Glossary

Absorption Retention of a solute by partitioning into a liquid or liquidlike stationary phase coated on or bonded to a surface.

Accuracy The agreement between an experimental result (a single measurement or the mean of several replicate measurements) and the true or theoretical value.

Activation The process of heating an adsorbent layer to drive off moisture and convert it to its most attractive or retentive state.

Activity The relative strength of the surface of a sorbent such as silica gel or alumina in adsorption chromatography. Activity is reduced by adding water or another polar modifier that is attracted by hydrogen bonding to the active sites.

Activity grades (Brockmann activity grades) A standard grading system for the activity (adsorptivity) of alumina based on deactivation with water. Grade I is anhydrous alumina and has the highest activity. Grades II, III, IV, and V contain 3%, 6%, 10%, and 15% (by weight) water, respectively.

Additive A substance added to the mobile phase to improve solute separation or detection.

Adsorption The attraction between the surface atoms of a solid and an external molecule by intermolecular forces such as hydrogen bonds, London forces, electrostatic forces, and charge transfer forces. The adsorbent is the stationary phase for adsorption TLC.

Alumina layer An aluminum oxide layer that is available with basic, neutral, or acid modifications and is used in normal-phase adsorption TLC.

Amino layer A propylamino layer used in normal bonded phase TLC or as a weak anion exchanger.

Analyte A solute that is to be identified or, more often, quantitatively determined by thin-layer chromatography or other method.

Analytical TLC Thin-layer chromatography performed on 100–250 μm layers for the purpose of separation, identification, or quantification of substances.

Anion exchange The mode of TLC that uses a layer with a structure, such as a bonded amino group, that can separate anions.

Anticircular TLC Development of a layer from an outer circle of initial zones toward the center.

Argentation TLC Thin-layer chromatography using a layer, usually silica gel, impregnated with silver nitrate for the purpose of improving the separation of certain compounds.

Ascending development The usual mode of thin-layer chromatography development in which the mobile phase moves upward by capillary action of the sorbent, as opposed to circular, descending, or horizontal development.

Azeotrope (azeotropic mixture) A liquid mixture of two or more substances that behaves like a single substance in that the vapor produced by partial evaporation of the liquid has the same composition as the liquid.

Band Chromatographic zone, usually in the shape of a horizontal line rather than a round spot.