

**Isopropyl Alcohol 99%**

**Meets TT-I-735a Grade A and B / Meets ASTM D770**

**Catalog number: 231ASTM99**

Test	Mono-graph	Specification	Typical Result
Assay (corrected for water)	ACS	99.5% min	99.94 %
Assay	USP	NLT 99.0%	99.94 %
Specific Gravity	USP	0.783 - 0.787 @25°C	0.783
Specific Gravity	D-770	0.785 – 0.787 @ 20°C	0.787
Specific Gravity	D-770	0.782 – 0.784 @ 25°C	0.783
Specific Gravity	TT-I-735 Grade A	0.7862 – 0.7870 @ 20°C	0.7866
Specific Gravity	TT-I-735 Grade B	0.7862 – 0.7878 @ 20°C	0.7866
Identification A - Infrared Spectroscopy	USP	To Pass Test	Pass
Identification B	USP	To Pass Test	Pass
Identification C - Limit of Methanol	USP	NMT 0.02%	Pass
Refractive Index @ 20°C	USP	1.376-1.378	1.377
Solubility in water	ACS	To Pass Test	Pass
Water Miscibility	D-770	To Pass	Pass
Color, APHA	ACS	10 max	1
Color, APHA	D-770	10 max	1
Color, APHA	TT-I-735	10 max	1
Residue after Evaporation	ACS	0.001% max	0.000 %

Test	Mono-graph	Specification	Typical Result
Limit of Nonvolatile Residue	USP	NMT 2.5 mg (0.005%)	0.0 mg
Nonvolatile Matter	TT-I-735	0.002 g/100 mL max.	0.0 g/100 mL
Nonvolatile Matter	D-770	5 mg/100 mL max.	0 mg/100 mL
Titration Acid or Base	ACS	0.0001 meq/g max	0.0001 meq/g
Acidity	USP	NMT 0.70 ml of 0.020N NaOH is required	0.50 ml
Acidity (as acetic acid)	D-770	0.002% max.	LT 0.001%
Acidity (as acetic acid)	TT-I-735	0.002% max.	LT 0.001%
Carbonyl Compounds - Propionaldehyde	ACS	0.002% max	LT 0.002%
Carbonyl Compounds - Acetone	ACS	0.002% max	0.000 %
Limit of Volatile Impurities - Methanol	USP	NMT 0.02%	LT 0.02%
Limit of Volatile Impurities - Diethyl Ether	USP	NMT 0.1%	LT 0.1%
Limit of Volatile Impurities - Acetone	USP	NMT 0.1%	None Detected
Limit of Volatile Impurities - Diisopropyl Ether	USP	NMT 0.1%	LT 0.1%
Limit of Volatile Impurities - n-Propyl Alcohol	USP	NMT 0.1%	LT 0.1%
Limit of Volatile Impurities - 2-Butanol	USP	NMT 0.1%	LT 0.1%
Limit of Volatile Impurities - Individual unspecified	USP	NMT 0.1%	LT 0.1%
Limit of Volatile Impurities - Total	USP	NMT 1.0%	LT 0.1%
Absorbance @ 230nm	USP	NMT 0.30	0.09
Absorbance @ 250nm	USP	NMT 0.10	0.02
Absorbance @ 270nm	USP	NMT 0.03	0.00

Test	Mono-graph	Specification	Typical Result
Absorbance @ 290nm	USP	NMT 0.02	0.00
Absorbance @ 310nm	USP	NMT 0.01	0.00
Absorbance Curve	USP	The spectrum shows a steadily descending curve with no observable peaks or shoulders.	Pass
Water, wt%	ACS	NMT 0.2%	0.04 %
Water Determination	USP	NMT 0.5%	0.04 %
Water	D-770	0.2% max.	0.04 %
Water Content	TT-I-735 Grade A	0.10% max	0.04 %
Water Content	TT-I-735 Grade B	0.40% max	0.04 %
Distillation Range	TT-I-735	81.8°C – 83.0°C	Pass
Distillation Range	D-770	Distills entirely within 1.5°C range which shall include 82.3°C	Pass

### Certification and Compliance Statements

This product meets TT-I-735a Grade A and B / meets ASTM D770. All chemical tests indicate compliance with applicable specification requirements.

This product is not derived, nor does it come in contact with, any materials derived from bovine or other animal sources.

Greenfield products are for further commercial manufacturing, laboratory use, or research. Greenfield is not registered with the United States Food and Drug Administration (FDA) as a drug manufacturing facility. Greenfield products are not registered with the FDA as active pharmaceutical ingredients in drug manufacturing.

Appropriate/legal use of all products are the responsibility of the user and subject to applicable local laws and regulations.