

Integrate a peak with a shoulder – How to

It is always better to have baseline separation between a main peak and any nearby minor peaks.

However, this is not always possible and you may have to deal with integration of a peak with a minor shoulder or peak present.

It is less accurate to integrate from the base to the point where the tail meets the shoulder peak. Instead, it is generally preferable to integrate from base to base because this includes the whole tail area of the main peak.

In determining whether the overlap of the main peak and the shoulder peak is acceptable or not, the USP <621> guidelines state that you can establish a system suitability criterion for **peak-to-valley ratio** (p/v):

$$p/v = H_p/H_v$$

where H_p is the height above the extrapolated baseline of the minor peak and H_v is the height above the extrapolated baseline at the lowest point of the curve separating the minor and major peaks.
