

CID 24850

Aluminum Sulfate

Safety and Hazards



1.1 Hazards Identification



1.1.1 Hazard Classes and Categories



Corrosives

- ▶ [NJDOH RTK Hazardous Substance List](#)

1.1.2 Hazards Summary



A skin, eye, and respiratory tract irritant; [ICSC] The octadecahydrate is CAS # [7784-31-8](#); Aluminum sulfate anhydrous is a severe eye irritant in animal studies; [CHEMINFO] An irritant; May cause serious eye injury; [MSDSonline] See [Aluminum potassium sulfate dodecahydrate](#). See [Aluminum](#).

- ▶ [Haz-Map, Information on Hazardous Chemicals and Occupational Diseases](#)

1.1.3 Fire Potential



May burn, but will not ignite.

- ▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Certain polymerization catalysts, such as [aluminum](#) alkyls, react & burn violently on contact with [water](#). [/Aluminum alkyls/](#)

National Research Council. Prudent Practices for Handling Hazardous Chemicals in Laboratories. Washington, DC: National Academy Press, 1981., p. 221

- ▶ [Hazardous Substances Data Bank \(HSDB\)](#)

[Aluminum](#) alkyls are organic [aluminum](#) compounds that are highly reactive and dangerous because of spontaneous burning in air. [/Aluminum alkyls/](#)

Grant, W.M. Toxicology of the Eye. 3rd ed. Springfield, IL: Charles C. Thomas Publisher, 1986., p. 73

- ▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Prophoric material in flammable solvent. Vapors are heavier than air & may travel to a source of ignition & flash back. [/Aluminum alkyls/](#)

Fire Protection Guide to Hazardous Materials. 13 ed. Quincy, MA: National Fire Protection Association, 2002., p. 49-16

- ▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.1.4 Skin, Eye, and Respiratory Irritations



Dust /is/ irritating to eyes, nose, and throat. Solid /is/ irritating to skin and eyes.

U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Volume II. Washington, D.C.: U.S. Government Printing Office, 1984-5.

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

/Aluminum powder/ may cause minor irritation to lungs & eyes. /Aluminum powder, uncoated/

Fire Protection Guide to Hazardous Materials. 12 ed. Quincy, MA: National Fire Protection Association, 1997., p. 49-17

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Irritation of the eyes has been noted in patients who have been exposed /to aluminum alkyls/. /Aluminum alkyls/

Grant, W.M. Toxicology of the Eye. 3rd ed. Springfield, IL: Charles C. Thomas Publisher, 1986., p. 73

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

May cause minor irritation to lungs or eyes. /Aluminum (dust or powder)/

Fire Protection Guide to Hazardous Materials. 12 ed. Quincy, MA: National Fire Protection Association, 1997., p. 49-17

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.2 Safety and Hazard Properties



1.2.1 Explosive Limits and Potential



...Violently explosive when they come into contact with water. /Aluminum alkyls/

International Labour Office. Encyclopedia of Occupational Health and Safety. Vols. I&II. Geneva, Switzerland: International Labour Office, 1983., p. 422

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.2.2 OSHA Standards



Vacated 1989 OSHA PEL TWA 2 mg/cu m is still enforced in some states. /Aluminum, soluble salts & alkyls, as Al/

NIOSH. NIOSH Pocket Guide to Chemical Hazards. DHHS (NIOSH) Publication No. 97-140. Washington, D.C. U.S. Government Printing Office, 1997., p. 359

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.2.3 NIOSH Recommendations



Recommended Exposure Limit: 10-Hr Time-Weighted Avg: 10 mg/cu m (total). /Aluminum/

NIOSH. NIOSH Pocket Guide to Chemical Hazards & Other Databases CD-ROM. Department of Health & Human Services, Centers for Disease Prevention & Control. National Institute for Occupational Safety & Health. DHHS (NIOSH) Publication No. 2004-103 (2003).

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 5 mg/cu m (resp). /Aluminum/

NIOSH. NIOSH Pocket Guide to Chemical Hazards & Other Databases CD-ROM. Department of Health & Human Services, Centers for Disease Prevention & Control. National Institute for Occupational Safety & Health. DHHS (NIOSH) Publication No. 2004-103 (2003).

