

CERTIFICATE OF ANALYSIS

Material	PROPYLENE GLYCOL USP/EP/FCC
Batch	87988507
Packaging	DPPL 1000 L
Quantity	10 500 kg
Manufakturing date	06. 09. 2021
Expire date	06. 09. 2024

Feature	units	Limits		Results
		min	max	
Monopropylene glykol	%	99,70	-	99,95
Dipropylene glykol	%	-	0,1	0,0380
Monoethylene glycol	%	-	0,1	N.N.
Diethylene glycol	%	-	0,1	N.N.
Water	%	-	0,1	0,008
APHA colour value	APHA	-	5	2
Turbidity	NTU	-	3	N.N.
Specific gravity at 25°C	-	1,0350	1,0370	1,0355
Refractive index	[n _d] 20°C	1,4310	1,4330	1,4330
Neutralisation number calc. as KOH	mg KOH/g	-	0,01	0,0016
Acidity (as CH ₃ COOH)	%	-	0,002	0,0002
Sulphated ash	mg/kg	-	70,0	N.N
Chloride	mg/kg	-	1,0	0,1
Sulphate	mg/kg	-	60,0	N.N
Distillation range	°C	185,0	189,0	Compliance
Oxidising substances		Compliance		Compliance
Reducing substances		Compliance		Compliance
Volatile organic substances		Compliance		Compliance
Heavy metals	mg/kg	-	5	Compliance
Iron	mg/kg	-	0,30	0,09
Arsenic	mg/kg	-	2,0	N.N
Lead	mg/kg	-	1	N.N





CENTRO-CHEM



System
zarządzania
ISO 9001:2015

www.tuv.com
ID 9105041525

Cadmium	mg/kg	-	0,50	N.N
Mercury	mg/kg	-	0,10	N.N

N.N. – value below quantitation limit

We certify that the results are consistent with the manufacturer's certificate.

The certificate was created electronically and is valid without signature.



Centro-chem sp. z o.o. sp. k., Turka 141 b, 20-258 Lublin
Tel.: +48 81 756 55 20, Fax: +48 81 756 55 10
www.centro-chem.pl • info@centro-chem.pl
NIP 713-23-39-236 • REGON 430932386 • KRS 0000822639
VAT EU PL7132339236



CENTRO-CHEM



System
zarządzania
ISO 9001:2015

www.tuv.com
ID 9105041525

CERTIFICATE OF ANALYSIS

Material	GLYCEROL 99,7 % USP/FCC/EP/E422
Chemical formula	$C_3H_8O_3$
Batch	AZ001110
Packaging	DPPL 1000 L
Quantity	7500 kg
Mfg date	06. 09. 2021
Exp date	06. 09. 2024

Parameters	unit	min.	max.	Result
Assay	%	98,0	101,0	99,92
Identification (GC)		Pass		Pass
Appearance		Clear and colourless		Pass
Acidity and alkality	ml NaOH 0,1N	-	0,2	0,04
Refractive index	nD ₂₀	1,470	1,475	1,4733
Aldehydes	ppm	-	10,0	≤ 10,0
Esters (ph. Eur)	ml HCL 0,1N	8,0	-	9,55
Impurities and related compounds (GC)		Pass		Pass
Impurities before glicerol peak	%	-	0,1	0,03
Impurities after glicerol peak	%	-	0,5	<0,5
Diethyleneglycol (GC)	%	-	0,1	≤0,1
Fatty acids and esters		Pass		Pass
Halogenated compounds	ppm	-	35,0	≤ 35,0
Chlorinated compounds (as Cl)	ppm	-	30,0	≤ 30,0
Sugar		pass (Ph. Eur)		Pass
Chloride	ppm	-	10,0	≤ 10,0
Sulphate	ppm	-	20,0	≤ 20,0
Heavy metals	ppm	-	5,0	≤ 5,0
Lead	ppm	-	2,0	< 2,0
Arsenic	ppm	-	1,0	< 1,0



Centro-chem sp. z o.o. sp.k., Turka 141 b, 20-258 Lublin

Tel.: +48 81 756 55 20, Fax: +48 81 756 55 10

www.centro-chem.pl • info@centro-chem.pl

NIP 713-23-39-236 • REGON 430932386 • KRS 0000822639

VAT EU PL7132339236



CENTRO-CHEM



System
zarządzania
ISO 9001:2015

www.tuv.com
ID 9105041525

Cadmium	ppm	-	1,0	< 1,0
Mercury	ppm	-	1,0	< 1,0
Water	%	-	2,0	0,02
Sulphated ash	%	-	0,01	<0,01
Density as 20 °C	g/cm ³	1,260	1,264	1,261
Coloure ASTM D1209	APHA	-	10	2
Residue after ignition	ppm	-	70	< 70
Acrolein, glucose and NH ₃ combinations	-	Pass (Ph. Eur)		Pass
1,2,3-butnatriole i 1,2,4-butantrirole	%	-	0,05	<0,05
Free 3-MPCD	mg/kg	-	0,05	<0,05
Aerobic plate account (APC)	cfu/g	-	100,0	< 100,0
Coliforms	cfu/g	-	10,0	< 10,0
Yeast and Mould	cfu/g	-	10,0	< 10,0

We certify that the results are consistent with a certificate of the manufacturer

The certificate was created electronically and is valid without signature.



Centro-chem sp. z o.o. sp.k., Turka 141 b, 20-258 Lublin

Tel.: +48 81 756 55 20, Fax: +48 81 756 55 10

www.centro-chem.pl • info@centro-chem.pl

NIP 713-23-39-236 • REGON 430932386 • KRS 0000822639

VAT EU PL7132339236