

14.2.2 Presentation of EPR data and experimental conditions

At least the following items should be specified in presentation of *EPR data* to facilitate transfer of spectral information:

- (a) If in solution, name of the solvent (or matrix) and concentration of the solution; for solid materials, methods of sample preparation and mounting
- (b) Temperature of the sample and how it is controlled
- (c) Type of sample cell (e.g. aqueous flat cell)
- (d) Type of resonator used, microwave frequency (GHz or MHz), power level (mW) incident on the resonator and loading information (e.g. dewar insert used); whether the frequency and power level are calibrated or taken from the spectrometer settings; power saturation distorting the spectrum, if any, must be so stated.

Note: The commonly used term "cavity resonator" is replaced by a generic term "resonator", since various types of non-cavity resonators are now in use.

- (e) If Zeeman field modulation is used, frequency (MHz or Hz) and amplitude (mT) of modulation, and whether they are calibrated or from the spectrometer settings
- (f) Type of standard sample, if used for field calibration and/or quantitation of the magnetic species
- (g) Method of *g-factor* measurement and experimental uncertainties

When *EPR spectra* are graphically presented, the following information for abscissa and ordinate should be supplied in addition to the above items:

- (a) If the spectra are obtained by analog field scan, the field scan rate, otherwise, the field step size
- (b) Total field extent and/or field calibration marker and method of field calibration
- (c) Markers indicating the point in a line where the *g-factor* is measured; use of *g-factors* in place of field scale is discouraged.
- (d) Ordinate information, if the ordinate is not the direct spectrometer output (e.g. computer processed normalization)
- (e) Presentation mode, e.g. "the first derivative of absorption"

- (f) Filtering information (e.g. analog time constant, digital smoothing specifications, etc.)

Other conventions in graphical presentation of the spectra:

- (g) The Zeeman field increases to the right.
- (h) The phase should be adjusted so that the start of the first low field line in V_1 mode has a positive excursion