

## SAFETY DATA SHEET

Version 5.9  
Revision Date 08/09/2016  
Print Date 08/15/2016

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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Ammonium metavanadate  
Product Number : 205559  
Brand : Sigma-Aldrich  
CAS-No. : 7803-55-6

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 1), H330  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

H301 Toxic if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H330 Fatal if inhaled.  
H335 May cause respiratory irritation.

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.

P271	Use only outdoors or in a well-ventilated area.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves.
P284	Wear respiratory protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P310	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.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Synonyms : Ammonium trioxovanadate  
Ammonium (meta)vanadate

Formula :  $H_4NO_3V$   
Molecular weight : 116.98 g/mol  
CAS-No. : 7803-55-6  
EC-No. : 232-261-3

#### Hazardous components

Component	Classification	Concentration
<b>Ammonium trioxovanadate</b>		
	Acute Tox. 3; Acute Tox. 1; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H301, H315, H319, H330, H335	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

##### General advice

Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

##### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

##### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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### 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2 Special hazards arising from the substance or mixture

No data available

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4 Further information

No data available

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### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

#### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### 6.4 Reference to other sections

For disposal see section 13.

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### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Moisture sensitive.

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

##### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Ammonium trioxovanadate	7803-55-6	C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
	Remarks	15 minute ceiling value		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		

		C	0.05 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.05 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		

## 8.2 Exposure controls

### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |                                 |                   |
|---------------------------------|-------------------|
| a) Appearance                   | Form: solid       |
| b) Odour                        | No data available |
| c) Odour Threshold              | No data available |
| d) pH                           | No data available |
| e) Melting point/freezing point | No data available |

- |   |   |
|---|---|
| f) Initial boiling point and boiling range      | No data available                       |
| g) Flash point                                  | Not applicable                          |
| h) Evaporation rate                             | No data available                       |
| i) Flammability (solid, gas)                    | No data available                       |
| j) Upper/lower flammability or explosive limits | No data available                       |
| k) Vapour pressure                              | No data available                       |
| l) Vapour density                               | No data available                       |
| m) Relative density                             | 2.32 g/cm <sup>3</sup> at 25 °C (77 °F) |
| n) Water solubility                             | No data available                       |
| o) Partition coefficient: n-octanol/water       | No data available                       |
| p) Auto-ignition temperature                    | No data available                       |
| q) Decomposition temperature                    | No data available                       |
| r) Viscosity                                    | No data available                       |
| s) Explosive properties                         | No data available                       |
| t) Oxidizing properties                         | No data available                       |

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong acids and oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Borane/boron oxides, Vanadium/vanadium oxides  
 Other decomposition products - No data available  
 In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 58.1 mg/kg

LC50 Inhalation - Rat - 4 h - 7.8 µg/l

LD50 Dermal - Rat - 2,102 mg/kg

LD50 Intraperitoneal - Rat - 18 mg/kg

LD50 Subcutaneous - Rat - 23 mg/kg

**Skin corrosion/irritation**

Irritating to skin.

**Serious eye damage/eye irritation**

Irritating to eyes.

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

No data available

No data available

**Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: YW0875000

Headache, Tremors, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

No data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 2859      Class: 6.1      Packing group: II  
Proper shipping name: Ammonium metavanadate  
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

### IMDG

UN number: 2859      Class: 6.1      Packing group: II      EMS-No: F-A, S-A  
Proper shipping name: AMMONIUM METAVANADATE

### IATA

UN number: 2859      Class: 6.1      Packing group: II  
Proper shipping name: Ammonium metavanadate

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## 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Ammonium trioxovanadate	7803-55-6	1993-04-24

### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Ammonium trioxovanadate	7803-55-6	1993-04-24

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Ammonium trioxovanadate	7803-55-6	1993-04-24

### New Jersey Right To Know Components

	CAS-No.	Revision Date
Ammonium trioxovanadate	7803-55-6	1993-04-24

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.      Acute toxicity

Eye Irrit.	Eye irritation
H301	Toxic if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

**HMIS Rating**

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

**NFPA Rating**

Health hazard:	4
Fire Hazard:	0
Reactivity Hazard:	0

**Further information**

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**Preparation Information**

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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