

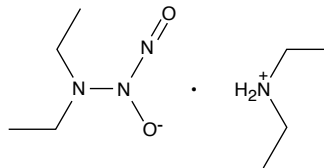
Product Information



Diethylamine NONOate

Catalog No. 82100

CAS Registry No.:	56329-27-2
Formal Name:	Diethylammonium (Z)-1-(N,N-diethylamino)diazen-1-ium-1,2-diolate
Synonyms:	DEA NONOate; DEA/NO
MF:	$C_4H_{10}N_3O_2 \cdot C_4H_{12}N$
FW:	206.3
Purity:	≥98%
Stability:	≥1 year at -80°C
Supplied as:	A crystalline solid
UV/Vis.:	λ_{max} : 250 nm ϵ : 6,500



Laboratory Procedures

For long term storage, keep diethylamine NONOate sealed under nitrogen at -80°C. It will 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.

Diethylamine NONOate is supplied as a crystalline solid. A stock solution may be made by dissolving the diethylamine NONOate in an organic solvent purged with an inert gas. Diethylamine NONOate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of diethylamine NONOate is approximately 25 mg/ml in ethanol and 2 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of diethylamine NONOate can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of diethylamine NONOate in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Diethylamine NONOate dissociates to the free amine and NO 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. Diethylamine NONOate is highly soluble in water and relatively concentrated solutions can be prepared for further dilution. To initiate the release of NO, add a portion of the stock alkaline solution of diethylamine NONOate to excess buffer of pH 7.0-7.4. The half-life of diethylamine NONOate is 2 minutes and 16 minutes at 37°C and 22-25°C, respectively, in 0.1 M phosphate buffer (pH 7.4). Diethylamine NONOate liberates 1.5 moles of NO per mole of parent compound.^{1,2} The decomposition of NONOates is nearly instantaneous at pH 5.¹

Diethylamine NONOate is a nitric oxide (NO) donor. The intact diethylamine NONOate has a characteristic UV absorbance at 250 nm ($\epsilon = 6,500 \text{ M}^{-1}\text{cm}^{-1}$), permitting quantitation in aqueous solutions.¹ The concentration of the basic stock solution of diethylamine NONOate can be measured by UV if there is any uncertainty about the condition under which it was prepared or stored.

The concentration of diethylamine NONOate required to produce 50% relaxation in a norepinephrine-constricted strip of isolated rabbit aorta is 0.19 μM .¹ The IC_{50} for the inhibition of DNA synthesis in A375-C6 human melanoma cells and for inhibition of O⁶-methylguanine-DNA-methyltransferase activity by diethylamine NONOate is 128 μM and 80 μM , respectively.^{3,4}

References

1. Maragos, C.M., Morley, D., Wink, D.A., *et al. J. Med. Chem.* **34**, 3242-3247 (1991).
2. Keefer, L.K., Nims, R.W., Davies, K.M., *et al. Methods Enzymol.* **268**, 281-293 (1996).
3. Maragos, C.M., Wang, J.M., Hrabie, J.A., *et al. Cancer Res.* **53**, 564-568 (1993).
4. Laval, F. and Wink, D.A. *Carcinogenesis* **5**, 443-447 (1994).

Related Products

Dipropylentriamine NONOate - Cat. No. 82110 • DETA NONOate - Cat. No. 82120 • MAHMA NONOate - Cat. No. 82130 • PAPA NONOate - Cat. No. 82140 • PROLI NONOate - Cat. No. 82145 • Spermine NONOate - Cat. No. 82150 • Sulpho NONOate - Cat. No. 83300

WARNING: THIS PRODUCT IS NOT INTENDED OR APPROVED FOR HUMAN OR VETERINARY USE. USE OF THIS PRODUCT FOR HUMAN OR ANIMAL TESTING IS EXTREMELY HAZARDOUS AND MAY RESULT IN DISEASE, SEVERE INJURY, OR DEATH.

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 under separate cover to the MSD supervisor at your institution.

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