

MATERIAL SAFETY DATA SHEET**Product Name:** Ammonium dichromate**CAS No.:** 7789-09-5**Version:** 0**1. Identification**

Product Code : 90326
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2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
AMMONIUM DICHROMATE	7789-09-5	99-100%

3. Hazards Identification

Emergency Overview : DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE A FIRE. CORROSIVE. CAUSES SEVERE BURNS TO EVERY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED. AFFECTS THE RESPIRATORY SYSTEM, LIVER, KIDNEYS, EYES, SKIN AND BLOOD. MAY CAUSE ALLERGIC REACTION. CANCER HAZARD. CAN CAUSE CANCER. Risk of cancer depends on duration and level of exposure

Health Rating : 4 - Extreme (Cancer Causing)
Flammability Rating : 1 - Slight
Reactivity Rating : 3- Severe (Oxidizer)
Contact Rating : 3 - Severe (Life).

Potential Health Effects

Inhalation : Corrosive. Extremely destructive to tissues of the mucous membranes and upper respiratory tract. May cause ulceration and perforation of the nasal septum. Symptoms may include sore throat, coughing, shortness of breath, and labored breathing. May produce pulmonary sensitization or allergic asthma. Higher exposures may cause pulmonary edema.

Ingestion : Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach, leading to death. Can cause sore throat, vomiting, diarrhea. May cause violent gastroenteritis, peripheral vascular collapse, dizziness, intense thirst, muscle cramps, shock, coma, abnormal bleeding, fever, liver damage and acute renal failure.

Skin Contact : Corrosive. Symptoms of redness, pain, and severe burn can occur. Dusts and strong solutions may cause severe irritation. Contact with broken skin may cause ulcers (chrome sores) and absorption, which

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- may cause systemic poisoning, affecting kidney and liver functions. May cause skin sensitization.
- Eye Contact** : Corrosive. Contact can cause blurred vision, redness, pain and severe tissue burns. May cause corneal injury or blindness.
- Chronic Exposure** : Repeated or prolonged exposure can cause ulceration and perforation of the nasal septum, respiratory irritation, liver and kidney damage and ulceration of the skin. Ulcerations at first may be painless, but may penetrate to the bone producing "chrome holes." Known to be a human carcinogen.
- Aggravation of Pre-existing Conditions** : Persons with pre-existing skin disorders, asthma, allergies or known sensitization to chromic acid or chromates may be more susceptible to the effects of this material.

4. First Aid Measures

- General information** : Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Show this safety data sheet to the doctor in attendance.
- Inhalation** : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
- Ingestion** : If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Skin Contact** : Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

5. Fire fighting measures

- Fire** : Autoignition temperature: 225C (437F). Combustible solid. Fire is possible at temperatures above decomposition 180C (356F) or by contact with an ignition source. Decomposition is self-sustaining above 225C (437F) with swelling, release of heat and nitrogen gas and residue of green chromic oxide.
- Explosion** : Contact with oxidizable substances may cause extremely violent combustion. Closed containers exposed to heat may explode
- Fire Extinguishing Media:** : Use flooding amounts of water. Do not use dry chemical, carbon dioxide or Halon. Water spray may be used to keep fire exposed containers cool. Do not allow water runoff to enter sewers or waterways.

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Special Information : In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures : Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up : Sweep up and place in a clearly labeled container for chemical waste.
Clean surface thoroughly to remove residual contamination.

Notification Procedures : Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental precautions : Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and Storage

Precautions for safe handling : Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Avoid inhalation of dust. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities : Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place.

