

What are purity grades?

Chemical purity grades are a standard used across the life sciences to ensure that reagents are properly tested and qualified to be used in the research and manufacture of therapies. Purity grades are assigned to the raw materials used to manufacture reagents so the purity grade of the final product will reflect the grade of its components.

Why are they important?

Using the appropriate chemical purity grade for your specific application can help ensure that there won't be impurities in your reagents that could impact the accuracy of your results.

Grade	Definition	Suitability	Example applications	Example reagents
ACS	Often regarded as a gold standard for meeting or exceeding the standards set by the American Chemical Society (ACS). Purity of equal to or greater than 95% is required.	Reagents are suitable for food, drug, and medical applications as well as general protocols requiring strict quality specifications.	Bacterial and viral culture	Media, buffers, and solutions
Reagent	Often considered equivalent to ACS grade, although no standard specifications exist.	Reagents are suitable for food, drug, and medical applications as well as general protocols requiring strict quality specifications. Frequently, these are the solutions or dilutions of ACS grade reagents.	Bacterial and viral culture	Media, buffers, and solutions
USP	Meets or exceeds requirements set by the United States Pharmacopeia (USP).	Reagents are suitable for food, drug, medical, and general laboratory applications.	Bacterial and viral culture	Media, buffers, and solutions
NF	Meets or exceeds requirements set by the National Formulary (NF).	Reagents are suitable for food, drug, medical, and general laboratory applications.	Bacterial and viral culture	Media, buffers, and solutions
BP	Meets or exceeds requirements set by the British Pharmacopoeia (BP).	Reagents are suitable for food, drug, medical, and general laboratory applications.	Bacterial and viral culture	Media, buffers, and solutions
JP	Meets or exceeds requirements set by the Japanese Pharmacopoeia (JP).	Reagents are suitable for food, drug, medical, and general laboratory applications.	Bacterial and viral culture	Media, buffers, and solutions
EP	Meets or exceeds requirements set by the European Pharmacopoeia (PhEur, EP).	Reagents are suitable for food, drug, medical, and general laboratory applications.	Bacterial and viral culture	Media, buffers, and solutions
Multi-compendial	Meets or exceeds requirements set by more than one pharmacopeia.	Reagents are suitable for food, drug, medical, and general laboratory applications.	Bacterial and viral culture	Media, buffers, and solutions

Note: ACS, Reagent, and USP-NF grades are typically equivalent but please review requirements to ensure the grade is appropriate for application.

