

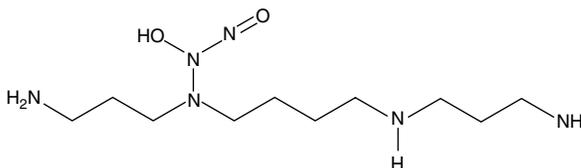
# Product Information



## Spermine NONOate

Item No. 82150

**CAS Registry No.:** 136587-13-8  
**Formal Name:** (Z)-1-[N-[3-aminopropyl]-N-[4-(3-aminopropylammonio)butyl]-amino]diazene-1-ium-1,2-diolate  
**MF:** C<sub>10</sub>H<sub>26</sub>N<sub>6</sub>O<sub>2</sub>  
**FW:** 262.4  
**Purity:** ≥98%  
**Stability:** ≥1 year at -80°C  
**Supplied as:** A crystalline solid  
**UV/Vis.:** λ<sub>max</sub>: 252 nm ε: 8,000  
**Misc:** Hygroscopic • Oxygen sensitive



### Laboratory Procedures

For long term storage, keep Spermine NONOate sealed under nitrogen at -80°C. It should be stable for at least one year. The crystals are sensitive to moisture and become discolored on exposure to air. Keep the vial sealed until use unless your laboratory is equipped with a glove box with an inert atmosphere for the handling of air sensitive compounds.

Spermine NONOate dissociates to the free amine and nitric oxide in a pH-dependent manner following first order kinetics. Alkaline solutions of NONOates (in 0.01 M NaOH) are very stable and can be stored at 0°C for 24 hours. Spermine NONOate is highly soluble in water and relatively concentrated solutions can be prepared for further dilution. To initiate the release of nitric oxide, add a portion of the stock alkaline solution of Spermine NONOate to excess buffer of pH 7.0-7.4. The half-life of Spermine NONOate is 39 minutes at 37°C in 0.1 M phosphate buffer (pH 7.4). The decomposition of the NONOate is nearly instantaneous at pH 5.<sup>1</sup>

The intact Spermine NONOate has a characteristic UV absorbance with an absorbance maximum at 252 nm (ε = 8,500 M<sup>-1</sup> cm<sup>-1</sup>), permitting quantitation in aqueous solutions.<sup>1</sup> The concentration of the basic stock solution of Spermine NONOate can be measured by UV if there is any uncertainty about the condition under which it was prepared or stored.

The concentration of Spermine NONOate required to produce 50% relaxation in a norepinephrine-constricted strip of isolated rabbit aorta is 6.2 μM.<sup>1</sup> The IC<sub>50</sub> for the inhibition of DNA synthesis in A375-C6 human melanoma cells is 24 μM.<sup>2</sup> Spermine NONOate, at a concentration of 1 mM, provides significant protection in Chinese hamster cells (V79 cells) against superoxide- and hydrogen peroxide-induced cytotoxicity.<sup>3</sup>

### References

1. Maragos, C.M., Morley, D., Wink, D.A., *et al.* Complexes of •NO with nucleophiles as agents for the controlled biological release of nitric oxide. Vasorelaxant effects. *J. Med. Chem.* **34**, 3242-3247 (1991).
2. Maragos, C.M., Wang, J.M., Hrabie, J.A., *et al.* Nitric oxide/nucleophile complexes inhibit the *in vitro* proliferation of A375 melanoma cells via nitric oxide release. *Cancer Res.* **53**, 564-568 (1993).
3. Wink, D.A., Hanbauer, I., Krishna, M.C., *et al.* Nitric oxide protects against cellular damage and cytotoxicity from reactive oxygen species. *Proc. Natl. Acad. Sci. USA* **90**, 9813-9817 (1993).

### Related Products

For a list of related products please visit: [www.caymanchem.com/catalog/82150](http://www.caymanchem.com/catalog/82150)

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

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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.

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### 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](mailto:custserv@caymanchem.com)

#### Web

[www.caymanchem.com](http://www.caymanchem.com)