

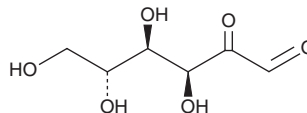
PRODUCT INFORMATION



2-keto D-Glucose

Item No. 20908

CAS Registry No.: 1854-25-7
Formal Name: D-arabino-hexos-2-ulose
Synonym: D-Glucosone
MF: C₆H₁₀O₆
FW: 178.1
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

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

- Huwig, A., Danneel, H.-J., and Giffhorn, F. Laboratory procedures for producing 2-keto-D-glucose, 2-keto-D-xylose and 5-keto-D-fructose from D-glucose, D-xylose and L-sorbose with immobilized pyranose oxidase of *Peniophora gigantea*. *J. Biotechnol.* **32(3)**, 309-315 (1994).
- Liu, T.E., Wolf, B., Geigert, J., *et al.* Convenient, laboratory procedure for producing solid D-arabino-hexos-2-ulose (D-glucosone). *Carb. Res.* **113(1)**, 151-157 (1983).
- Kanzler, C., Haase, P.T., and Kroh, L.W. Antioxidant capacity of 1-deoxy-D-erythro-hexo-2,3-diulose and D-arabino-hexo-2-ulose. *J. Agric. Food Chem.* **62(13)**, 2837-2844 (2014).
- Mittelmaier, S., Fünfroeken, M., Fenn, D., *et al.* Identification and quantification of the glucose degradation product glucosone in peritoneal dialysis fluids by HPLC/DAD/MSMS. *J. Chromatogr. B Analyt. Technol. Biomed. Life Sci.* **878(11-12)**, 877-882 (2010).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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