

**Certificate of analysis**
**AZ-17-1187**


<b>Product name:</b>	Glycamed® 99,7%
<b>Chemical product:</b>	Glycerin, min. 99,5%
<b>CAS No.</b>	56-81-5
<b>EG No.</b>	200-289-5
<b>Appearance:</b>	Clear, colourless, hygroscopic, syrupy liquid with only mild, characteristic odour, is neither strong nor unpleasant.
<b>Origin:</b>	Pure vegetable basis. The quality meets the requirements of the European Food Safety Authority concerning the classification as food additive E 422 Glycerin.
<b>Batch number:</b>	AZ-17-1187
<b>Date of production:</b>	21.02.17

Parameter	USP/FCC/EP*	Results
Glycerin	98,0 % - 101,0 %	99,92 %
Identification by GC	pass	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	1,4734
Aldehydes	<=10 ppm	< 10 ppm
Esters	>=8 ml HCl 0,1N	9,2 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 %
Diethylenglycol	<=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 %	0,01 %
Sulphated ash	<=0,01 %	< 0,01 %
Density at 20°C	1,260 g/cm³ - 1,264 g/cm³	1,261 g/cm³
APHA-Colour ASTM 1209	<=10	3
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 Pharmacopoeia (EP), the United States Pharmacopoeia (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.

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