

## ETHANOL 99.9 DB

**PRODUCT CODE**  
**DESCRIPTION**

2019  
Ethyl alcohol of 99.99% (volume) purity denatured with Denotonium benzoate.

Properties	Units	Limits	Test Methods
Appearance		Clear and free from suspended matter	Visual; ASTM D4176
Colour	Pt-Co	2.5 max	ASTM D1209; ISO 6271
Water	mass %	0.15 max	ASTM D1364; ISO 760
Acidity as CH <sub>3</sub> COOH	mg/kg	30 max	ASTM D1613; ISO 1388/2
Carbonyls as acetaldehyde	mg/kg	20 max	ISO 1388/4; UOP 624
Ethanol (dry basis)	vol %	99.99 min	GC
Denatonium benzoate	mg/kg	8-12	HPLC; UV Spectrophotometric
Methanol	mg/kg	20 max	GC
Higher alcohols as iso-butanol	mg/kg	10 max	Komarowski; GC
Ester as ethyl acetate	mg/kg	50 max	BS 6392 Part 8; ISO 1388/9

Further Properties	Units	Typical values	Test Methods
Density at 20°C	g/ml	0.789	ASTM D4052; ISO 12185
Distillation at 101.3 kPa: Initial boiling point Dry point	°C °C	79 80	ASTM D1078; ISO 918
Residue on evaporation	mg/100ml	2	ASTM D1353; ISO 759
Water miscibility		Complete	ASTM D1722; ISO 1388-6

The sales Specification values are continuously checked, documented and stored within the scope of quality assurance.

Further properties are of an informational nature only and are not checked regularly. If the Sales Specifications are complied with, it can generally be assumed that all further properties and typical data conform to the values given.

## ETHANOL 99.9 UN (GENERAL)

**PRODUCT CODE** 2020  
**DESCRIPTION** Ethyl alcohol of 99.99% volume purity.

Properties	Units	Limits	Test Methods
Appearance		Clear and free from suspended matter	Visual; ASTM D4176
Colour	Pt-Co	2.5 max	ASTM D1209; ISO 6271
Water	mass %	0.15 max	ASTM D1364; ISO 760
Acidity as CH <sub>3</sub> COOH	mg/kg	30 max	ASTM D1613; ISO 1388/2
Ethanol (dry basis)	vol %	99.99 min	GC
Carbonyls as acetaldehyde	mg/kg	20 max	ISO 1388/4; UOP 624
Ester as ethyl acetate	mg/kg	50 max	ISO 1388/9; BS 6392 Part 8
Methanol	mg/kg	20 max	GC
Higher alcohols as iso-butanol	mg/kg	10 max	Komarowski; GC

Further Properties	Units	Typical values	Test Methods
Density at 20°C	g/ml	0.789	ASTM D4052; ISO 12185
Distillation at 101.3 kPa: Initial boiling point Dry point	°C °C	79 80	ASTM D1078; ISO 918
Water miscibility		Complete	ASTM D1722; ISO 1388-6
Residue on evaporation	mg/100ml	0.8	ASTM D1353; ISO 759

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Further properties are of an informational nature only and are not checked regularly. If the Sales Specifications are complied with, it can generally be assumed that all further properties and typical data conform to the values given.