

PRODUCT SPECIFICATION

Ethanol, 100 Proof (50%) (grain derived ethanol)

This product meets all specifications listed in the most current USP/NF and FCC monographs with the exception of assay and specific gravity.

| TEST | Monograph | Specification |
|--------------------------------------|-------------|---|
| Assay (v/v) | Custom | 49.5% - 50.5% |
| Proof | 27CFR 30.23 | Lot Analysis |
| Specific Gravity @20°C | Custom | 0.9326 – 0.9306 |
| Specific Gravity @15.56°C | Custom | 0.9352 – 0.9332 |
| Identification Test B | USP | Conforms to Infrared Spectra |
| Clarity of Solution | USP | Sample Solution A & B show same clarity as that of water, or their opalescence is not more pronounced than that of Reference suspension A |
| Color of Solution | USP | The Sample solution has the appearance of water or is not more intensely colored than the Standard solution |
| Limit of Nonvolatile Residue | USP / FCC | The weight of the residue does not exceed 2.5mg <0.003% |
| Acidity or Alkalinity | USP | The solution is pink (30ppm, expressed as acetic acid) |
| Acidity (as acetic acid, wt%) | FCC | <0.003% |
| Alkalinity (as NH ₃) | FCC | <3 mg/Kg |
| Ultraviolet Absorbance | USP | NMT 0.40 at 240 nm NMT 0.30 between 250 nm and 260 nm NMT 0.10 between 270 nm and 340 nm |
| Volatile Impurities | USP | Methanol NMT 200ppm Acetaldehyde and Acetal NMT 10ppm Benzene NMT 2ppm Sum of all other impurities NMT 300ppm |
| Methanol | FCC | To Pass Test |
| Fuel Oil | FCC | To Pass Test |
| Ketones, Isopropanol | FCC | To Pass Test |
| Heavy Metals | FCC | NMT 0.5 mg/KG |
| Solubility in Water | FCC | To Pass Test |
| Substances Darkened by Sulfuric Acid | FCC | To Pass Test |
| Substances Reducing Permanganate | FCC | To Pass Test |