

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (5N) 99.999% Arsenic(V) Sulfide

**Product Code:** AS5-S-05-C

**CAS Number:** 1303-34-0

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

H301 Toxic if swallowed.

H331 Toxic if inhaled.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

T; Toxic

R23/25: Toxic by inhalation and if swallowed.

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard pictograms



GHS06 GHS09

Signal word: Danger

Hazard statements

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...  
P361 Take off immediately all contaminated clothing.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)  
HEALTH  
FIRE  
REACTIVITY  
2  
0  
1  
Health (acute effects) = 2  
Flammability = 0  
Physical Hazard = 1  
Other hazards  
Results of PBT and vPvB assessment  
PBT:  
N/A  
vPvB:  
N/A

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
(CAS#) Description:  
Arsenic(V) sulfide (CAS# 1303-34-0)

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### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures  
General information  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.  
If inhaled:  
Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
In case of skin contact:  
Immediately wash with soap and water; rinse thoroughly.  
Seek immediate medical advice.  
In case of eye contact:  
Rinse opened eye for several minutes under running water. Consult a physician.  
If swallowed:  
Do not induce vomiting; immediately call for medical help.  
Seek immediate medical advice.

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Toxic metal oxide fume

Sulfur oxides (SO<sub>x</sub>)

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

Do not allow material to be released to the environment without official permits.

Methods and materials for containment and cleanup:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires: The product is not flammable

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

Arsenic, elemental, and inorganic compounds (except arsine), as As  
mg/m<sup>3</sup>

ACGIH TLV 0.01; Carcinogen

Belgium TWA 0.2

Denmark TWA 0.05

Finland Carcinogen

France VME 0.2

Hungary TWA 0.5; Carcinogen

Ireland TWA 0.1; Carcinogen

Korea TLV 0.01; Carcinogen

Netherlands TWA 0.05; 0.1-STEL

Norway TWA 0.02

Poland TWA 0.1

Sweden NGV 0.03; Carcinogen

Switzerland TWA 0.1; Carcinogen

United Kingdom TWA 0.1; Carcinogen

USA PEL 0.5

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Refer to 29CFR1910.1018 for regulations on respiratory protection required during exposure to inorganic arsenic.

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

Body protection: Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Powder

Odor: No data available

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 300°C (572 °F)

Boiling point/Boiling range: 707°C (1305 °F)

Sublimation temperature / start: No data available

Flash point: N/A  
Flammability (solid, gas) No data available.  
Ignition temperature: No data available  
Decomposition temperature: No data available  
Autoignition: No data available.  
Danger of explosion: Product does not present an explosion hazard.  
Explosion limits:  
Lower: No data available  
Upper: No data available  
Vapor pressure: N/A  
  
Density at 20°C (68 °F): 3.43 g/cm<sup>3</sup> (28.623 lbs/gal)  
Relative density No data available.  
Vapor density N/A  
Evaporation rate N/A  
Segregation coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity  
Chemical stability  
Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions No dangerous reactions known  
Incompatible materials: Oxidizing agents  
Hazardous decomposition products:  
Toxic metal oxide fume  
Sulfur oxides (SO<sub>x</sub>)

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## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects  
Acute toxicity:  
LD/LC50 values that are relevant for classification:  
Oral LD50 185 mg/kg (rat)  
Primary irritant effect:  
on the skin: May cause irritation  
on the eye: May cause irritation  
Sensitization: No sensitizing effects known.  
Subacute to chronic toxicity:  
Acute arsenic poisoning from ingestion results in marked irritation of the stomach and intestines with nausea, vomiting and diarrhea. In severe cases, the vomitus and stools are bloody and the patient goes into collapse and shock with weak, rapid pulse, cold sweats, coma and death.  
Chronic arsenic poisoning may cause disturbances of the digestive system such as loss of appetite, cramps, nausea, constipation or diarrhea.  
Subacute to chronic toxicity:  
Sulfides show variable toxicity. The alkaline sulfides are similar in action to alkalis.  
They cause irritation of the skin and are corrosive by ingestion. The heavy metal sulfides are generally

insoluble and show little toxic action except through the liberation of hydrogen sulfide. Hydrogen sulfide, if generated, is toxic, a severe irritant and flammable. Effects include conjunctivitis, headache, nausea, dizziness, coughing, pulmonary edema and possibly death.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-A: human carcinogen: sufficient evidence from epidemiologic studies to support a causal association between exposure and cancer.

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

NTP-1: Known to be carcinogenic: sufficient evidence from human studies.

Carcinogen as defined by OSHA.

ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.

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## SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Acquatic toxicity: No data available

Persistence and degradability No data available

Behavior in environmental systems:

Bioaccumulative potential No data available

Mobility in soil No data available

Ecotoxicological effects:

Remark: Very toxic for aquatic organisms

Additional ecological information:

Do not allow product to reach groundwater, water courses, or sewage systems, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without official permits.

Very toxic for aquatic organisms

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

Other adverse effects No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

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## SECTION 14. TRANSPORT INFORMATION

DOT regulations:

Hazard class: 6.1

Identification number: UN1557

Packing group: III

Proper shipping name (technical name): ARSENIC COMPOUND, SOLID, N.O.S. (Arsenic(V) sulfide)

Label 6.1  
Land transport ADR/RID (cross-border)  
ADR/RID class: 6.1 (T5) Toxic substances  
Danger code (Kemler): 60  
UN-Number: 1557  
Packaging group: III  
Special marking: Symbol (fish and tree)  
UN proper shipping name: 1557 ARSENIC COMPOUND, SOLID, N.O.S. (Arsenic(V) sulfide)  
Maritime transport IMDG:  
IMDG Class: 6.1  
UN Number: 1557  
Label 6.1  
Packaging group: III  
EMS Number: F-A,S-A  
Marine pollutant: No  
Proper shipping name: ARSENIC COMPOUND, SOLID, N.O.S. (Arsenic(V) sulfide)  
Air transport ICAO-TI and IATA-DGR:  
ICAO/IATA Class: 6.1  
UN/ID Number: 1557  
Label 6.1  
Packaging group: III  
Proper shipping name: ARSENIC COMPOUND, SOLID, N.O.S. (Arsenic(V) sulfide)  
UN "Model Regulation": UN1557, ARSENIC COMPOUND, SOLID, N.O.S., 6.1, III  
Environmental hazards: Environmentally hazardous substance, solid; Marine Pollutant  
Special precautions for user Warning: Toxic substances  
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A

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## SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Product related hazard informations:

Hazard symbols:

T Toxic

N Dangerous for the environment

Risk phrases:

23/25 Toxic by inhalation and if swallowed.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

20/21 When using do not eat, drink or smoke.

28 After contact with skin, wash immediately with plenty of soap and water

45 In case of accident or if you feel unwell, seek medical advice immediately.

60 This material and its container must be disposed of as hazardous waste.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

This product contains arsenic and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Refer to 29CFR1910.1018 for regulations concerning inorganic arsenic.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.