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 2 mg/cu m. /[Aluminum](#) (soluble salts and alkyls, as Al)/

NIOSH. NIOSH Pocket Guide to Chemical Hazards & Other Databases CD-ROM. Department of Health & Human Services, Centers for Disease Prevention & Control. National Institute for Occupational Safety & Health. DHHS (NIOSH) Publication No. 2004-103 (2003).

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 5 mg/cu m. /[Aluminum](#) (pyro powders and welding fumes, as Al)/

NIOSH. NIOSH Pocket Guide to Chemical Hazards & Other Databases CD-ROM. Department of Health & Human Services, Centers for Disease Prevention & Control. National Institute for Occupational Safety & Health. DHHS (NIOSH) Publication No. 2004-103 (2003).

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.3 Fire Fighting



1.3.1 Fire Fighting Procedures



If material involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.)

Association of American Railroads/Bureau of Explosives; Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads. Pueblo, CO. 2002., p. 53

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Stop flow of liquid before extinguishing fire. Use dry chemical or [carbon dioxide](#). DO NOT use [water](#) as straight stream directly on spilled material. [Water](#) fog can be used to control fire. DO NOT use halogenated extinguishing agents on spilled material. Violent reaction may result. Use [water](#) spray to keep fire-exposed containers cool. Fight fire from protected location or maximum possible distance. /[Aluminum](#) Alkyls/

Fire Protection Guide to Hazardous Materials. 13 ed. Quincy, MA: National Fire Protection Association, 2002., p. 49-17

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.4 Accidental Release Measures



1.4.1 Cleanup Methods



Environmental considerations: Land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. /SRP: If time permits, pits, ponds, lagoons, soak holes, or holding areas should be sealed with an impermeable flexible membrane liner./ Cover solids with a plastic sheet to prevent dissolving in rain or fire fighting [water](#).

Association of American Railroads/Bureau of Explosives; Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads. Pueblo, CO. 2002., p. 53

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Personnel protection: Keep upwind. ... Avoid breathing vapors or dusts. Wash away any material which may have

contacted the body with copious amounts of [water](#) or soap and [water](#).

Association of American Railroads/Bureau of Explosives; Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads. Pueblo, CO. 2002., p. 53

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Environmental considerations: [Water](#) spill: Neutralize with agricultural lime (CaO), crushed limestone (CaCO₃), or [sodium bicarbonate](#) (NaHCO₃). Use mechanical dredges or lifts to remove immobilized masses of pollutants and precipitates.

Association of American Railroads/Bureau of Explosives; Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads. Pueblo, CO. 2002., p. 53

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.4.2 Disposal Methods



[Aluminum](#) compounds are treated under anhydrous conditions to prevent violent reactions, recover solvent, and form Al compounds suitable for landfill by reaction with anhydrous hydrolysis agent, eg [calcium hydroxide](#). /[Aluminum compounds](#)/

Lee TE; Disposal of Aluminum-Containing Waste Materials, US Patent Number 4018867 4/19/77 (ETHYL CORP)

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational exposure or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or [water](#); effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations.

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Aluminum sulfate: Pretreatment involves hydrolysis, followed by neutralization with [sodium hydroxide](#).

Sittig M; Handbook of Toxic and Hazardous Chemicals; p.42 (1981)

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.4.3 Preventive Measures



If material not involved in fire: Keep material out of [water](#) sources and sewers. Build dikes to contain flow as necessary.

Association of American Railroads/Bureau of Explosives; Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads. Pueblo, CO. 2002., p. 53

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Personnel protection: Keep upwind. ... Avoid breathing vapors or dusts. Wash away any material which may have contacted the body with copious amounts of [water](#) or soap and [water](#).

Association of American Railroads/Bureau of Explosives; Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads. Pueblo, CO. 2002., p. 53

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

SRP: The scientific literature for the use of contact lenses in industry is conflicting. The benefit or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Work clothing that becomes wet or significantly contaminated should be removed and replaced. /[Aluminum](#) (soluble salts and alkyls, as Al)/

NIOSH. NIOSH Pocket Guide to Chemical Hazards & Other Databases CD-ROM. Department of Health & Human Services, Centers for Disease Prevention & Control. National Institute for Occupational Safety & Health. DHHS (NIOSH) Publication No. 2004-103 (2003).

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

For more Preventive Measures (Complete) data for ALUMINUM SULFATE (7 total), please visit the [HSDB record page](#).

