Analytical techniques

A-Level Chemistry · Vocabulary in context

Word	Example
chromatography /krəʊmə'tɒgrəfi/	**Chromatography** separates the colours in ink.
thin-layer chromatography /θɪn 'leɪə krəʊmə'tɒgrəfi/	**Thin-layer chromatography** uses a plate coated with silica.
stationary phase /'steɪʃənəri feɪz/	The paper is the **stationary phase**.
mobile phase /'məʊbaɪl feɪz/	The solvent is the **mobile phase**: it moves up the paper.
baseline /'beɪslaɪn/	Draw the **baseline** in pencil near the bottom of the paper.
solvent front /'sɒlvənt frʌnt/	Mark the **solvent front** before the paper dries.
gas/liquid chromatography /gæs 'lɪkwɪd krəʊmə'tɒgrəfi/	**Gas/liquid chromatography** can test a driver's breath for alcohol.
retention time /rɪ'tenʃn taɪm/	Ethanol has a **retention time** of 3 minutes on this column. 3 minutes
NMR /ˌen em 'ɑː/	**NMR** shows how the hydrogen atoms in a molecule are arranged.
chemical environment /'kemɪkl en'vaɪrənmənt/	The two CH3 groups in propanone have the same **chemical environment**. CH3
proton /'prəʊtɒn/	A **proton** has a positive charge.
chemical shift /'kemɪkl ʃɪft/	The **chemical shift** of this peak is 2.1 ppm. 2.1 ppm

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splitting /'splɪtɪŋ/	The **splitting** of a peak shows how many hydrogens are next to it.
singlet /'sɪŋglɪt/	A peak with no neighbouring hydrogens is a **singlet**.
doublet /'dʌblət/	A peak next to one hydrogen is a **doublet**.
triplet /'trɪplɪt/	A peak next to two hydrogens is a **triplet**.
quartet /kwɔː'tet/	A peak next to three hydrogens is a **quartet**.
multiplet /'mʌltɪplɪt/	A peak with many small parts is a **multiplet**.
tetramethylsilane /'tetrəmiːθɪlsɪleɪn/	**Tetramethylsilane** gives the peak at 0 ppm. 0 ppm
deuterated solvent /'djuːtəreɪtɪd 'sɒlvənt/	CDCl3 is a **deuterated solvent**: it gives no hydrogen peaks. CDCl3