

SAFETY DATA SHEET

Preparation Date: 11/17/2016

Revision Date: 11/17/2016

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: C1251
Product Name: CHROMIUM NITRATE, TECHNICAL

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. 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. 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 ³ TWA (as Cr)	0.5 mg/m ³ TWA (as Cr)	0.5 mg/m ³ TWA (as Cr)	None

Canada

Product code: C1251

Product name: CHROMIUM
NITRATE, TECHNICAL

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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 ³ TWA (as Cr)	0.5 mg/m ³ TWA (as Cr)	0.5 mg/m ³ TWA (as Cr)	0.5 mg/m ³ TWAEV (as Cr)

Australia and Mexico

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

Physical state: Solid	Appearance: Crystals.	Color: Dark purple.
Odor: Slight nitric.	Taste No information available.	Formula: Cr(NO ₃) ₃ .9H ₂ O
Molecular/Formula weight: 400.15 g/mol	Flammability: No information available	Flashpoint (°C/°F): No information available.
Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Melting point/range(°C/°F): 60°C/140°F	Decomposition temperature(°C/°F): 100°C/212°F
Boiling point/range(°C/°F): No information available	Bulk density: No information available	Density (g/cm³): 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_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.

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

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

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Chromium Nitrate nonahydrate	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