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.5 Handling and Storage



1.5.1 Storage Conditions



Ambient /Octadecohydrate/

U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Volume II. Washington, D.C.: U.S. Government Printing Office, 1984-5.

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Extremely reactive with air, moisture and compounds containing active [hydrogen](#) and therefore must be kept under a blanket of inert gas. /[Aluminum](#) alkyls/

International Labour Office. Encyclopaedia of Occupational Health and Safety. 4th edition, Volumes 1-4 1998. Geneva, Switzerland: International Labour Office, 1998., p. 62.3

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

In general, materials ... toxic as stored or which can decompose into toxic components ... Should be stored in cool ... ventilated place, out of ... sun, away from ... fire hazard ... be periodically inspected and monitored. Incompatible materials should be isolated ...

Sax, N.I. Dangerous Properties of Industrial Materials. 4th ed. New York: Van Nostrand Reinhold, 1975., p. 726

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

All possibility of contact with [water](#) must be avoided. Solution containing not more than 20% of these compounds in non-reactive solvents, however, can be handled without risk of spontaneous ignition. /[Aluminum](#) alkyls/

International Labour Office. Encyclopedia of Occupational Health and Safety. Vols. I&II. Geneva, Switzerland: International Labour Office, 1983., p. 422

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

For more Storage Conditions (Complete) data for ALUMINUM SULFATE (6 total), please visit the [HSDB record page](#).

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.6 Exposure Control and Personal Protection



1.6.1 Threshold Limit Values (TLV)



8 hr Time Weighted Avg (TWA): 10 mg/cu m (Respirable fraction). /[Aluminum](#) metal and insoluble compounds/

American Conference of Governmental Industrial Hygienists TLVs and BEIs. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. Cincinnati, OH, 2008, p. 11

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Excursion Limit Recommendation: Excursions in worker exposure levels may exceed 3 times the TLV-TWA for no more than a total of 30 minutes during a work day, and under no circumstances should they exceed 5 times the TLV-TWA, provided that the TLV-TWA is not exceeded. /[Aluminum](#) metal and insoluble compounds/

American Conference of Governmental Industrial Hygienists TLVs and BEIs. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. Cincinnati, OH, 2008, p. 5

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

A4: Not classifiable as a human carcinogen. /[Aluminum](#) metal and insoluble compounds/

American Conference of Governmental Industrial Hygienists TLVs and BEIs. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. Cincinnati, OH, 2008, p. 11

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.6.2 Allowable Tolerances



Aluminum sulfate is exempted from the requirement of a tolerance when used as a safer adjuvant in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only.

40 CFR 180.920; U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of July 1, 2004: <https://www.ecfr.gov>

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.6.3 Personal Protective Equipment (PPE)



Personal protective equipment /incl/ dust respirator; safety glasses or face shield; rubber gloves.

U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Volume II. Washington, D.C.: U.S. Government Printing Office, 1984-5.

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Wear appropriate personal protective clothing to prevent skin contact. /[Aluminum](#) (soluble salts and alkyls, as Al/

NIOSH. NIOSH Pocket Guide to Chemical Hazards & Other Databases CD-ROM. Department of Health & Human Services, Centers for Disease Prevention & Control. National Institute for Occupational Safety & Health. DHHS (NIOSH) Publication No. 2004-103 (2003).

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Wear appropriate eye protection to prevent eye contact. /[Aluminum](#) (soluble salts and alkyls, as Al)/

NIOSH. NIOSH Pocket Guide to Chemical Hazards & Other Databases CD-ROM. Department of Health & Human Services, Centers for Disease Prevention & Control. National Institute for Occupational Safety & Health. DHHS (NIOSH) Publication No. 2004-103 (2003).

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Protective clothing and a high standard of training in the necessary precautionary measures are essential for the handling of the materials. /[Aluminum](#) alkyls/

International Labour Office. Encyclopedia of Occupational Health and Safety. Volumes I and II. New York: McGraw-Hill Book Co., 1971., p. 271

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.7 Stability and Reactivity



1.7.1 Hazardous Reactivities and Incompatibilities



May corrode metals in presence of moisture. /[Aluminum sulfate octadecahydrate](#)/

U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Manual Two. Washington, DC: U.S. Government Printing Office, Oct., 1978.

