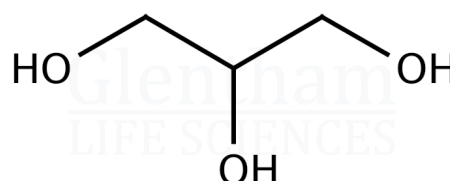


Certificate of Analysis

Product Name	Glycerol, 99.5%, Ph. Eur., USP, Ultrapure
Glentham Code	GC5551
CAS Number	56-81-5
EINECS	200-289-5
MDL Number	MFCD00004722
Batch Number	322AXG
Molecular Weight	92.09
Molecular Formula	$C_3H_8O_3$
Storage Temp.	+20°C



Property	Specification	Batch 322AXG
Physical Description	Clear, colourless liquid	Clear, colourless liquid
Identification	According to Ph. Eur., USP	Conforms
Solubility (20% in water)	Clear, colourless solution	Conforms
Acidity or Alkalinity	≤ 0.2ml (of 0.1M NaOH required)	≤ 0.1 ml
Refractive Index	1.470 - 1.475	1.4737
Aldehydes	≤ 10ppm	Conforms
Esters	≥ 8.0ml (of 0.1M HCl required)	9.1ml
Diethylene Glycol	≤ 0.1%	Conforms
Any Individual Impurity	≤ 0.1% (with a retention time ≤ glycerol, Ph. Eur.)	Conforms
Total Impurities	≤ 0.5% (with a retention time ≥ glycerol, Ph. Eur.)	Conforms
Any Individual Impurity	≤ 0.1% (USP)	Conforms
Sugars	To pass Ph. Eur. test	Conforms
Chlorides	≤ 10ppm	≤ 2ppm
Sulphates	≤ 20ppm	Conforms
Halogenated Compounds	≤ 35ppm	≤ 5ppm
Chlorinated Compounds	≤ 30ppm	≤ 5ppm
Fatty Acids and Esters	≤ 1.0ml (of 0.5M NaOH required)	≤ 0.2ml
Colour	To pass USP test	Conforms
Specific Gravity	≥ 1.249	1.2626
Heavy Metals (as Pb)	≤ 5ppm	≤ 1ppm
Sulphated Ash	≤ 0.01%	Conforms
Arsenic (As)	≤ 3ppm	≤ 1ppm
Lead (Pb)	≤ 2ppm	Conforms
Cadmium (Cd)	≤ 1ppm	Conforms
Mercury (Hg)	≤ 1ppm	Conforms
Water	≤ 1.0%	≤ 0.1%
Assay	99.5 - 101.0 % (Ph. Eur. test)	99.9%

Certificate of Analysis

Assay	99.5 - 101.0 % (USP test)	99.9%
Pharmacopoeia Specification(s)	Ph. Eur., USP	Conforms
Specification Version	v1.1	
Manufacture Date	2024-09-30	
Re-Test Date	2031-01-16	

Glentham Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check www.glentham.com or contact us using the details above for the current version of this document.

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