

Material Safety Data Sheet

Ammonium meta-vanadate

ACC# 01470

Section 1 - Chemical Product and Company Identification

MSDS Name: Ammonium meta-vanadate

Catalog Numbers: AC194910000, AC194910500, AC194912500, A713-500, A714-500

Synonyms: Ammonium vanadate; Vanadic acid ammonium salt; Ammonium trioxovanadate

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7803-55-6	Ammonium meta-vanadate	ca. 100	232-261-3

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: slightly yellow crystalline powder.

Danger! May be fatal if inhaled. Harmful if swallowed. Causes eye and skin irritation. May cause allergic skin reaction. Causes digestive and respiratory tract irritation. May cause blood abnormalities. Hygroscopic (absorbs moisture from the air).

Target Organs: Respiratory system, red blood cells, eyes, skin.

Potential Health Effects

Eye: Contact produces irritation, tearing, and burning pain. May cause conjunctivitis.

Skin: Causes skin irritation.

Ingestion: Harmful if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. Vanadium compounds can cause polycythemia (an increase in the total red cell mass of the blood), followed by red blood cell destruction, anemia, loss of appetite, pallor, and emaciation. May cause greenish-black tongue discoloration due to deposition of vanadium salts.

Inhalation: May be fatal if inhaled. Causes upper respiratory tract irritation. Causes irritation of the mucous membrane. Inhalation may cause sore throat, shortness of breath, labored breathing, coughing, and pulmonary edema.

Chronic: Repeated exposure may cause sensitization dermatitis. Chronic exposure may cause a greenish tongue, metallic taste, cough, chronic bronchitis, and emphysema. Material is a potent enzyme inhibitor. Effects may be delayed. Laboratory experiments have resulted in mutagenic effects. May produce scattered allergy-like eczematous skin lesions symptomatic of vanadium toxicity.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Green coloration of the tongue, resulting from the deposition of vanadium salts is an indicator of exposure; however, may be absent even in prolonged exposure.. Treat symptomatically and supportively. Effects may be delayed.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion. Contact with metals may evolve flammable hydrogen gas.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Use water spray to disperse the gas/vapor. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Keep away from heat, sparks, and flame. Do not store near combustible materials. Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ammonium meta-vanadate	none listed	none listed	none listed

OSHA Vacated PELs: Ammonium meta-vanadate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystalline powder

Appearance: white - slightly yellow

Odor: Not available.

pH: Not available.

Vapor Pressure: Negligible.

Vapor Density: Not available.

Evaporation Rate: Negligible.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 200 deg C

Decomposition Temperature: 200 deg C

Solubility: 6.2 g/l (15 c)

Specific Gravity/Density: 2.3260g/cm³

Molecular Formula: H₄NO₃V

Molecular Weight: 116.98

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation, exposure to moist air or water, excess light.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, moisture.

Hazardous Decomposition Products: Oxides of nitrogen, irritating and toxic fumes and gases, vanadium oxide (VO_x) gases, ammonia.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 7803-55-6: YW0875000

LD50/LC50:

CAS# 7803-55-6:

Inhalation, rat: LC50 = 7800 ug/m³/4H;

Oral, mouse: LD50 = 25 mg/kg;

Oral, rat: LD50 = 58100 ug/kg;

Skin, rat: LD50 = 2102 mg/kg;

Carcinogenicity:

CAS# 7803-55-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: Intraperitoneal, hamster: TDLo = 22500 ug/kg (female 5-10 day(s) after conception) Effects on Newborn - sex ratio.; Intraperitoneal, hamster: TDLo = 2820 ug/kg (female 5-10 day(s) after conception) Specific Developmental Abnormalities - musculoskeletal system.

Reproductive Effects: Intraperitoneal, hamster: TDLo = 11280 ug/kg (female 5-10 day(s) after conception) Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) and Effects on Embryo or Fetus - fetal death.;

Mutagenicity: Micronucleus Test: Human, Lymphocyte = 10 umol/L; DNA Damage: Human, Lymphocyte = 200 umol/L; Sister Chromatid Exchange: Human, Lymphocyte = 40 umol/L; Sex Chromosome Loss and Nondisjunction: Human, Lymphocyte = 40 umol/L.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Goldfish: LC50 = 1.5 - 3.8; 144 Hr; Unspecified

Fish: Goldfish: LC50 = 1.5 - 3.8; 144 Hr; unspecified

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: CAS# 7803-55-6: waste number P119.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	AMMONIUM METAVANADATE	AMMONIUM METAVANADATE
Hazard Class:	6.1	6.1
UN Number:	UN2859	UN2859
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7803-55-6 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 7803-55-6: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 7803-55-6: immediate.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7803-55-6 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T

Risk Phrases:

R 25 Toxic if swallowed.

R 33 Danger of cumulative effects.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 22 Do not breathe dust.

S 24/25 Avoid contact with skin and eyes.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7803-55-6: No information available.

Canada - DSL/NDSL

CAS# 7803-55-6 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1A, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 7803-55-6 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 5/04/1999

Revision #3 Date: 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.