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isosbestic point

Wavelength, wavenumber or frequency at which the total absorbance of a sample does not change during a chemical reaction or a physical change of the sample.
Notes:

1. A simple example occurs when one molecular entity is converted into another that has the same molar absorption coefficient at a given wavelength. As long as the sum of the concentrations of the two molecular entities in the solution is held constant there will be no change in absorbance at this wavelength as the ratio of the concentrations of the two entities is varied.
2. The name derives from the Greek words: isos: equal, the same, and sbestos: extinguishable.
3. Contrary to a widely accepted idea, the existence of an isosbestic point does not prove that the reaction is a quantitative conversion of one species into a unique other species or that an equilibrium exists between only two species. The observation of isosbestic points only indicates that the stoichiometry of the reaction remains unchanged during the chemical reaction or the physical change of the sample, and that no secondary reactions occur during the considered time range, since $A_\lambda\, l^{-1} = \sum_{i=1}^{n} \varepsilon_i(\lambda)\, c_i$ is invariant (A_λ is the absorbance at wavelength λ, l is the optical path, ε_i is the molar decadic absorption coefficient of the species i of concentration c_i). For the reaction A + B → c C + d D + e E, with c, d, and e the percentages of the products C, D, and E, an isosbestic point will be observed at every wavelength where the condition $\varepsilon_A + \varepsilon_B = c\,\varepsilon_C + d\,\varepsilon_D + e\,\varepsilon_E$, provided that the values of the percentages c, d, and e remain constant during the chemical reaction or the physical change. The use of the obsolete term isoabsorption point is not recommended.

Source:
PAC, 2007, *79*, 293 *(Glossary of terms used in photochemistry, 3rd edition (IUPAC Recommendations 2006))* on page 359

