

I T E C
Refining and Marketing Company Ltd.



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GRAIN NEUTRAL SPIRITS (GNS) - 192 PROOF BEVERAGE ALCOHOL SPECIFICATIONS
(CORN FEEDSTOCK)

<u>Parameter</u>	<u>Limits</u>	<u>Method</u>
Ethanol, vol.% @ 20 Deg. C.	≥ 96.1	ASTM D 4052
Proof @ 15.56 Deg. C.	≥ 192	ASTM D 4052
Acidity, as acetic acid	≤ 10 ppm	ASTM D 1613
Acetaldehyde	≤ 5 ppm	ASTM D 5501-MOD
Methanol	≤ 5 ppm	ASTM D 5501-MOD
N-Propanol	≤ 5 ppm	ASTM D 5501-MOD
Higher Alcohols (as I-Propanol, N-Propanol, I-Butanol, N-Butanol & I-Amyl)	≤ 5 ppm	ASTM D 5501-MOD
Esters (as Ethyl Acetate)	≤ 5 ppm	ASTM D 5501-MOD
Permanganate Test @ 15 Deg. C.	≥ 40 minutes	ASTM D 1363
Color	≤ 10 platinum cobalt	ASTM D 1209
Appearance	Clear, Bright	Visual
Odor	Free from foreign odors	ASTM D 1296
Hydrocarbons	Pass	ASTM D 1722
Benzene	< 1 ppm	ASTM D 5501-MOD
Toluene	< 1 ppm	ASTM D 5501-MOD
Xylene	< 1 ppm	ASTM D 5501-MOD
Cyclohexane	< 1 ppm	ASTM D 5501-MOD
Total Sulfur by UV Fluorescence	< 1 ppm-wt	ASTM D 5453
Inorganic Chlorides	< 1 ppm	ASTM D 7328
Non volatile matter	≤ 1.5 mg/100 mL	ASTM D 1353
Alkalinity as ammonia	<0.0003 wt %	ASTM D 1614
1,4 Dioxane	≤ 0.01 mg/L	GLC/MS