

## Certificate of analysis

**Product name:** Glycamed® 99,7%  
**Chemical product:** Glycerin, min. 99,5%  
**CAS No.** 56-81-5  
**EG No.** 200-289-5  
**Appearance:** Clear, colourless, hygroscopic, syrupy liquid with only mild, characteristic odour, is neither strong nor unpleasant.  
**Origin:** Pure vegetable basis. The quality meets the requirements of the European Food Safety Authority concerning the classification as food additive E 422 Glycerin.  
**Batch number:**  
**Date of production:**

Parameter	USP/FCC/EP*	Results
Glycerin	98,0 % - 101,0 %	99,93 %
Identification by GC	AK pass	AK pass
Appearance of solution	clear, colourless	clear, colourless
Acidity or Alkalinity	<=0,2 ml NaOH 0,1N	0,04 ml NaOH 0,1N
Refractive index(nD20)	1,470 - 1,475	1,4735
Aldehydes	<=10 ppm	< 10 ppm
Esters	>=8 ml HCl 0,1N	9,10 ml HCl 0,1N
Impurities related substances (GC)	pass	pass
Impurities before Glycerin peak	<=0,1 %	0,03 %
Impurities after Glycerin peak	<=0,5 %	< 0,5 %
Diethyleneglycol	<=0,1 %	< 0,1 %
Fatty Acids and Esters (expressed as butyric acid)	<=0,1 %	< 0,1 %
Halogenated compounds	<=35 ppm	< 35 ppm
Chlorinated compounds (as Cl)	<=30 ppm	< 30 ppm
Sugars	pass	pass
Chlorides (as Chlorine)	<=10 ppm	< 10 ppm
Sulfates	<=20 ppm	< 20 ppm
Heavy metals (as Pb)	<=5 ppm	< 5 ppm
Lead (Pb)	<=2 ppm	< 2 ppm
Arsenic	<=1 ppm	< 1 ppm
Cadmium	<=1 ppm	< 1 ppm
Mercury (Hg)	<=1 ppm	< 1 ppm
Water	<=2,0 %	0,03 %
Sulphated ash	<=0,01 %	< 0,01 %
Density at 20°C	1,260 g/cm³ - 1,264 g/cm³	1,262 g/cm³
APHA-Colour ASTM 1209	<=10	2
Residue on Ignition	<=70 ppm	< 70 ppm
Acrolein, Glucose and NH3 combinations	pass	pass
1,2,3-Butantriol and 1,2,4-Butantriol	<=0,05 %	< 0,05 %
free 3-MPCD	<=0,05 mg/kg	< 0,05 mg/kg
Aerobic Plate count	<=100 cfu/g	< 100 cfu/g
Coliforms	<=10 cfu/g	< 10 cfu/g
Yeast and Mould	<=10 cfu/g	< 10 cfu/g

\* Conforming to the standards of the European Pharmacopeia (EP), the United States Pharmacopeia (USP) and the Food Chemicals Codex (FCC).

Storage Information: Approx. 1 year when stored in refined steel or aluminium at temperature of max. 40°C and kept under nitrogen blanket. The shelf life may decrease at higher temperature.