

## CLIP, Chemical Laboratory Information Profile

"Only when you know the hazards, can you take the necessary precautionary measures."

**Arsenic(III) Oxide****CAS No.: 1327-53-3**

Synonyms: Arsenic trioxide, Arsenous oxide, Arsenous acid anhydride, Arsenic, White arsenic

**Physical Properties****Exposure Limits**

White soluble powder.		OSHA PEL:	0.01 mg/m <sup>3</sup> as As
Vapor pressure at 20 °C:	negligible	ACGIH TLV:	0.01 mg/m <sup>3</sup> as As
Melting point:	313 °C		
Boiling point:	457 °C		

**Hazardous Characteristics**

Overall toxicity	Flammability	Destructive to skin/eye	Absorbed through skin	Sensitizer?	Self-reactive?	Incompatible with:
4	0	3	3	No	No	Acids, reducing agents, fluorides oxidizing agents, zinc*

0: None (or very low); 1: Slight; 2: Moderate; 3: High; 4: Severe.

**\*Reactivity Hazards**

Arsenic(III) oxide reacts with acids to form arsine, a very toxic gas. Its reaction with reducing agents when in a water solution can form arsine. Reaction with some fluorides, for example HF and ClF<sub>3</sub>, is exothermic. Reaction with some oxidizing agents such as NaNO<sub>3</sub> in the presence of reducing agents can inflame spontaneously. Reaction with finely divided zinc is explosive when heated.

See Bretherick's *Handbook of Reactive Chemical Hazards* for details and for other incompatibilities.

Cited as known to be or reasonably anticipated to be carcinogenic in NTP-9?	Yes	Identified as a reproductive toxin in Frazier and Hage, <i>Reproductive Hazards of the Workplace</i> ?	Probably yes, but information is limited.
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**Typical symptoms of acute exposures:**

Eyes: irritation, pain, blurred vision, severe burns. Skin redness, dermatitis, serious skin burns. Sore throat, coughing. Abdominal pain, cramps, spasm, vomiting, diarrhea. Feeling unwell, headache, weakness, dizziness, convulsions, unconsciousness, death.

**Principal target organ(s) or system(s):**

Eyes, skin, respiratory tract, nervous system, blood, cardiovascular system, bone marrow, liver, kidneys.

**Storage Requirements**

With other poisons in a cool, dry, well-ventilated, and locked location.

**Notes****ReadMe**

This Chemical Laboratory Information Profile is *not* a Material Safety Data Sheet. It is a brief summary for teachers and their students that describes some of the hazards of this chemical as it is typically used in laboratories. On the basis of your knowledge of these hazards and before using or handling this chemical, *you need to select the precautions and first-aid procedures to be followed.* For that information as well as for other useful information, refer to Material Safety Data Sheets, container labels, and references in the scientific literature that pertain to this chemical.

**Reproductive Toxins**

Some substances that in fact are reproductive toxins are not yet recognized as such. For the best readily available and up-to-date information, refer to "DART/ETIC". See the TOXNET home page at [www.sis.nlm.nih.gov](http://www.sis.nlm.nih.gov) and click on "Toxicology search". *Note that some of the data in DART/ETIC have not been peer-reviewed.* See also Linda M. Frazier and Marvin L. Hage, *Reproductive Hazards of the Workplace*; Wiley, 1998; and T. H. Shepard, *Catalog of Teratogenic Agents*, 9th ed.; Johns Hopkins University Press, 1998.

**Abbreviations**

ACGIH TLV—American Conference of Governmental Industrial Hygienists—Threshold Limit Value. C—Ceiling. CAS—Chemical Abstracts Service. mg/m<sup>3</sup>—milligrams per cubic meter. NA—Not applicable. NE—Not established. NI—No information. NTP-9—National Toxicology Program, Ninth Annual Report on Carcinogens. OSHA PEL—Occupational Safety and Health Administration—Permissible Exposure Limit. ppm—parts per million. STEL/C—Short-term exposure limit and ceiling.

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