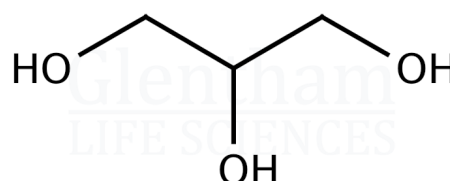


Certificate of Analysis

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	481END
Molecular Weight	92.09
Molecular Formula	$C_3H_8O_3$
Storage Temp.	+20°C



Property	Specification	Batch 481END
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)	0.06ml
Refractive Index	1.470 - 1.475	1.474
Aldehydes	≤ 10ppm	<10ppm
Esters	≥ 8.0ml (of 0.1M HCl required)	9.6ml
Diethylene Glycol	≤ 0.1%	<0.1%
Any Individual Impurity	≤ 0.1% (with a retention time ≤ glycerol, Ph. Eur.)	<0.1%
Total Impurities	≤ 0.5% (with a retention time ≥ glycerol, Ph. Eur.)	<0.5%
Any Individual Impurity	≤ 0.1% (USP)	<0.1%
Sugars	To pass Ph. Eur. test	Conforms
Chlorides	≤ 10ppm	<2ppm
Sulphates	≤ 20ppm	<20ppm
Halogenated Compounds	≤ 35ppm	<5ppm
Chlorinated Compounds	≤ 30ppm	<5ppm
Fatty Acids and Esters	≤ 1.0ml (of 0.5M NaOH required)	0.13ml
Colour	To pass USP test	Conforms
Specific Gravity	≥ 1.249	1.262
Heavy Metals (as Pb)	≤ 5ppm	<1ppm
Sulphated Ash	≤ 0.01%	0.008%
Arsenic (As)	≤ 3ppm	<0.1ppm
Lead (Pb)	≤ 2ppm	<1ppm
Cadmium (Cd)	≤ 1ppm	Conforms
Mercury (Hg)	≤ 1ppm	Conforms
Water	≤ 1.0%	0.11%
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	2024-06-18	
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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