

# PRODUCT INFORMATION

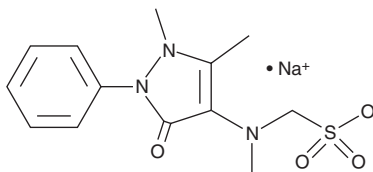


## Metamizole (sodium salt)

Item No. 15771

**CAS Registry No.:** 68-89-3  
**Formal Name:** 1-[(2,3-dihydro-1,5-dimethyl-3-oxo-2-phenyl-1H-pyrazol-4-yl)methylamino]methanesulfonic acid, monosodium salt

**Synonym:** Dipyrone  
**MF:** C<sub>13</sub>H<sub>16</sub>N<sub>3</sub>O<sub>4</sub>S • Na  
**FW:** 333.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 238, 267 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

Metamizole (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the metamizole (sodium salt) in the solvent of choice. Metamizole (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of metamizole (sodium salt) in ethanol is approximately 20 mg/ml and approximately 30 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 metamizole (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of metamizole (sodium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Metamizole is a nonopioid prodrug that is rapidly hydrolyzed to the analgesic and antipyretic metabolites 4-methylaminoantipyrine (MAA) and 4-aminoantipyrine (AA).<sup>1</sup> It inhibits COX-1 and COX-2 activity (IC<sub>50</sub> = ~150 µg/ml for both in cell-free assays), as well as reduces increases in intracellular calcium levels induced by the TRPA1 agonist AITC in isolated rat and mouse dorsal root ganglia and IMR-90 human fibroblasts (IC<sub>50</sub>s = 30-91 µM in patch-clamp assays).<sup>2,3</sup> Metamizole (6, 12, and 25 µg/ml) inhibits ADP- and epinephrine-induced platelet aggregation in human platelet-rich plasma (hPRP).<sup>4</sup> It prevents fever induced by LPS, TNF-α, and IL-6, but not arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) or prostaglandin E<sub>2</sub> (PGE<sub>2</sub>; Item No. 14010), in rats when administered at a dose of 120 mg/kg.<sup>5</sup> Metamizole (250 and 500 mg/kg) increases the paw withdrawal threshold in the paw pressure test, indicating analgesic activity, in rat models of carrageenan-induced acute pain and postoperative incision pain.<sup>6</sup>

### References

1. Rogosch, T., Sinning, C., Podlewski, A., *et al.* *Bioorg. Med. Chem.* **20(1)**, 101-107 (2012).
2. Campos, C., de Gregorio, R., García-Nieto, R., *et al.* *Eur. J. Pharmacol.* **378(3)**, 339-347 (1999).
3. Nassini, R., Fusi, C., Materazzi, S., *et al.* *Br. J. Pharmacol.* **172(13)**, 3397-3411 (2015).
4. Papp, J., Sandor, B., Vamos, Z., *et al.* *Clin. Hemorheol. Microcirc.* **56(1)**, 1-12 (2014).
5. De Souza, G.E.P., Cardoso, R.A., Melo, M.C.C., *et al.* *Inflamm. Res.* **51(1)**, 24-32 (2002).
6. Ince, I., Aksoy, M., Ahiskalioglu, A., *et al.* *J. Invest. Surg.* **28(3)**, 173-180 (2015).

#### 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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