

QUALITY CERTIFICATE

Nº 024.24 – APRIL 02, 2024

Laboratório de Controle de Qualidade Cargill Novos Horizontes - Anápolis/GO  
 Viela VP 1E, Quadra 3, módulos 3, 4, 5 e 6 – DAIA – Anápolis/ GO  
 Telefone (62) 4015-1233 - [www.cargill.com.br](http://www.cargill.com.br)

Client identification	Name: Cargill Novos Horizontes Ltda Address: Viela VP 1E, Quadra 3, módulos 3, 4, 5 e 6 – DAIA – Anápolis/ GO
Product	Bidistilled glycerin USP
Seal of the control sample	14456
Date of receipt of the sample	01/04/2024
Date of the test (initial and final)	01/04/2024 and 02/04/2024

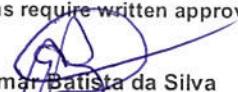
Data provided by client

Sample identification	Tank: 2603	Amount: 239,272 Kg
Lot	AN-024/24	
Production date	01/04/2024	
Expiration date (for packed product)	01/04/2026	Expiration date (for bulk product) 01/04/2025
Tank seal	14455 / 14454 / 14453	

Characteristic	Test Method	Specification	Unit	Results
Aspect at 25°C	USP	Clear, colorless, syrupy liquid, having a sweet taste. Has not more than a slight characteristic odor, which is neither harsh nor disagreeable.	-	Confers
Glycerol content (dry basis)		99.5 to 101.0 %	% m/m	100.4
Identification A – Infra-red	EP9thEd. /USP	Confers	-	Confers
Identification B – Ethylene and diethylene	USP	Diethylene glycol Max. 0.1 Ethylene glycol Max. 0.1	% m/m	<0.1 <0.1
Impurities and related substances	EP9thEd. /USP	Other impurities Max. 0.1 Total impurities Max. 1.0	% m/m	<0.1 <1.0
Identification C - GC	USP	Confers	-	Confers
Acidity or alkalinity	EP9thEd.	Max. 0.2mL NaOH 0.1M	mL	0.09
Refractive index	EP9thEd.	1.470 to 1.475	-	1.473
Aldehydes	EP9thEd.	Max. 10 ppm	ppm	<10 ppm
Esters	EP9thEd. /USP	Max. 1.0mL NaOH 0.5N	mL	0.43
Chlorinated Compounds	EP9thEd. /USP	Max. 30 ppm	ppm	<30 ppm
Chlorides	EP9thEd. /USP	Max. 10 ppm	ppm	<10 ppm
Water content	EP9thEd. /USP	Max. 0.50%	% m/m	0.10
Residue on ignition	EP9thEd. /USP	Max. 0.01%	% m/m	<0.01
Sulphates	USP	Max. 20 ppm	ppm	<20 ppm
Color	USP	Confers	-	Confers
Color	ASTM D1209	Max. 10	APHA	2
Relative density at 25°C	USP	Min. 1.249	-	1.256
pH in solution 10%	POP-GMP-QA-LAB-DG-026	5,0 A 7,5	-	7.02

\* Solubility: Is hygroscopic. Its solutions are neutral to litmus. Insoluble in chloroform, in ether, and in fixed and volatile oils. Miscible with water and with alcohol.

Plan and sampling procedure are the customer's responsibility. The results refer only to the sample test. The quality certificate shall only be reproduced in full. Partial reproductions require written approval of the laboratory.

  
 Edmar Batista da Silva  
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 Industrial Chemist Technician

This form is used for completion from page 2 onwards, as the first page is reserved for preface and scope, in accordance with PGS-GMP-001.