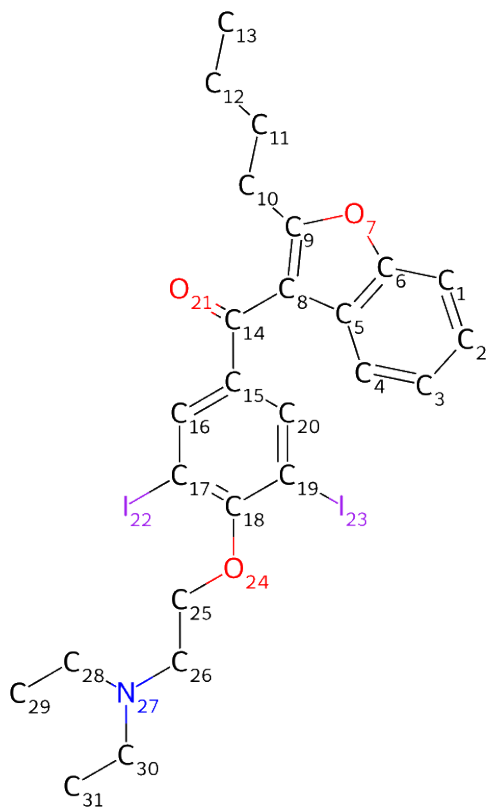


# C-oxidation BDE Energy Report for: amiodarone

This report covers the results for bond dissociation enthalpies (BDE) and solvent accessible surface area (SASA) calculations performed for amiodarone. Oxidation propensity is established using C-H BDE. The lower the C-H BDE values the higher the propensity for C-oxidation. Details for the density functional theory (DFT) calculations and overall workflow are explained at the end of this document.

## BDE and SASA



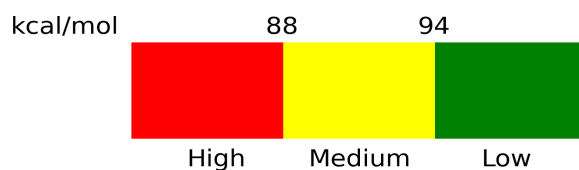
Atom	BDE (kcal/mol)	Propensity	SASA (Å <sup>2</sup> )
C1	114.76	Low	16.30
C2	112.6	Low	16.82
C3	112.62	Low	13.28
C4	114.28	Low	9.25
C10	78.52	High	0.84
C11	96.49	Low	0.34
C12	95.68	Low	0.52
C13	99.39	Low	6.03

C20	111.05	Low	4.70
C25	94.94	Low	0.13
C26	77.16	High	0.33
C28	86.41	High	0.64
C29	99.17	Low	5.80
C30	86.44	High	0.65
C31	99.65	Low	5.82

### Missing Sites:

C16.

### Risk Scale:



### Calculation Details

Conformational search calculations were performed only for the base ground state molecule. The lowest energy conformer was selected to generate radicals and run optimization DFT calculations. DFT calculations were performed using Gaussian with B3LYP level of theory and 6-31G(d,p) basis set. The BDE protocol was adapted from: *Lienard, P., Gavartin, J., Boccardi, G., & Meunier, M. (2015). Predicting drug substances autoxidation. Pharmaceutical research, 32, 300-310.*