

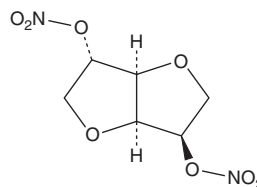
# PRODUCT INFORMATION



## Isosorbide Dinitrate

Item No. 23990

CAS Registry No.: 87-33-2  
Formal Name: 1,4:3,6-dianhydro-D-glucitol, 2,5-dinitrate  
Synonym: NSC 80038  
MF:  $C_6H_8N_2O_8$   
FW: 236.1  
Purity:  $\geq 98\%$   
Supplied as: A solid  
Storage:  $-20^\circ\text{C}$   
Stability:  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Isosorbide dinitrate is supplied as a solid. A stock solution may be made by dissolving the isosorbide dinitrate in the solvent of choice, which should be purged with an inert gas. Isosorbide dinitrate is slightly soluble in chloroform and methanol.

### Description

Isosorbide dinitrate is an organic nitrate ester and nitric oxide (NO) donor in the same class as nitroglycerin.<sup>1</sup> It induces vasodilation with  $IC_{50}$  values of 0.56 and 1.82  $\mu\text{M}$  for isolated precontracted rabbit femoral vein and artery, respectively.<sup>2</sup> Isosorbide dinitrate increases oxygenation of tumor tissue *in vivo* in a mouse xenograft model.<sup>3</sup> It also inhibits platelet aggregation *in vitro* and *in vivo* at concentrations in the micromolar range.<sup>4</sup> Formulations containing isosorbide dinitrate have been used for the treatment of angina pectoris.

### References

1. Ahlner, J., Andersson, R.G., Torfgard, K., *et al.* Organic nitrate esters: Clinical use and mechanisms of actions. *Pharmacol. Rev.* **43**(3), 351-423 (1991).
2. Toyoda, J., Hisayama, T., and Takayanagi, I. Nitro compounds (isosorbide dinitrate, 5-isosorbide mononitrate and glyceryl trinitrate) on the femoral vein and femoral artery. *Gen. Pharmacol.* **17**(1), 89-91 (1986).
3. De Caterina, R., Giannessi, D., Bernini, W., *et al.* Organic nitrates: Direct antiplatelet effects and synergism with prostacyclin. Antiplatelet effects of organic nitrates. *Thromb. Haemost.* **59**(2), 207-211 (1988).
4. Jordan, B.F., Misson, P., Demeure, R., *et al.* Changes in tumor oxygenation/perfusion induced by the no donor, isosorbide dinitrate, in comparison with carbogen: Monitoring by EPR and MRI. *Int. J. Radiat. Oncol. Biol. Phys.* **48**(2), 565-570 (2000).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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