8. Exposure Controls Personal Protection**Control parameters****Occupational exposure limits**

OSHA Permissible Exposure Limit (PEL) : For chromic acid and chromates, as CrO₃ = 0.1 mg/m³ (ceiling)

ACGIH Threshold Limit Value (TLV) : For water-soluble Cr(VI) compounds, as Cr = 0.05 mg/m³ (TWA), A1 - confirmed human carcinogen

Ventilation System : A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

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- Personal Respirators (NIOSH Approved):** : If the exposure limit is exceeded and engineering controls are not feasible, a half face piece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerin, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres
- Skin Protection** : Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. (Natural rubber).
- Eye Protection:** : Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.
- Other** : Wear suitable protective clothing.
- Respiratory protection** : In case of inadequate ventilation use suitable respirator.
- Hygiene measures** : Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

9. Physical and Chemical Properties

- Appearance** : Bright, orange-red crystals.
- Odor** : Odorless.
- pH** : 1% sol. = 3.95 10% sol. = 3.45
- Melting point/freezing point** : 180C (356F) Decomposes.
- Initial boiling point and boiling range** : No data available
- Flash Point** : No information found.
- Vapor pressure** : No information found.
- Vapor density** : 8.7
- Relative density** : 2.15
- Solubility in water** : 36.4 g/100 g water @ 20C (68F)
- Solubility (other)** : No data available.
- Formula** : $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$
- Molecular Weight** : 252.07 g/mol

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Reactivity	:	No dangerous reaction known under conditions of normal use .
Chemical stability	:	Stable under ordinary conditions of use and storage. Can react explosively when in contact with certain organic substances.
Possibility of hazardous reactions	:	Will not occur. Ammonia released due to decomposition forms flammable mixtures in air between 16% and 25%.
Conditions to avoid	:	Heat, flames, ignition sources and incompatibles.
Incompatible materials	:	Reducing agents, combustibles, organic materials, strong acids, alcohols, ethylene glycol, carbide, hydrazine, potassium chlorate, sodium nitrite and water. Avoid readily oxidizable substances, such as paper, wood, sulfur, aluminum, plastics, etc
Hazardous decomposition products	:	Burning may produce chrome oxides. Burning may produce ammonia, nitrogen oxides

11. Toxicological Information**Information on likely routes of exposure**

Ingestion	:	May cause irritation of the gastrointestinal tract.
Inhalation	:	May cause irritation to the respiratory system.
Skin contact	:	May cause irritation.
Eye contact	:	May cause temporary eye irritation.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral Product	:	No data recorded.
Dermal Product	:	No data available.
Inhalation Product	:	No data available.
Repeated dose toxicity Product	:	No data available.
Skin corrosion/irritation Product	:	May cause skin irritation.
Serious eye damage/eye irritation Product	:	May irritate eyes.
Respiratory or skin sensitization Product	:	Not a skin sensitizer.
Carcinogenicity Product	:	This substance has no evidence of carcinogenic properties.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans DIOXANE	:	No carcinogenic components identified.
US. National Toxicology Program (NTP) Report on Carcinogens DIOXANE	:	No carcinogenic components identified.
US. OSHA Specifically Regulated	:	No carcinogenic components identified.

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Substances (29 CFR 1910.1001-1050

Investigated as a tumorigen and mutagen.

- Reproductive toxicity Product** : No components toxic to reproduction.
- Specific target organ toxicity - single exposure Product** : No data available.
- Specific target organ toxicity - repeated exposure Product** : No data available.
- Aspiration hazard Product** : Not classified.
- Other effects** : None known.

12. Ecological Information

- Environmental Fate** : When released into the soil, this material may leach into groundwater. When released into water, this material is not expected to evaporate significantly. This material may bioaccumulate to some extent. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition
- Environmental Toxicity** : This material is expected to be toxic to aquatic life.

13. Disposal consideration

- Disposal instructions** : Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
- Contaminated packaging** : Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT	UN1439	AMMONIUM DICHROMATE	5.1	II	No
IMDG	UN1439	AMMONIUM DICHROMATE	5.1	II	No
IATA	UN1439	AMMONIUM DICHROMATE	5.1	II	No

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This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. Other Information**Issue Date :**01/08/2014**Version : 0**

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