

# Material Safety Data Sheet

## Arsenic(III) sulfide, 99.99%

ACC# 84980

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Arsenic(III) sulfide, 99.99%

**Catalog Numbers:** AC192510000, AC192510250, AC192511000

**Synonyms:** Arsenic sesquisulfide; Arsenic trisulfide.

**Company Identification:**

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

**For information in North America, call:** 800-ACROS-01

**For emergencies in the US, call CHEMTREC:** 800-424-9300

### Section 2 - Composition, Information on Ingredients

| CAS#      | Chemical Name        | Percent | EINECS/ELINCS |
|-----------|----------------------|---------|---------------|
| 1303-33-9 | Arsenic(III) sulfide | 99.99   | 215-117-4     |

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: yellow or orange powder.

**Danger!** Cancer hazard. Contains inorganic arsenic. Harmful if swallowed. Harmful if inhaled. Causes eye, skin, and respiratory tract irritation. May cause central nervous system depression. May cause liver and kidney damage. May cause bone marrow damage.

**Target Organs:** Kidneys, central nervous system, liver, lungs, bone marrow, skin.

#### Potential Health Effects

**Eye:** Causes eye irritation. May cause conjunctivitis.

**Skin:** Causes skin irritation. Exposure to arsenic compounds may produce hyperpigmentation of the skin and hyperkeratoses of plantar and palmar surfaces as well as both primary irritation and sensitization types.

**Ingestion:** Harmful if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion of large amounts may cause CNS depression. Ingestion of arsenical compounds may cause burning of the lips, throat constriction, swallowing difficulties, severe abdominal pain, severe nausea, projectile vomiting, and profuse diarrhea. May cause garlic smell on the breath and body. Ingestion of arsenic compounds can produce convulsions, coma, and possibly death within 24 hours.

**Inhalation:** Causes respiratory tract irritation. Exposure produces central nervous system depression. Inhalation of arsenic compounds may lead to irritation of the respiratory tract and to possible nasal perforation. Long-term exposure to arsenic compounds may produce impairment of peripheral circulation.

**Chronic:** Arsenic trioxide can cause cancer in humans. Other long term effects include: anemia, liver and kidney damage. Chronic exposure to arsenical dust may cause shortness of breath, nausea, chest pains, and garlic odor.

### Section 4 - First Aid Measures

**Eyes:** 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. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

**Notes to Physician:** Treat symptomatically and supportively.

### 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. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

**Extinguishing Media:** Do NOT get water inside containers. Do NOT use straight streams of water. For small fires, use dry chemical, carbon dioxide, or water spray. Cool containers with flooding quantities of water until well after fire is out. For large fires, use water spray, fog or regular foam.

**Flash Point:** Not available.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 1; 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. Provide ventilation. Do not get water inside containers.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Wash hands before eating. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse. Use only with adequate ventilation or respiratory protection.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Poison room locked.

## 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 adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. See 29CFR 1910.1018 for regulatory requirements pertaining to all occupational exposures to inorganic arsenic.

### Exposure Limits

| Chemical Name        | ACGIH  | NIOSH   | OSHA - Final PELs  |
|----------------------|--|---|--|
| Arsenic(III) sulfide | 0.01 mg/m <sup>3</sup> TWA (listed under Arsenic). | 5 mg/m <sup>3</sup> IDLH (listed under Arsenic).5 mg/m <sup>3</sup> IDLH (as As) (listed under Arsenic, inorganic compounds). | 0.5 mg/m <sup>3</sup> TWA (listed under Arsenic).5 æg/m <sup>3</sup> Action Level (as As); 10 æg/m <sup>3</sup> PEL (as As. Cancer hazard - see 29 CFR 1 910.1018. Arsine excepted) (listed under Arsenic, inorganic compounds). |

**OSHA Vacated PELs:** Arsenic(III) sulfide: 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 gloves to prevent skin exposure.

**Clothing:** Wear appropriate clothing to prevent skin exposure.

**Respirators:** Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

## Section 9 - Physical and Chemical Properties

**Physical State:** Powder

**Appearance:** yellow or orange

**Odor:** odorless

**pH:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:**Not available.

**Viscosity:** Not available.

**Boiling Point:** 707 deg C @ 760 mm Hg

**Freezing/Melting Point:**300 deg C

**Decomposition Temperature:**Not available.

**Solubility:** Insoluble.

**Specific Gravity/Density:**3.46 g/cm<sup>3</sup>

**Molecular Formula:**As<sub>2</sub>S<sub>3</sub>

**Molecular Weight:**246.02

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.

