

## Certificate of Analysis

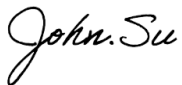
Date of Testing: 2022-05-12 18:46:43  
 Date of Next Testing: 2026-05-11 18:46:43  
 Product Name: **Isopropyl Alcohol**  
 CAS Number: 67-63-0  
 Specifications & Purity: for preparative chromatography,99.8%  
 Lot #: E2211266  
 SKU #: **I112023**  
**Analysis: 090713**

Parameter	Limit Values	Result
Density (20°C)	0.785-0.789	0.79
total of impurities apart from 2-butanol	0-0.3 (%)	0.13 %
Alkalinity	0-0.0002 (mg/g)	0.00 mg/g
Isopropylether (GC)	0-0.01 (%)	0.00 %
Water by Karl Fischer	0-0.05 (%)	0.01 %
Total combined yeasts/moulds count (TYMC)	0-10 (cfu/g)	4.50 cfu/g
Acidity	0-0.0002	0.00
Absorbance at 270 nm	0-0.03	0.01
Absorbance at 250 nm	0-0.1	0.01
Density (25°C)	0.783-0.787	0.79
Absorbance at 290 nm	0-0.02	0.00
Refractive index n <sub>20</sub> /D	1.376-1.378	1.38
Bacterial endotoxins	0-2.5 (IU/ml OR u/ml)	1.40 IU/ml OR u/ml
Absorbance at 230 nm	0-0.3	0.05
Absorbance at 310 nm	0-0.01	0.00
Total aerobic microbial count (TAMC)	0-100 (cfu/g)	49.00 cfu/g
Evaporation Residue	0-0.0001 (mg/L)	0.00 mg/L
Benzene and related substances (GC)	0-2 (ppm)	1.10 ppm
Purity(GC)	99.8-100 (%)	99.99 %
Appearance (I112023)	Colorless Liquid	Colorless liquid
Bile-tolerant gram-negative bacteria (absent in 1 g)	passes test	Passes test
Candida albicans (absent in 1 g)	passes test	Passes test
Escherichia coli (absent in 1 g)	passes test	Passes test
Infrared spectrum	Conforms to Structure	Conforms to Structure
Peroxides	Conforms	Conforms
Pseudomonas aeruginosa (absent in 1 g)	passes test	Passes test
Salmonella (absent in 10 g)	passes test	Passes test

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Parameter	Limit Values	Result
Staphylococcus aureus (absent in 1 g)	passes test	Passes test
The absorption curve is smooth	Conforms	Conforms

A handwritten signature in black ink that reads "John Su".

John Su  
QA & QC Manager