**PRODUCT INFORMATION**

**Milrinone**  
Item No. 13357

<table>
<thead>
<tr>
<th>CAS Registry No.:</th>
<th>78415-72-2</th>
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<tbody>
<tr>
<td>Formal Name:</td>
<td>1,6-dihydro-2-methyl-6-oxo-[3,4'-bipyridine]-5-carbonitrile</td>
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<tr>
<td>Synonym:</td>
<td>WIN 47,203</td>
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<tr>
<td>MF:</td>
<td>C_{12}H_{9}N_{3}O</td>
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<tr>
<td>FW:</td>
<td>211.2</td>
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</tbody>
</table>

**Purity:** ≥98%  
**UV/Vis.:** $\lambda_{\text{max}}$: 214, 270, 344 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**

Milrinone is supplied as a crystalline solid. A stock solution may be made by dissolving the milrinone in the solvent of choice, which should be purged with an inert gas. Milrinone is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of milrinone in these solvents is approximately 0.5 and 0.3 mg/ml, respectively.

**Description**

Milrinone is an inhibitor of type 3 phosphodiesterases (PDEs), inhibiting recombinant PDE3A and PDE3B with $IC_{50}$ values of 0.45 and 1 μM, respectively. It is selective for PDE3 over PDE1, PDE2, PDE4, PDE5, and PDE7 ($IC_{50}$ = 263, >300, 17.5, 49.1, and 58.3 μM, respectively). Milrinone (0.1-1 mg/kg) has positive inotropic effects, increasing cardiac contractile force in anesthetized dogs with a concomitant increase in heart rate but not blood pressure. It also increases contractile force in models of propranolol- and verapamil-induced heart failure in anesthetized dogs when administered at an initial dose of 30 μg/kg followed by a continuous 3 μg/kg per minute infusion. Milrinone has vasodilatory effects as well, decreasing mean aortic pressure and increasing venous compliance in anesthetized dogs when administered at an initial dose of 10 μg/kg followed by a continuous 1.7-2.4 μg/kg per minute infusion. Formulations containing milrinone have been used in the treatment of heart failure.

**References**