**Conditions to Avoid:** Incompatible materials, dust generation, excess heat, oxidizers.

**Incompatibilities with Other Materials:** Oxidizing agents.

**Hazardous Decomposition Products:** Oxides of sulfur, arsenic fumes.

**Hazardous Polymerization:** Has not been reported

## Section 11 - Toxicological Information

### RTECS#:

**CAS#** 1303-33-9: CG2638000; CG2718000

### LD50/LC50:

**CAS#** 1303-33-9:

Oral, mouse: LD50 = 254 mg/kg;

Oral, mouse: LD50 = 254 mq/kq;

Oral, rat: LD50 = 185 mg/kg;  
Oral, rat: LD50 = 6400 mg/kg;  
Oral, rat: LD50 = 185 mg/kg;  
Skin, rat: LD50 = 936 mg/kg;

#### Carcinogenicity:

CAS# 1303-33-9:

- **ACGIH:** A1 - Confirmed Human Carcinogen (listed as 'Arsenic'). A1 - Confirmed Human Carcinogen (listed as 'Arsenic, inorganic compounds').
- **California:** carcinogen, initial date 2/27/87 (listed as Arsenic, inorganic compounds).
- **NTP:** Known carcinogen (listed as Arsenic, inorganic compounds).
- **IARC:** Group 1 carcinogen (listed as Arsenic).

**Epidemiology:** Exposure to inorganic arsenic compounds in drugs, food, and water as well as in an occupational setting have been causally associated with the development of cancer, primarily of the skin and lungs. IARC has determined that there is sufficient evidence for carcinogenicity for arsenic compounds to humans.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Mutagenicity:** No information available.

**Neurotoxicity:** No information available.

**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.

**Environmental:** Can be biodegraded and bioconcentrated.

**Physical:** No information available.

**Other:** No information available.

## 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:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

|                       | US DOT                           | Canada TDG                                    |
|-----------------------|----------------------------------|---|
| <b>Shipping Name:</b> | ARSENIC COMPOUNDS, SOLID, N.O.S. | ARSENIC COMPOUNDS SOLID NOS (ARSENIC SULFIDE) |
| <b>Hazard Class:</b>  | 6.1                              | 6.1   |
| <b>UN Number:</b>     | UN1557                           | UN1557  |
| <b>Packing Group:</b> | III                              | III   |

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 1303-33-9 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# 1303-33-9: 1 lb final RQ; 0.454 kg final RQ

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### Section 313

This material contains Arsenic(III) sulfide (listed as Arsenic), 99.99%, (CAS# 1303-33-9) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

#### Clean Air Act:

CAS# 1303-33-9 (listed as Arsenic, inorganic compounds) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

#### Clean Water Act:

CAS# 1303-33-9 is listed as a Hazardous Substance under the CWA. CAS# 1303-33-9 is listed as a Priority Pollutant under the Clean Water Act. CAS# 1303-33-9 is listed as a Toxic Pollutant under the Clean Water Act.

**OSHA:**

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

**STATE**

CAS# 1303-33-9 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, (listed as Arsenic), Minnesota, (listed as Arsenic, inorganic compounds), Massachusetts.

**California Prop 65**

**The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:**

WARNING: This product contains Arsenic(III) sulfide, listed as 'Arsenic, inorganic compounds', a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 1303-33-9: 0.06 æg/day NSRL (inhalation); 10 æg/day NSRL (except inhalation) (listed under Arsenic)

**European/International Regulations****European Labeling in Accordance with EC Directives****Hazard Symbols:**

T N

**Risk Phrases:**

R 23/25 Toxic by inhalation and if swallowed.

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

**Safety Phrases:**

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

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

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

S 28A After contact with skin, wash immediately with plenty of water

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

**WGK (Water Danger/Protection)**

CAS# 1303-33-9: No information available.

**Canada - DSL/NDSL**

CAS# 1303-33-9 is listed on Canada's DSL List.

**Canada - WHMIS**

not available.

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# 1303-33-9 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Additional Information**

**MSDS Creation Date:** 1/07/1999

**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.*