**Bupivacaine**  
*Item No. 16618*

**CAS Registry No.:** 38396-39-3  
**Formal Name:** 1-butyl-N-(2,6-dimethylphenyl)-2-piperidinecarboxamide  
**MF:** C\textsubscript{18}H\textsubscript{28}N\textsubscript{2}O  
**FW:** 288.4  
**Purity:** ≥98%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid

**Laboratory Procedures**  
For long term storage, we suggest that bupivacaine be stored as supplied at -20°C. It should be stable for at least two years.

Bupivacaine is supplied as a crystalline solid. A stock solution may be made by dissolving the bupivacaine in the solvent of choice. Bupivacaine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of bupivacaine in ethanol and DMF is approximately 30 mg/ml and approximately 25 mg/ml in DMSO.

Bupivacaine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, bupivacaine should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Bupivacaine has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Bupivacaine is an amino-amide anesthetic that binds to the intracellular portion of voltage-gated sodium channels and blocks sodium influx into nerve cells, preventing the generation of an action potential.\(^1\) At 100 µM, it has been reported to inhibit the uptake of dopamine in striatal synaptosomes by 47%.\(^2\)

**References**  

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