  
**DOT RQ (lbs):** No information available  
**Special Provisions** A1, A29, IB8, IP3, T1, TP33  
**Symbol(s):** No information available  
**Description:** UN2720, Chromium nitrate, 5.1, III

### TDG (Canada)

**UN-No:** UN2720  
**Proper Shipping Name:** Chromium nitrate  
**Hazard Class:** 5.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Marine Pollutant** No Information available  
**Description:** UN2720, Chromium nitrate, 5.1, III

### ADR

**UN-No:** UN2720

**Product code:** C1250

**Product name:** CHROMIUM  
NITRATE, CRYSTAL, REAGENT

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**Proper Shipping Name:** Chromium nitrate  
**Hazard Class:** 5.1  
**Packing Group:** III  
**Subsidiary Risk:** No information available  
**Description:** UN2720, Chromium nitrate, 5.1, III

**IMO / IMDG**

**UN-No:** UN2720  
**Proper Shipping Name:** Chromium nitrate  
**Hazard Class:** 5.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Marine Pollutant:** No information available  
**EMS:** F-A  
**Description:** UN2720, Chromium nitrate, 5.1, III

**RID**

**UN-No:** UN2720  
**Proper Shipping Name:** Chromium nitrate  
**Hazard Class:** 5.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** UN2720, Chromium nitrate, 5.1, III

**ICAO**

**UN-No:** UN2720  
**Proper Shipping Name:** Chromium nitrate  
**Hazard Class:** 5.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** UN2720, Chromium nitrate, 5.1, III

**IATA**

**UN-No:** UN2720  
**Proper Shipping Name:** Chromium nitrate  
**Hazard Class:** 5.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**ERG Code:** 5L  
**Special Provisions:** No information available  
**Description:** UN2720, Chromium nitrate, 5.1, III

<b>15. REGULATORY INFORMATION</b>
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**International Inventories**

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Chromium Nitrate nonahydrate</i>	7789-02-8	Not Listed	Not present	Not present	Present (1)-281	Present	Present	Not present

**U.S. Regulations**

*Chromium Nitrate nonahydrate*

**New Jersey RTK Hazardous Substance List:** 2245 (as chromium compounds)  
 3722 (as nitrate compounds)  
 2870 (as chromium(III) compounds)  
**New Jersey (EHS) List:** 2245 500 lb TPQ (as chromium compounds)  
 3722 500 lb TPQ (as nitrate compounds)

**New Jersey - Discharge Prevention - List of Hazardous Substances:** Present (as chromium compounds and as nitrate compounds)  
**Pennsylvania RTK:** Environmental Hazard (chromium compounds)  
**Pennsylvania RTK - Environmental Hazard List** Present  
**Minnesota - Hazardous Substance List:** Present as Chromium (III) compounds (as Cr)  
**California Directors List of Hazardous Substances:** Present (as Chromium compounds)

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

**Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

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

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Chromium Nitrate nonahydrate	7789-02-8	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Components	CAS-No.	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 de minimis
Chromium Nitrate nonahydrate	7789-02-8	None	None	None	Chromium (III) compounds	1.0% de minimis concentration

**U.S. TSCA**

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Chromium Nitrate nonahydrate	7789-02-8	Not Applicable	Not Applicable

**Canada**

**WHMIS hazard class:**

C Oxidizing materials

**Components**

Chromium Nitrate nonahydrate

**WHIMHAZ**

C

**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 -
Chromium Nitrate nonahydrate	1%

**Inventory**

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Chromium Nitrate nonahydrate	7789-02-8	Not Listed	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Chromium Nitrate nonahydrate	7789-02-8	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Chromium Nitrate nonahydrate	7789-02-8	Not listed

**EU Classification**

**R-phrase(s)**

R 8 - Contact with combustible material may cause fire.

R36/38 - Irritating to eyes and skin.

**S -phrase(s)**

S17 - Keep away from combustible material.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S24/25 - Avoid contact with skin and eyes.

S37/39 - Wear suitable gloves and eye/face protection.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Chromium Nitrate nonahydrate	7789-02-8		No information	

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

**Indication of danger:**

None.

**16. OTHER INFORMATION**

**Preparation Date:** 11/17/2016  
**Revision Date:** 11/17/2016  
**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**