

## Supply Specification

### Automotive fuels – Unleaded petrol – RON 98 E5

ÖNORM EN 228 (Issue 07/2017) – Super Plus 98 E5

Region: Austria

Version: 1.2

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Effective: 01.01.2020

Parameter	Method	Unit	Limit	Note
Visual appearance	visual	-	bright & clear	
Density at 15 °C	EN ISO 3675*), EN ISO 12185	kg/m <sup>3</sup>	720,0 – 775,0	
RON, Research octane number	EN ISO 5164	--	min. 98,0	1.
MOZ, Motor octane number	EN ISO 5163	--	min. 88,0	1.
Lead content	EN 237	mg/l	max. 5,0	2.
Sulfur content	EN ISO 20846*), EN ISO 20884*), EN ISO 13032	mg/kg	max. 10,0	
Manganese content	EN 16136	mg/l	max. 2,0	2.
Benzene content	EN 238, EN 12177*), EN ISO 22854*)	% (V/V)	max. 1,00	
Aromatics	EN ISO 22854*), EN 15553	% (V/V)	max. 35,0	
Olefins	EN ISO 22854*), EN 15553	% (V/V)	max. 18,0	
Copper strip corrosion (3h at 50°C)	EN ISO 2160	rating	class 1	
Existent gum content (solvent washed)	EN ISO 6246	mg/100 ml	max. 5	
Oxidation stability	EN ISO 7536	Minutes	min. 360	
Oxygen content	EN 1601*), EN 13132, EN ISO 22854*)	% (m/m)	max. 2,7	
Methanol**	EN 1601*), EN 13132, EN ISO 22854	% (V/V)	max. 1,0	
Ethanol**	EN 1601, EN 13132, EN ISO 22854*)	% (V/V)	min. 3,0 - max. 5,0	3./4.
Isopropyl alcohol (IPA)	EN 1601, EN 13132, EN ISO 22854*)	% (V/V)	Blending is limited by a total oxygen content of max. 2,7 % (m/m)	
Isobutyl alcohol (IBA)	EN 1601, EN 13132, EN ISO 22854*)	% (V/V)		
Tert-Butyl alcohol (TBA)	EN 1601, EN 13132, EN ISO 22854*)	% (V/V)		
Ether (≥ 5 carbon atoms)	EN 1601, EN 13132, EN ISO 22854*)	% (V/V)		
Other oxygen containing compounds	EN 1601, EN 13132, EN ISO 22854*)	% (V/V)		
Biogenic content**	-	% (V/V)	min. 4,6	4.

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Parameter	Method	Unit	Limit				Note
			Transition (Spring)	Summer	Transition (Autumn)	Winter	
Climate class** date ranges Period			01.03.-30.04	01.05.-30.09.	01.10.-31.10.	01.11.-29.02.	
Class			Note	A	Note	D	5.
Vapour pressure (VP)	EN 1316-1	kPa	Note	45,0 – 60,0	Note	60,0 – 90,0	5.
Evaporated							
at 70°C, E70		% (V/V)	Note	20,0 – 48,0	Note	22,0 – 50,0	
at 100°C, E100	EN ISO 3405	% (V/V)	46,0 – 71,0	46,0 – 71,0	46,0 – 71,0	46,0 – 71,0	
at 150°C, E150		% (V/V)	min. 75,0	min. 75,0	min. 75,0	min. 75,0	
Final Boiling Point		°C	max. 210	max. 210	max. 210	max. 210	
Distillation residue		% (V/V)	max. 2	max. 2	max. 2	max. 2	
Vapour Lock Index (VLI)	10 VP+7 E70	-	Note	-	Note	-	5.

Phosphor-, silicone- and halogen (Cl, Br) containing compounds are prohibited.

Measured values shall be rated according to EN ISO 4259.

#### Note:

- \*\*) Additional or more stringent requirements than ÖNORM EN 228
  - \*) In case of arbitration this test method is the basis for the assessment.
1. A correction factor of 0,2 shall be subtracted for the calculation of the final result before reporting. According to the requirements of European Directive 98/70/EG, including Amendment 2003/17/EG, 2009/30/EG, 2011/63/EU.
  2. The fuel shall not contain any metallic additives (e.g. ferrocene, MMT).
  3. Ethanol shall comply with requirements according EN 15376.
  4. The product contains a total of at least 4,6 % (V/V) of biogenic components made up of ethanol and ETBE (ethyl tertiary butyl ether), where 47% of the ETBE content are considered as biogenic component.

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#### Note:

5. Regulations concerning vapour pressure (DVPE), distillation point E70 and VLI for transition periods

Vapour pressure (DVPE) EN 13016-1	Transition (Spring)			Transition (Autumn)	
	01.03. -31.03.	01.04.-07.04	08.04.-30.04.	01.10.-15.10.	16.10.-31.10.
Period					
for Terminal Supply [kPa]	45,0 – 90,0	45,0 - 60,0	45,0 - 60,0	60,0 – 90,0	60,0 – 90,0
for Truck Liftings [kPa]	45,0 – 90,0	45,0 – 90,0	45,0 - 60,0	45,0 – 90,0	60,0 – 90,0
for Retail Site [kPa]	45,0 – 90,0	45,0 – 90,0	45,0 – 90,0	45,0 – 90,0	45,0 – 90,0

Distillation E70 EN ISO 3405	Transition (Spring)			Transition (Autumn)	
	01.03. -31.03.	01.04.-07.04	08.04.-30.04.	01.10.-15.10.	16.10.-31.10.
Period					
for Terminal Supply [%V/V]	20,0 – 50,0	20,0 – 48,0	20,0 – 48,0	22,0 – 50,0	22,0 – 50,0
for Truck Liftings [%V/V]	20,0 – 50,0	20,0 – 50,0	20,0 – 48,0	20,0 – 50,0	22,0 – 50,0
for Retail Site [%V/V]	20,0 – 50,0	20,0 – 50,0	20,0 – 50,0	20,0 – 50,0	20,0 – 50,0

VLI, vapour lock index 10 VP+7 E70	Transition (Spring)			Transition (Autumn)	
	01.03. -31.03.	01.04.-07.04	08.04.-30.04.	01.10.-15.10.	16.10.-31.10.
Period					
for Terminal Supply	max. 1150	-	-	-	-
for Truck Liftings	max. 1150	max. 1150	-	max. 1150	-
for Retail Site	max. 1150	max. 1150	max. 1150	max. 1150	max. 1150

|| Marks changes compared to the previous main version