

**ANP HYDRATED FUEL ETHANOL - AEHC  
(BRAZILIAN DOMESTIC SPECIFICATION)**

**SPECIFICATIONS TABLE  
FUEL HYDRATED ETHYL ALCOHOL  
(NR) REGULATION NO. 36 OF DECEMBER 6, 2005  
AGENCIA NACIONAL DE PETROLEO - ANP**

CHARACTERISTICS	UNIT	SPECIFICATION AEHC	METHOD	
			ABNT / NBR	ASTM (1)
Aspect	-	(2)		Visual
Color	-	(3)		Visual
Total Acidity (as acetic acid), max	mg/l	30	9866	D 1613
Electrical Conductivity, max	µS/m	500	10547	D 1125
Specific mass at 20° C	kg/m <sup>3</sup>	807.6 to 811.0 (4)	5992	D 4052
Alcoholic degree	% wt	92.6 to 93.8 (4)	5992	D 5501
pH		6.0 to 8.0	10891	D 6423
Residue after Evaporation, max (5)	mg/100 ml	5	8644	D 381
Hydrocarbons content, max (5)(7)(NR)	% vol.	Absent	13993	D 1722
Chlorides, max (5)	mg/kg	1	10894-10895	D 512(6)
Ethanol content, min (6)	% vol.	92.6	-	D 5501
Sulphates, max	mg/kg	4	10894/12120	D7318/7319/7328
Iron, max (8)	mg/kg	5	11331	-
Sodium, max (8) (NR)	mg/kg	2	10422	-

Note:

- (1) Can be applied as alternative methods for the evaluation of characteristics in the cases of alcohol import, exception to the method ASTM-D-4052, which can always be used as alternative method for the determination of specific mass.
- (2) Clear and free from impurities.
- (3) Colorless to yellowish. (NR)
- (4) Applied in the import and distribution of ethanol. The following limits for the specific mass and alcoholic degree of the Hydrated Alcohol: 805.0 to 811.0 and 92.6 to 94.7 respectively.
- (5) Limit permitted at the import and distribution, not being demanded for the analysis for the issuance of Quality Certificate by the producers. (NR).
- (6) Required when the alcohol is not produced from fermentation process.
- (7) Allowed 3.0% vol. of hydrocarbons in anhydrous ethanol imported for producers.
- (8) Measured only when contamination is suspected.

ABNT: ASSOCIAÇÃO BRASILEIRA DE NORMAS TÉCNICAS (BRAZILIAN ASSOCIATION OF TECHNICAL STANDARDS)  
NBR: NORMA BRASILEIRA (BRAZILIAN STANDARD)  
NR: NORMA REGULAMENTADORA (REGULATION STANDARD)