2-keto-D-Glucose

Item No. 20908

CAS Registry No.: 1854-25-7
Formal Name: D-arabino-hexos-2-ulose
Synonym: D-Glucosone
MF: C$_6$H$_{10}$O$_6$
FW: 178.1
Purity: $\geq 95\%$
Supplied as: A solid
Storage: -20°C
Stability: $\geq 2$ years

Laboratory Procedures

2-keto-D-Glucose is supplied as a solid. A stock solution may be made by dissolving the 2-keto-D-glucose in the solvent of choice, which should be purged with an inert gas. 2-keto-D-Glucose is slightly soluble in methanol.

2-keto-D-Glucose is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

2-keto-D-Glucose has been used as a building block in the synthesis of carbohydrates.$^1$ It is an intermediate in the conversion of D-glucose (Item No. 23733) into D-fructose that was originally isolated from a variety of fungi, algae, and shellfish.$^2$ It has slow-onset, long-lasting antioxidant properties in an electron paramagnetic resonance (EPR) assay.$^3$ 2-keto-D-Glucose has also been found as a glucose degradation product in heat-sterilized peritoneal dialysis fluids.$^4$

References