

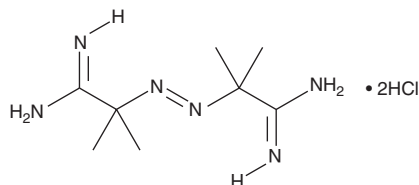
# Product Information



## AAPH

Catalog No. 82235

**CAS Registry No.:** 2997-92-4  
**Formal Name:** 2,2'-azobis-2-methyl-propanimidamide, dihydrochloride  
**MF:** C<sub>8</sub>H<sub>18</sub>N<sub>6</sub> • 2HCl  
**FW:** 271.2  
**Purity:** ≥98%  
**Stability:** ≥1 year at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that AAPH be stored as supplied at -20°C. It should be stable for at least one year.

AAPH is supplied as a crystalline solid. AAPH is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of AAPH be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of AAPH in PBS (pH 7.2) is approximately 10 mg/ml.

AAPH is a water-soluble azo compound which is used extensively as a free radical generator, often in the study of lipid peroxidation and the characterization of antioxidants.<sup>1-4</sup> Decomposition of AAPH produces molecular nitrogen and 2 carbon radicals. The carbon radicals may combine to produce stable products or react with molecular oxygen to give peroxy radicals. The half-life of AAPH is about 175 hours (37°C; neutral pH), making the rate of free radical generation essentially constant during the first several hours in solution.<sup>5</sup> While AAPH may be used effectively for lipid peroxidation in aqueous dispersions of fatty acids, other radical generators may be better suited for peroxidation studies in lipid micelles or membranes.<sup>6,7</sup>

### References

1. Noguchi, N., Takahashi, M., Tsuchiya, J., *et al.* Action of 21-aminosteroid U74006F as an antioxidant against lipid peroxidation. *Biochem. Pharmacol.* **55**, 785-791 (1998).
2. Liu, Z.-Q., Yu, W., and Liu, Z.-L. Antioxidative and prooxidative effects of coumarin derivatives on free radical initiated and photosensitized peroxidation of human low-density lipoprotein. *Chem. Phys. Lipids* **103**, 125-135 (1999).
3. Rice-Evans, C. and Miller, N. Total antioxidant status in plasma and body fluids. *Methods Enzymol.* **234(24)**, 279-293 (1994).
4. Liégeois, C., Lermusieau, G., and Collin, S. Measuring antioxidant efficiency of wort, malt, and hops against the 2,2'-azobis(2-amidinopropane) dihydrochloride-induced oxidation of an aqueous dispersion of linoleic acid. *J. Agric. Food Chem.* **48**, 1129-1134 (2000).
5. Niki, E. Free radical initiators as source of water- or lipid-soluble peroxy radicals. *Methods Enzymol.* **186**, 100-108 (1990).
6. Yamamoto, Y., Haga, S., Niki, E., *et al.* Oxidation of lipids. V. Oxidation of methyl linoleate in aqueous dispersion. *Bull. Chem. Soc. Jpn.* **57(5)**, 1260-1264 (1984).
7. Culbertson, S.M. and Porter, N.A. Unsymmetrical azo initiators increase efficiency of radical generation in aqueous dispersions, liposomal membranes, and lipoproteins. *J. Am. Chem. Soc.* **122**, 4032-4038 (2000).

### Related Products

AMVN - Cat. No. 82225 • Angeli's Salt - Cat. No. 82230

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman warrants only to the original customer that the material will meet our specifications at the time of delivery.

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have any obligation or liability, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees. Buyer's exclusive remedy and Cayman's sole liability hereunder shall be limited to a refund of the purchase price, or at Cayman's option, the replacement, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our Warranty and Limitation of Remedy located on our website and in our catalog.

Copyright Cayman Chemical Company, 01/21/2010

### Cayman Chemical

#### Mailing address

1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

#### Phone

(800) 364-9897  
(734) 971-3335

#### Fax

(734) 971-3640

#### E-Mail

custserv@caymanchem.com

#### Web

www.caymanchem.com