

## **collisional broadening**

**Also contains definitions of:** foreign-gas broadening, resonance broadening

*of a spectral line*

, van der Waals broadening

*of a spectral line*

*of a spectral line*

Collisions of the emitting or absorbing particle with other particles cause collisional broadening as well as collisional shift of the spectral line. When collisions occur between unlike, neutral particles the term foreign-gas broadening is used, or van der Waals' broadening when both collision partners are neutral. When the colliding particles are of the same species, the term resonance broadening is employed. The term Lorentz broadening was previously used for neutral particle collision broadening, and Holtsmark broadening for cases of van der Waals' broadening when collisions took place with like particles. Both terms are now discouraged. Stark broadening refers to collisions with charged particles or particles with a strong permanent electrical dipole moment. Whereas a strong chaotic electrical field causes Stark broadening, an applied static electrical field induces a Stark shift.

### **Source:**

PAC, 1985, 57, 1453 (*Nomenclature, symbols, units and their usage in spectrochemical analysis - V: Radiation sources (Recommendations 1985)*) on page 1463

Orange Book, p. 122