

Recent Thermodynamic and Spectroscopic Studies of  
 $C_{60}F_{18}$

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Recently, fullerene derivatives have attracted much interest both for their potential applications and for their original chemistry. Halofullerenes, especially pure fluorofullerenes, have been synthesized in macroscopic amounts and, therefore, studied rather extensively with experimental methods. Among these compounds the peculiarities of the  $C_{60}F_{18}$  make it one of the most remarkable and intriguing. Much of the interest in this fluorofullerene comes from its "crown-like" structure and the related high polarity.

In this contribution the present status of the knowledge of the  $C_{60}F_{18}$  thermodynamic properties will be reviewed and, when necessary, updated. In particular, the role of the estimates which are necessary in analyzing the experimental data will be scrutinized. In this connection recent computational and experimental results of the vibrational properties will be reported and discussed.