

# Arsenic Trioxide

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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### SECTION 1: Identification

#### 1.1. Identification

Product form	: Substance
Substance name	: Arsenic Trioxide
Chemical name	: diarsenic trioxide, arsenic trioxide
CAS No	: 1327-53-3
Product code	: LC11505
Formula	: As <sub>2</sub> O <sub>3</sub>
Synonyms	: Arsenous acid / Arsenic (III) oxide / Diarsenic trioxide

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

Use of the substance/mixture	: For laboratory and manufacturing use only.
Restrictions on use	: Not for food, drug or household use

#### 1.3. Details of the supplier of the safety data sheet

LabChem Inc  
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court  
Zelienople, PA 16063 - USA  
T 412-826-5230 - F 724-473-0647  
[info@labchem.com](mailto:info@labchem.com) - [www.labchem.com](http://www.labchem.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Acute toxicity (oral) Category 2	H300
Skin corrosion/irritation Category 1B	H314
Serious eye damage/eye irritation Category 1	H318
Carcinogenicity Category 1A	H350
Hazardous to the aquatic environment - Acute Hazard Category 2	H401

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

GHS06

GHS08

Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H300 - Fatal if swallowed  
H314 - Causes severe skin burns and eye damage  
H350 - May cause cancer  
H401 - Toxic to aquatic life

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P260 - Do not breathe dust  
P264 - Wash exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P273 - Avoid release to the environment  
P280 - Wear protective gloves, protective clothing, eye protection, face protection  
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P308+P313 - IF exposed or concerned: Get medical advice/attention

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P310 - Immediately call a poison center or doctor/physician  
P363 - Wash contaminated clothing before reuse  
P405 - Store locked up  
P501 - Dispose of contents/container to comply with local, state and federal regulations  
If inhaled: Remove person to fresh air and keep comfortable for breathing

### 2.3. Other hazards

Other hazards not contributing to the classification : None under normal conditions.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Arsenic Trioxide (Main constituent)	(CAS No) 1327-53-3	100	Acute Tox. 2 (Oral), H300 Skin Corr. 1B, H314 Eye Dam. 1, H318 Carc. 1A, H350 Aquatic Acute 2, H401

Full text of hazard classes and H-statements : see section 16

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

First-aid measures after ingestion : Rinse mouth. DO NOT induce vomiting. Fatal if swallowed. Immediately call a poison center or doctor/physician.

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

Symptoms/injuries : Causes severe skin burns and eye damage.

Symptoms/injuries after inhalation : May cause cancer by inhalation. Coughing. Irritation of the respiratory tract.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after ingestion : Fatal if swallowed.

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

Hospitalize at once.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

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

Reactivity : Thermal decomposition generates : Corrosive vapors.

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

Protective equipment : Safety glasses. Protective clothing. Gloves. Combined gas/dust mask with filter type B/P3.  
Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.  
Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe dust. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.  
Hygiene measures : Do not eat, drink or smoke when using this product. Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

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

Technical measures : Comply with applicable regulations.  
Storage conditions : Keep container closed when not in use.  
Incompatible products : Strong oxidizers. metals.  
Incompatible materials : Heat sources.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Arsenic Trioxide (1327-53-3)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup> as As
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup> as As, inorganic compounds
NIOSH	NIOSH REL (ceiling) (mg/m <sup>3</sup> )	0.002 mg/m <sup>3</sup> 15 min.
NIOSH	Remark (NIOSH)	See Pocket Guide, App. A.

#### 8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation. Material should be handled in a laboratory hood whenever possible.

Personal protective equipment : Combined gas/dust mask with filter type B/P3. Dustproof clothing. Gloves. Protective clothing. Safety glasses.



Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or face shield.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Wear appropriate mask.

