MICROSOLV

Allowed Adjustments to USP Methods - Tips & Suggestions

Date: 27-SEPTEMBER-2020 Last Updated: 4-OCTOBER-2025

The current change criteria for USP <621> (Chromatography) were significantly updated in December 2022 to allow greater flexibility in method adjustments while maintaining system suitability. Here's a summary of the key allowable changes we found using Copilot.:

✅ Allowed Adjustments Without Revalidation (if System Suitability Passes with changes)

Column Parameters

- Column Length & Particle Size:
    - You may adjust the column length and/or particle size **as long as the L/dp ratio** (length/particle size) remains within **−25% to +50%** of the original.
- Internal Diameter:
    - Can be changed even without altering particle size or length.

Mobile Phase Composition

- Minor components can be adjusted by **±30% relative**, but no component should change more than **±10% absolute**.

pH and Buffer

- pH: ±0.2 units (unless otherwise specified).
- Buffer concentration: ±10%.

Injection Volume

- Can be adjusted using a specific formula to maintain proportionality with other method parameters.

Column Temperature

- Isocratic methods: ±10°C
- Gradient methods: ±5°C

Gradient Methods

- Previously not allowed, gradient adjustments are now permitted, provided system suitability and selectivity are maintained.

Detector Wavelength

- No changes allowed.

🧪 System Suitability Requirements Must Still Be Met

Even with these adjustments, the method must still meet system suitability criteria such as:

- Resolution
- Tailing factor
- RSD of replicate injections
- Selectivity and elution order of impurities
- Signal to Noise remains within guidelines

NOTE: *It is highly recommended before you make any adjustments to your current method, you obtain approvals from your Regulatory Affairs department or Laboratory Management and consult current publication of <621> for updates..*

📚 References

- USP Official Harmonization Notice[2]
- Modernization Guidelines with SPP Columns[3]

COGENT HPLC Columns™

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