

GRADES OF PURITY FOR CHEMICALS

The following is a partial listing of designations which have been generally adopted to indicate different degrees of quality and primary uses of laboratory chemicals. Grades of purity are listed in laboratory chemical catalogs and also on the labels of the chemical containers. The grades are listed by decreasing degrees of purity.

Reagent. High purity for analytical use. Bottles are often labeled to show lot analysis and/or maximum limits of impurities.

ACS. Meets reagent specifications of the American Chemical Society. Bottles are often labeled to show lot analysis and/or maximum limits of impurities.

Chemically Pure (CP). Suitable for routine use. Lot analysis not specified.

USP. Suitable for pharmaceutical use. Meets the specifications of the United States Pharmacopeia.

NF. Suitable for pharmaceutical use. Meets the specifications of the National Formulary.

Pharmaceutical Grade. Designates products listed in the USP and NF compendia.

Practical. Principally organic compounds of medium purity often purified from technical grade. Considered suitable for most syntheses.

Purified. Superior to technical grade, being free from excessive foreign matter. Suitable for most purposes except analysis.

Technical, Commercial, or Industrial. Chemicals of ordinary commercial purity. Not refined for laboratory use.

Reagent or ACS grades are preferred for analytical use when high purity is important. For many routine experiments and syntheses, chemically pure grade or lower grades can usually be used. Most household chemicals are purified grade or better. They can be used in most experiments and activities with no adverse effects on results. Always pretest any materials in the experiment/demonstration with proper precautions.