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Other information : Do not eat, drink or smoke during use.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Fine white powder.
Color	: white
Odor	: None.
Odor threshold	: No data available
pH	: No data available
Melting point	: 312.3 °C
Freezing point	: No data available
Boiling point	: 457.2
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: 0.000001 hPa @ 66 °C
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: 3.738 g/cm³
Molecular mass	: 197.84 g/mol
Solubility	: Soluble in water. Water: 2 g/100ml
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

#### 9.2. Other information

VOC content	: 0 %
Percent Solids	: 100 %

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Thermal decomposition generates : Corrosive vapors.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

Reacts with (strong) oxidizers: release of toxic/combustible gases/vapours (arsine).

#### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

#### 10.5. Incompatible materials

metals. Strong oxidizers.

#### 10.6. Hazardous decomposition products

Arsenic and its oxides.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

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Likely routes of exposure : Inhalation; Skin and eye contact  
Acute toxicity : Oral: Fatal if swallowed.

<b>Arsenic Trioxide (1327-53-3)</b>	
LD50 oral rat	14.6 mg/kg
ATE US (oral)	14.600 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns and eye damage.  
Serious eye damage/irritation : Causes serious eye damage.  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : May cause cancer.

<b>Arsenic Trioxide (1327-53-3)</b>	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met. Fatal if swallowed.
Symptoms/injuries after inhalation	: May cause cancer by inhalation. Coughing. Irritation of the respiratory tract.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Fatal if swallowed.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water : Toxic to aquatic life.

<b>Arsenic Trioxide (1327-53-3)</b>	
LC50 fish 1	> 1 mg/l
EC50 Daphnia 1	8.23 mg/l 24 hr.

### 12.2. Persistence and degradability

<b>Arsenic Trioxide (1327-53-3)</b>	
Persistence and degradability	Not established.

### 12.3. Bioaccumulative potential

<b>Arsenic Trioxide (1327-53-3)</b>	
Bioconcentration factor (BCF REACH)	236
Bioaccumulative potential	Not established.

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.  
Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

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### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Transport document description

: UN1561 Arsenic trioxide, 6.1, II

UN-No.(DOT)

: UN1561

Proper Shipping Name (DOT)

: Arsenic trioxide

Transport hazard class(es) (DOT)

: 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Packing group (DOT)

: II - Medium Danger

Hazard labels (DOT)

: 6.1 - Poison inhalation hazard



DOT Packaging Non Bulk (49 CFR 173.xxx)

: 212

DOT Packaging Bulk (49 CFR 173.xxx)

: 242

DOT Special Provisions (49 CFR 172.102)

: IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).

IP2 - When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.

IP4 - Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.

T3 - 2.65 178.274(d)(2) Normal..... 178.275(d)(2)

TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx)

: 153

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)

: 25 kg

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)

: 100 kg

DOT Vessel Stowage Location

: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Other information

: No supplementary information available.

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Arsenic Trioxide (1327-53-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Subject to reporting requirements of United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists)	1 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	10000 lb 100 lb if the substance is solid in powder form with particle size less than 100 microns, or is in solution or molten form
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

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Arsenic Trioxide	CAS No 1327-53-3	100%
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### 15.2. International regulations

#### CANADA

##### Arsenic Trioxide (1327-53-3)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class E - Corrosive Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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#### EU-Regulations

No additional information available

#### National regulations

##### Arsenic Trioxide (1327-53-3)

Listed on the Canadian IDL (Ingredient Disclosure List)

### 15.3. US State regulations

##### Arsenic Trioxide (1327-53-3)

U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
Non-significant risk level (NSRL)	0.06 µg/day

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16: Other information

Revision date : 12/06/2016

Other information : None.

Full text of H-phrases: see section 16:

H300	Fatal if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H350	May cause cancer
H401	Toxic to aquatic life

NFPA health hazard

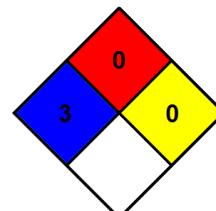
: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



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### HMIS III Rating

Health	: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability	: 0 Minimal Hazard - Materials that will not burn
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	: F F - Safety glasses, Gloves, Synthetic apron, Dust respirator

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