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## Product Information

### Arsenic(III) oxide

Product Number **A 1010**

Store at Room Temperature

Replacement for Product Code **22,762-5**

#### Product Description

Molecular Formula:  $As_2O_3$

Molecular Weight: 197.8

CAS Number: 1327-53-3

Synonyms: arsenic trioxide, arsenous acid, arsenous oxide<sup>1</sup>

Arsenic trioxide is the principal material for the production of many arsenic compounds and is one of the common forms of arsenic in nature. It is used in the manufacture of such products as glass and enamels.<sup>1</sup>

Arsenic trioxide is utilized in various studies on cellular processes, notably in investigations of leukemia. These include investigations of the growth of human multiple myeloma cells in the bone marrow microenvironment, histone H3 phosphoacetylation in acute promyelocytic leukemia cells, and activation of Rac1 and the p38 mitogen-activated protein (MAP) kinase pathway in several leukemia cell lines.<sup>2,3,4</sup> A study on the effect of arsenic trioxide on the expression of human cytochrome P450 1A1 in primary human hepatocytes and hepatoma Hep3B and HepG2 cells that have been exposed to 3-methylcholanthrene (3MC), benzo(a)pyrene, or dioxin has been reported.<sup>5</sup> A review of the action of arsenic trioxide with respect to acute promyelocytic leukemia has been published.<sup>6</sup>

#### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

#### Preparation Instructions

This product is soluble in 1 M NaOH (66 mg/ml), with heat as needed, yielding a clear, colorless solution. It is also sparingly and very slowly soluble in cold water. It is soluble in boiling water, dilute HCl, and alkali carbonate solutions. It is essentially insoluble in alcohol, chloroform, or ether.<sup>1</sup>

#### References

1. The Merck Index, 12th ed., Entry# 844.
2. Hayashi, T., et al., Arsenic trioxide inhibits growth of human multiple myeloma cells in the bone marrow microenvironment. *Mol. Cancer Ther.*, **1(10)**, 851-860 (2002).
3. Li, J., et al., Arsenic trioxide promotes histone H3 phosphoacetylation at the chromatin of Caspase-10 in acute promyelocytic leukemia cells. *J. Biol. Chem.*, **277(51)**, 49504-49510 (2002).
4. Verma, A., et al., Activation of Rac1 and the p38 mitogen-activated protein kinase pathway in response to arsenic trioxide. *J. Biol. Chem.*, **277(47)**, 44988-44995 (2002).
5. Vernhet, L., et al., Blockage of multidrug resistance-associated proteins potentiates the inhibitory effects of arsenic trioxide on CYP1A1 induction by polycyclic aromatic hydrocarbons. *J. Pharmacol. Exp. Ther.*, **304(1)**, 145-155 (2003).
6. Miller, W. H., Jr., et al., Mechanisms of action of arsenic trioxide. *Cancer Res.*, **62(14)**, 3893-3903 (2002).

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