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Recommendations for process engineering characterization of single-use bioreactors and mixing systems by using experimental methods (2nd Edition)

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Abstract:

Since the mid-2000s, the use of single-use bioreactors (SUB) and single-use mixing systems (SUM) in biopharmaceutical research and production has increased enormously in terms of scope and diversity. This means that single-use technology (SUT) in all process steps – especially in laboratory and pilot scale – is now of considerable importance for biopharmaceuticals and biosimilars. SUB and SUM are mainly used in processes where protein-based biotherapeutics from mammalian cell cultures are the target product. In addition, SUT is also used for the cultivation of plant cell cultures, microorganisms and algae, as well as for special products in the food and cosmetics sector [DECHEMA 2011], [Lehmann 2014], [Eibl and Eibl 2019].

Keywords: single-use bioreactors (SUB), single-use mixing systems (SUM), pilot scale, protein-based biopharmaceuticals, cell culture, microbial culture