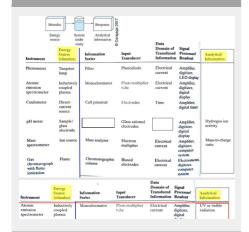
Cheatography

CM3242 Instrumental Analysis Cheat Sheet by rissajam via cheatography.com/67936/cs/17101/

| Definitions | |
|--------------------|---|
| Spectroscop y | Interaction of radiation, traditionally electromagnetic radiation, with matter |
| Spectrometr y | Measurement of the intensity of radiation |
| Spectrophot ometry | Quantitative measurement of light absorption and transmission as function of the wavelength |
| Absorbance | Log measure of the amt of light that is absorbed when passing though a substance |
| | Beer's Law: A=loglo/lt |

Components of spectroscopic instruments



Figures of Merit

Sensit High, steep curve so that for every ivity small change in conc, there is a large change in signal

Signal Compares level of desired signal to

to level of background noise. Mean of noise signal/standard deviation of noise. ratio Large S/N >3 times that SD of noise (S/N)

Specif High responsiveness to target analyte icity

Figures of Merit (cont)

Detection Lowest analyte conc. that can be limit measured at a certain confidence level. 1) Run solvent/blank multiple times 2) Signal for LOD=mean of blank +3SD of blank. In conc. below detection limit, cannot measure sample because don;t know if signal is from analyte or

solvei

Dynamic Wide, linear concentration range range that can be determined using the calibration curve ie. calibration curve to be proportional

Accuracy Closeness of a measured value to a standard value (reference

sample)

Precision Closeness of 2 or >

measurements to each other ..

Speed

Ease and convenience

Skill As conc. decrease, we are limited required by prep error and intrumental error of (signal fluctuates) ie. % error will operator increase

Cost and availability of equipment

Per-sample cost

Relative We are reaching LOD of standard instrument thus decrease in deviation concentration, RSD increases (RSD)

standard deviation/ mean

...% =



By rissajam

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