



## Calculate the ligand density of a bonded phase of an HPLC column – How To

The ligand density can be calculated using the Berendsen-de Galan equation:

$$\alpha = 10^6 \%C / (10^2 MW_{\text{carbon}} nC - \%C MW_{\text{ligand}}) SBET$$

where  $\alpha$  is the ligand density ( $\mu\text{mol}/\text{m}^2$ ),  $\%C$  is the percent carbon (%),  $MW_{\text{carbon}}$  is the molecular weight of carbon (g/mol),  $nC$  is the number of carbon atoms per bonded ligand,  $MW_{\text{ligand}}$  is the molecular weight of the organic bonded ligand (g/mol), and  $SBET$  is the specific surface area of silica material ( $\text{m}^2/\text{g}$ ).

For example, the ligand density of the Cogent UDC-Cholesterol™ stationary phase comes out to approximately  $1.5 \mu\text{mol}/\text{m}^2$  using this equation.

**MicroSolv Technology Corporation**

9158 Industrial Blvd. NE, Leland, NC 28451

tel. (732) 380-8900, fax (910) 769-9435

Email: [customers@mtc-usa.com](mailto:customers@mtc-usa.com)

Website: [www.mtc-usa.com](http://www.mtc-usa.com)