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Extremely reactive with air, moisture, and compounds containing active [hydrogen...](#) /Alkyl aluminum compounds/

International Labour Office. Encyclopaedia of Occupational Health and Safety. 4th edition, Volumes 1-4 1998. Geneva, Switzerland: International Labour Office, 1998., p. 63.2

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Reacts violently with a broad range of materials including air & [water](#). /[Aluminum](#) alkyls/

Fire Protection Guide to Hazardous Materials. 13 ed. Quincy, MA: National Fire Protection Association, 2002., p. 49-17

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.8 Transport Information



1.8.1 Shipping Name/ Number DOT/UN/NA/IMO



NA 9078; Aluminum sulfate, solid

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

NA 1760; Aluminum sulfate solution

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.8.2 Standard Transportation Number



49 633 05; Aluminum sulfate (aluminum sulfate, not more than 5% activated [carbon](#))

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

49 633 03; Aluminum sulfate, solid

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

49 441 65; Aluminum sulfate, solution

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.8.3 Shipment Methods and Regulations



The International Maritime Dangerous Goods Code lays down basic principles for transporting hazardous chemicals. Detailed recommendations for individual substances and a number of recommendations for good practice are included in the classes dealing with such substances. A general index of technical names has also been compiled. This index should always be consulted when attempting to locate the appropriate procedures to be used when shipping any substance or article.

IMDG; International Maritime Dangerous Goods Code; International Maritime Organization p.4221 (1998)

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

The International Air Transport Association (IATA) Dangerous Goods Regulations are published by the IATA Dangerous Goods Board pursuant to IATA Resolutions 618 and 619 and constitute a manual of industry carrier regulations to be followed by all IATA Member airlines when transporting hazardous materials.

IATA. Dangerous Goods Regulations. 45 th Ed. Montreal, Canada and Geneva, Switzerland. International Air Transport Association. Dangerous Goods Regulations, 2004., p. 93

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

No person may /transport,/ offer or accept a hazardous material for transportation in commerce unless that person is registered in conformance ... and the hazardous material is properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by ... /the hazardous materials regulations (49 CFR 171-177)./

49 CFR 171.2; U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of February 5, 2004: <https://www.ecfr.gov>

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.9 Regulatory Information



1.9.1 Federal Drinking Water Guidelines



EPA 50-200 ug/l /[Aluminum](#)/

USEPA/Office of Water; Federal-State Toxicology and Risk Analysis Committee (FSTRAC). Summary of State and Federal Drinking Water Standards and Guidelines (11/93) To Present

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.9.2 State Drinking Water Standards



(CA) CALIFORNIA 1000 ug/l /[Aluminum](#)/

USEPA/Office of Water; Federal-State Toxicology and Risk Analysis Committee (FSTRAC). Summary of State and Federal Drinking Water Standards and Guidelines (11/93) To Present

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.9.3 State Drinking Water Guidelines



(AZ) ARIZONA 73 ug/l /[Aluminum](#)/

USEPA/Office of Water; Federal-State Toxicology and Risk Analysis Committee (FSTRAC). Summary of State and Federal Drinking Water Standards and Guidelines (11/93) To Present

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

(CA) CALIFORNIA 200 ug/l /[Aluminum](#)/

USEPA/Office of Water; Federal-State Toxicology and Risk Analysis Committee (FSTRAC). Summary of State and Federal Drinking Water Standards and Guidelines (11/93) To Present

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

(ME) MAINE 1430 ug/l /[Aluminum](#)/

USEPA/Office of Water; Federal-State Toxicology and Risk Analysis Committee (FSTRAC). Summary of State and Federal Drinking Water Standards and Guidelines (11/93) To Present

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.9.4 Clean Water Act Requirements



Aluminum sulfate is designated as a hazardous substance under section 311(b)(2)(A) of the Federal [Water](#) Pollution Control Act and further regulated by the Clean [Water](#) Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing this substance.

40 CFR 116.4; U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of July 1, 2004: <https://www.ecfr.gov>

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.9.5 CERCLA Reportable Quantities



Persons in charge of vessels or facilities are required to notify the National Response Center (NRC) immediately, when there is a release of this designated hazardous substance, in an amount equal to or greater than its reportable quantity of 5000 lb or 2270 kg. The toll free number of the NRC is (800) 424-8802; In the Washington D.C. metropolitan area (202) 426-2675. The rule for determining when notification is required is stated in 40 CFR 302.4 (section IV. D.3.b).

