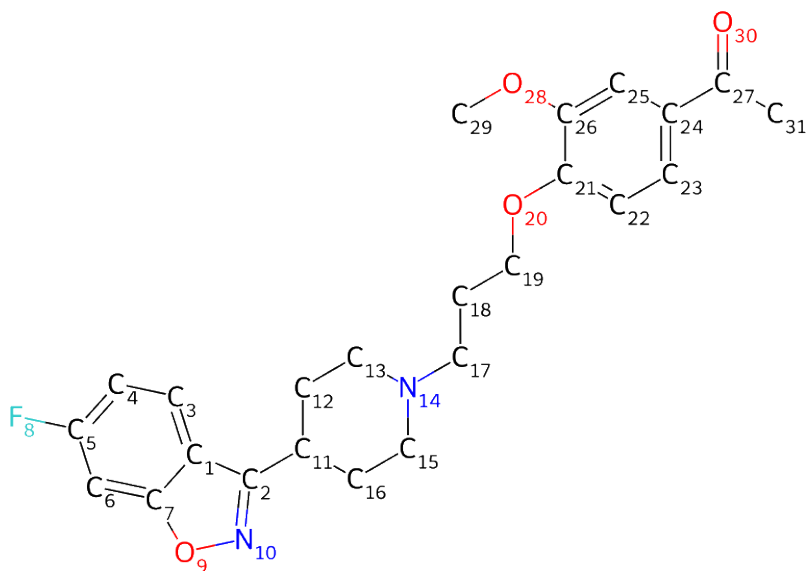


# C-oxidation BDE Energy Report for: iloperidone

This report covers the results for bond dissociation enthalpies (BDE) and solvent accessible surface area (SASA) calculations performed for iloperidone. 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> )
C3	112.99	Low	9.50
C4	115.68	Low	15.68
C6	117.79	Low	16.25
C11	85.15	High	0.00
C12	100.0	Low	0.57
C13	90.81	Moderate	0.51
C15	91.34	Moderate	0.50
C16	99.66	Low	0.57
C17	91.02	Moderate	0.37
C18	98.3	Low	0.35
C19	94.49	Low	1.15
C22	111.93	Low	8.62
C23	111.41	Low	12.18

C25	113.89	Low	7.43
C29	97.24	Low	9.62
C31	95.21	Low	8.60

**Missing Sites:**

None

**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.*