



CERTIFICATE OF ANALYSIS

Product Name	Ethyl Alcohol 190 Proof Grain 95% by volume
Grade	ACS/USP Grade
Catalog #	111000190
Item #	100067
Batch #	210917-B000873
Date of Manufacture:	9/17/2021
Recommended Retest Date:	9/16/2024
Packaging Type	Pail Poly 5 Gal
Packaged by	Greenfield Global USA Inc, 58 Vale Road, Brookfield, CT 06804

TEST	MONO-GRAPH	SPECIFICATION	RESULT	UNITS
Assay (by GC, corrected for water)	ACS	NLT 95.0%	95.01	%
Proof	27CFR 30.23	Lot Analysis	190.0	
Assay (by specific gravity@15.56°C)	USP	94.9% - 96.0% (by volume)	95.01	%
Specific Gravity	USP	0.812 - 0.816 @ 15.56°C	0.8158	
Acetone/Isopropyl Alcohol	ACS	To Pass Test	Pass	
Color (APHA)	ACS	10 max	1	
Methanol	ACS	0.1% max	Pass	
Residue after Evaporation	ACS	0.001% , max	0.000	%
Solubility in Water	ACS	To Pass Test	Pass	
Substances Darkened by Sulfuric Acid	ACS	To Pass Test	Pass	
Substances Reducing Permanganate	ACS	To Pass Test	Pass	
Titration Acid	ACS	0.0005 meq/g max.	0.0001	meq/g
Titration Base	ACS	0.0002 meq/g max.	0.0001	meq/g
Acidity or Alkalinity	USP	The solution is pink (30µg/g, expressed as acetic acid)	Pass	
Clarity of Solution	USP	Sample solution A and Sample solution B show the same clarity	Pass	



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		as that of water, or their opalescence is not more pronounced than that of the Standard suspension A.		
Color of Solution	USP	The Sample solution has the appearance of water or is not more intensely colored than the Standard solution	Pass	
Identification Test A	USP	It meets the requirements of the test for specific gravity	Pass	
Identification Test C	USP	NMT 200 $\mu\text{L/L}$ (200ppm) of Methanol	Pass	
Limit of Nonvolatile Residue	USP	NMT 2.5 mg	0.0	mg
Organic Impurities - Acetaldehyde and Acetal	USP	NMT 10 $\mu\text{L/L}$, expressed as acetaldehyde	0	$\mu\text{L/L}$
Organic Impurities - Benzene	USP	NMT 2 $\mu\text{L/L}$	0	$\mu\text{L/L}$
Organic Impurities - Methanol	USP	NMT 0.5, corresponding to 200 $\mu\text{L/L}$	1	$\mu\text{L/L}$
Organic Impurities - Sum of all other impurities	USP	NMT 300 $\mu\text{L/L}$	0	$\mu\text{L/L}$
UV Absorbance	USP	NMT 0.40 at 240 nm	0.16	
UV Absorbance	USP	NMT 0.30 between 250 and 260 nm	0.06	
UV Absorbance	USP	NMT 0.10 between 270 and 340 nm	0.01	
UV Absorbance	USP	The spectrum shows a steadily descending curve with no observable peaks or shoulders	Pass	

Certification and Compliance Statements

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

Recommended retest period excludes UV Absorbance for pure Ethyl Alcohol unless packaged in glass or UV protected drums (see shelf life statement).



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No chemicals whatsoever are used as solvents at any point in the manufacture, processing or packaging of ethyl alcohol. Only Class 2 and Class 3 residual solvents may appear as impurities / related substances / low level contaminants in Ethanol.

Concentration of Class 2 Option 1 and Class 3 residual solvents is below limits in the current USP/NF General Chapter <467>.

This product is for further commercial manufacturing, laboratory or research use, and may be used as an excipient or a process solvent for pharmaceutical purposes. It is not intended for use as an active ingredient in drug manufacturing nor as a medical device or disinfectant. Appropriate/legal use of this product is the responsibility of the user.

This lot of Ethyl Alcohol 95% complies with all of the current requirements listed in the United States Pharmacopeia, and American Chemical Society monographs.

This document was electronically signed by Alexis Paul on 9/16/2021 4:10:30 PM to indicate Quality Assurance Approval and Release this document.