Cordarone

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CORDARONE

**Functional Groups**
Amiodarone hydrochloride has a ratio of 6 hydrophobic to 4 hydrophilic groups, with one basic group and 9 neutral groups. Despite the fact that there are more hydrophobic groups than hydrophilic, this drug is insoluble in water due to the butyl substituent and the two aromatic rings with alkenes, as well as the iodines' electronegativity being the same as carbon. Depending on the molecule, three to five or fewer carbon atoms per hydrophilic group would make the molecule more water-soluble, but this molecule has 25 carbon atoms.

**Chemical Names**
- (2-Benzyl-3-benzofuranyl)-4-[2-(diethanolamine)ethoxy]-3,5-dioleophenyl methanesulfonyl chloride
- 2-Benzyl-3-benzofuranyl A-2 (diethanolamine)ethoxy]-3,5-dioleophenyl ketone hydrochloride
- 2-Benzyl-3-(3,5-dioleophenyl)-A-2 (diethanolamine)ethoxy]-benzofuran hydrochloride

**Chemical Formula**
C₂₂H₂₃NO₃S Cl

**Classification**
Antiarrhythmic Class III

**Trade Names**
- Cordarone
- Naxetone
- Pacerone

**Uses**
This drug is used for the preventive treatment and treatment of life-threatening ventricular arrhythmias and supraventricular arrhythmias (especially atrial fibrillation).

**How the drug is processed by the body:**
In tablet form, amiodarone HCl is absorbed by way of the digestive system. As little as 22% or as much as 86% is absorbed. Once absorbed, this medication prevents or suppresses irregular heart rhythms by slowing down electrical impulses in the heart. Subsequently, amiodarone hydrochloride is broken down by the liver and excreted through the bile duct, small intestine and then the liver again, by way of enzymes CYP2C8 and 3A4. It is then excreted via bile and feces (and breast milk, during lactation).

**Molar Mass Calculation**
- 25 moles C * (12.01 g / mole C) = 300.25 g
- 50 moles H * (1.008 g / mole H) = 50.40 g
- 2 moles N * (14.01 g / mole N) = 28.02 g
- 1 mole O * (16.00 g / mole O) = 16.00 g
- 1 mole Cl * (35.45 g / mole Cl) = 35.45 g
- Molar mass of amiodarone hydrochloride = 681.18 g / mole

**Water Solubility**
At 0.17 g/100 ml, amiodarone HCl is insoluble in water.

**Literature Value for Molar Mass**
681.78 g amiodarone HCl / mole

**Dosing**
The maintenance dose of Cordarone is 400 to 600 mg daily in one to two doses.

For this project, the minimum dose of 400 mg daily was selected, so one would take two 200-mg tablets daily.

**References**