



Certificate of Analysis
Refined Glycerin 99.7% (USP Grade)

PRODUCTION DATE : AUGUST 2, 2012

EXPIRY DATE : AUGUST 2, 2013

ANALYSIS / QUALITY : RESULT OF SAMPLES ARE AS FOLLOWING :

Description	: Pass	: Pass
Solubility	: Pass	: Pass
Appearance	: Clear and Free	: Clear and Free of Suspended Matter of Suspended Matter
Odor	: Characteristic	: Characteristic
Residual Solvents	: Compliant	: Compliant
Identification (A)-IR	: Pass	: Pass
Identification (B)-Limit of Eg and Deg		
- Diethylene Glycol (%)	: 0.10 max	: < 0.10
- Ethylene Glycol (%)	: 0.10 max	: < 0.10
Identification (C)		
Confirmation of glycerin by GC	: Pass	: Pass
Assay, Anhydrous Basis (%)	: 99.0-101	: 99.8
Inorganic Impurities :		
- Chloride Content (wt%)	: < 0.001	: < 0.001
- Sulfate Content (wt%)	: < 0.002	: < 0.002
- Heavy Metal as Pb (ppm)	: < 5 ug/g	: < 5
- Residue on Ignition	: 5mg/50gm max	: 4
Organic Impurities		
- Individual impurities (%)	: 0.10 max	: < 0.1
- Total impurities (%)	: 1.0 max	: < 0.5
- Chlorinated Compounds (wt%)	: < 0.003	: < 0.003
- Related Compounds	: Pass	: Pass
Fatty Acids & Esters		
(as m l of 0.5N NaOH/50gram)	: < 1ml	: 0.22
Specific Gravity (at 25/25 Deg C)	: 1.2613 min	: 1.2614
Water (wt%)	: 0.3 max	: 0.10
Color (color ,Pt-Co)	: 10 max	: 5