40 CFR 302.4; U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of July 1, 2004: <https://www.ecfr.gov>

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.9.6 FIFRA Requirements



As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider

their health and environmental effects and make decisions about their future use. Under this pesticide reregistration program, EPA examines health and safety data for pesticide active ingredients initially registered before November 1, 1984, and determines whether they are eligible for reregistration. In addition, all pesticides must meet the new safety standard of the Food Quality Protection Act of 1996. Pesticides for which EPA had not issued Registration Standards prior to the effective date of FIFRA '88 were divided into three lists based upon their potential for human exposure and other factors, with List B containing pesticides of greater concern and List D pesticides of less concern. Aluminum sulfate is found on List D. Case No: 4007; Pesticide type: herbicide, antimicrobial; Case Status: No products containing the pesticide are actively registered. Therefore ... "cancelled." Under FIFRA, pesticide producers may voluntarily cancel their registered products. EPA also may cancel pesticide registrations if registrants fail to pay required fees or make/meet certain reregistration commitments, or if EPA reaches findings of unreasonable adverse effects.; Active ingredient (AI): aluminum sulfate; AI Status: The active ingredient is no longer contained in any registered products ... "cancelled."

United States Environmental Protection Agency/ Prevention, Pesticides and Toxic Substances; Status of Pesticides in Registration, Reregistration, and Special Review. (1998) EPA 738-R-98-002, p. 295

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Aluminum sulfate is exempted from the requirement of a tolerance when used as a safener adjuvant in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only.

40 CFR 180.920; U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of July 1, 2004: <https://www.ecfr.gov>

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.9.7 FDA Requirements



Aluminum sulfate used for multiple purposes in food for human consumption is generally recognized as safe when used in accordance with good manufacturing practice.

21 CFR 182.1125; U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of July 1, 2004: <https://www.ecfr.gov>

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Aluminum sulfate used as a general purpose food additive in animal drugs, feeds, and related products is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

21 CFR 582.1125; U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of July 1, 2004: <https://www.ecfr.gov>

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

Drug products containing certain active ingredients offered over-the-counter (OTC) for certain uses. A number of active ingredients have been present in OTC drug products for various uses, as described below. However, based on evidence currently available, there are inadequate data to establish general recognition of the safety and effectiveness of these ingredients for the specified uses: aluminum sulfate is included in antiperspirant and topical antifungal drug products.

21 CFR 310.545; U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of July 1, 2004: <https://www.ecfr.gov>

▶ [Hazardous Substances Data Bank \(HSDB\)](#)

1.10 Other Safety Information



1.10.1 Special Reports



Anon; Information profiles on Potential Occupational Hazards: [Aluminum](#) & Compounds, 2nd Draft (Revised); GRA & I Issue 21 NTIS/PB89-216238 (1989)> TD3: Information profiles are working papers used by the National Institute for Occupational Safety and Health to assist the Institute in establishing priorities. The profile summarizes data on organic and inorganic substances containing [aluminum](#) as the only metal. Each summary presents data on known and suspected health effects, the extent of worker exposure, physical and chemical properties and the industrial importance of the following [aluminum](#) compounds: [aluminum](#) metal, [aluminum ammonium sulfate](#), [aluminum chlorhydrate](#), [aluminum chloride anhydrous](#), [aluminum chloride](#) hydrous, aluminum distearate, aluminum ethoxide, [aluminum fluoride](#), [aluminum hydride](#), [aluminum hydroxide](#), aluminum nitrate, [aluminum oxide](#), aluminum orthophosphate, [aluminum potassium sulfate](#), aluminum silicate, [aluminum sodium sulfate](#), aluminum sulfate, [calcium aluminum silicate](#), [diethylaluminum chloride](#), [sodium aluminate](#), [tri-n-butylaluminum](#), [triethylaluminum](#), [tri-n-hexylaluminum](#), [triisobutylaluminum](#), [tri-n-octylaluminum](#). Detailed literature searches are conducted to identify information to be used in the profile summaries. Sponsored by National Inst. for Occupational Safety and Health, Rockville, MD.

▶ [Hazardous Substances Data Bank \(HSDB\)](#)