



**GEORGIA WAREHOUSE**  
3939 Royal Drive, Suite 139,  
Kennesaw, GA, 30144

**MICHIGAN WAREHOUSE**  
25991 Northline Commerce Dr.  
Unit 504 Taylor, MI 48180

**UTAH WAREHOUSE**  
647 West Billinis Road, Unit 1  
Salt Lake City, Utah 84119

**CHEMWORLD, LLC**  
Certificate of Analysis  
Glycerin, USP (99.7%)  
Natural Kosher  
Excipient Use Only  
Lot No.: 15-288-05  
Po.No.: 6000  
Date of Mfr: 10/15/15

Attn: Quality Control Manager

TEST, (METHOD)	SPECIFICATION	RESULT
Specific Gravity @ 25°C, (<841>)	1.249 minimum	1.2620
Assay, % Glycerol	Not less than 99.7%	100.0
Assay, Dry Basis (USP)	99.0 – 101.0%	100.04
Water, (Method I <921>)	0 - 5.0%	0.04
Fatty Acids & Esters, (USP)	0 - 1 ml 0.5N NaOH max.	0.1
Residue on Ignition, (<281>)	100 ppm maximum	0.001
Chloride, (<221>)	10 ppm maximum	< 10 ppm
Sulfate, (<221>)	20 ppm maximum	< 20 ppm
Heavy Metals, (<231>)	5 ppm maximum	< 5 ppm
Chlorinated Compounds, (USP)	30 ppm maximum	< 30 ppm
Appearance & Odor (Organoleptic)	Reference Standard	PASS
Residual Solvents, ( <i>Method IV</i> <467>)	Meets requirements	PASS
Identification A, IR Scan(USP)	Meets requirements	PASS
Identification B, GC (USP) ( <i>Diethylene Glycol and Ethylene Glycol Impurities</i> )	< 0.1% of each	PASS
Identification C, GC (USP)	Meets requirements	PASS
Related compounds, (USP)	All individual impurities <0.1% Total impurities < 1.0%	<0.1 <1.0
Color, USP	Passes Test	Pass
Odor, (Organoleptic)	Odorless	Odorless
Physical form	Clear liquid	Clear liquid

\*When stored in its original, unopened container at 35 - 95°F, this product has a minimum shelf-life of 2 year. Avoid exposure to extremely high or low temperatures. This product is excipient grade and not intended to be used as an active pharmaceutical ingredient or for specialist applications, such as parenteral, ocular, inhalation, open wound use, or applications that require sterile and/or pyrogen-free excipients. Glycerin products sold by Avatar Corporation are not for use in any application intended to produce vapor, fog, mist, smoke or aerosol, wherein there is a possibility of inhalation. Avatar Corporation expressly disclaims any and all liabilities related to the use of Glycerin in such applications. Refer to the MSDS materials provided with your product's shipment for additional information about proper use and potential hazards of these products.