

# EFIX S 98 GASOLINE 3, 4, 9, 10

## USE: FUEL FOR SPARK IGNITION ENGINES

PROPERTY	UM	LIMITS		TEST METHOD
		Min.	Max.	
RON Antiknock value		98,0	-	ASTM D 2699-23 <sup>2</sup> SR EN ISO 5164:2014 <sup>2</sup> / EN ISO 5164:2014 <sup>2</sup> / ISO 5164:2014 <sup>2</sup>
MON Antiknock value		86,0	-	SR EN ISO 5163:2014 <sup>2</sup> / EN ISO 5163:2014 <sup>2</sup> ISO 5163:2014 <sup>2</sup> / ASTM D 2700-23 <sup>2</sup>
Lead content <sup>8</sup>	mg/l	-	5,0	SR EN 237:2005 <sup>2</sup> / EN 237:2004 <sup>2</sup> / ASTM D 3237-22 <sup>2</sup> ASTM D 4052-22 <sup>2</sup> / ASTM D 1298-12b(2017)e1
Density (at 15 °C)	kg/m <sup>3</sup>	720,0	775,0	SR EN ISO 3675:2002 / SR EN ISO 3675:2002 / C91:2005 EN ISO 3675:1998 / ISO 3675:1998 SR EN ISO 12185:2003 <sup>2</sup> / EN ISO 12185:1996 <sup>2</sup> / ISO 12185:1996 <sup>2</sup>
Sulfur content	mg/kg	-	10,0	SR EN ISO 20846 :2020 <sup>2</sup> / EN ISO 20846:2019 <sup>2</sup> / ISO 20846 :2019 <sup>2</sup> / SR EN ISO 20884 :2020 <sup>2</sup> ; SR EN ISO 20884 :2020 <sup>2</sup> / A1 :2021 <sup>2</sup> / EN ISO 20884 :2019 <sup>2</sup> ; EN ISO :2019 <sup>2</sup> / A1 :2021 <sup>2</sup> / ISO 20884 :2019 <sup>2</sup> ; ISO 20884 :2019 <sup>2</sup> / Amd1 :2021 <sup>2</sup> ASTM D 2622-21 <sup>2</sup> / ASTM D 5453-19a <sup>2</sup>
Manganese content <sup>8</sup>	mg/l	-	2,0	EN 16135:2011 <sup>2</sup> / SR EN 16135:2012 <sup>2</sup> / IP 592/11 <sup>2</sup>
Oxidation stability <sup>8</sup>	minute	360	-	SR EN ISO 7536:2001 <sup>2</sup> / EN ISO 7536:1996 <sup>2</sup> / ISO 7536:1994 <sup>2</sup> ASTM D 525-12a(2019) <sup>2</sup>
Actual gums content (washed with solvents)	mg/100 ml	-	5	SR EN ISO 6246:2017 <sup>2</sup> ; SR EN ISO 6246:2017/A1 :2020 <sup>2</sup> / EN ISO 6246:2017 <sup>2</sup> ; EN ISO 6246 :2017/A1 :2019 / ISO 6246:2017 <sup>2</sup> ; ISO 6246:2017/AMD 1 :2019 <sup>2</sup> / ASTM D 381-22 <sup>2</sup>
Copper strip corrosion rating (3 h at 50 °C)	rating		class 1	SR EN ISO 2160-03 <sup>2</sup> / EN ISO 2160-98 <sup>2</sup> / ISO 2160-98 <sup>2</sup> ASTM D 130-12 <sup>2</sup>
Aspect	Clear and transparent			Visual inspection
Type of hydrocarbons content	% (v/v)			SR EN 15553:2022 <sup>2</sup> / EN 15553:2021 <sup>2</sup> SR EN ISO 22854:2021 <sup>2</sup> / EN ISO 22854:2021 <sup>2</sup> / ISO 22854:2021 <sup>2</sup>
- Olefins		-	18,0	
- Aromatics		-	35,0	ASTM D 1319-20a <sup>2</sup> / ASTM D 6839-21a
Benzene content	% (v/v)	-	1,00	SR EN ISO 22854:2021 <sup>2</sup> / EN ISO 22854:2021 <sup>2</sup> / ISO 22854:2021 <sup>2</sup> ASTM D 6839-21a
Oxygen content	% (m/m)	-	3,7	SR EN ISO 22854:2021 <sup>2</sup> / EN ISO 22854:2021 <sup>2</sup> / ISO 22854:2021 <sup>2</sup> ASTM D 6839-21a
Oxygenate compounds content	% (v/v)			
Methanol		-	3,0	
Ethanol <sup>5</sup>		-	10,0	
Iso-propil alcohol		-	12,0	SR EN ISO 22854:2021 <sup>2</sup> / EN ISO 22854:2021 <sup>2</sup> / ISO 22854:2021 <sup>2</sup>
Iso-butyl alcohol		-	15,0	
Tert-butyl alcohol		-	15,0	ASTM D 6839-21a
Ethers (5 or more C atoms)		-	22,0	
Other oxygenates		-	15,0	
Bio-component <sup>6</sup>	% (v/v)	To be reported		%(v/v) bio = %(v/v) bio-ethanol + 0,48x%(v/v) bio-ETBE
Distillation				ASTM D 86-23 <sup>2</sup>
Evaporated at 70 °C, E70	% (v/v)			SR EN ISO 3405:2019 <sup>2</sup>
- Summer <sup>1</sup>		22,0	50,0	EN ISO 3405:2019 <sup>2</sup>
- Winter <sup>1</sup>		24,0	52,0	ISO 3405:2019 <sup>2</sup>
- Transition <sup>1</sup>		22,0	52,0	
Evaporated at 100 °C, E100 (Summer <sup>1</sup> , Winter <sup>1</sup> , transition <sup>1</sup> )	% (v/v)	46,0	72,0	

Evaporated at 150 °C, E150 (Summer <sup>1</sup> , Winter <sup>1</sup> , transition <sup>1</sup> )	% (v/v)	75,0	-	
Final boiling point, FBP	°C	-	210	
Residue of distillation	% (v/v)	-	2,0	
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Vapour Pressure, VP	kPa			
- Summer <sup>1</sup>		45,0	60,0 <sup>7</sup>	SR EN 13016-1:2018 <sup>2</sup> / EN 13016-1:2018 <sup>2</sup>
- Winter <sup>1</sup>		60,0	90,0	ASTM D 5191-22 <sup>2</sup>
- transition <sup>1</sup>		45,0	90,0	
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Volatility Index, VLI				Calculation (10 VP + 7 E70)
- Summer <sup>1</sup>		-	-	
- Winter <sup>1</sup>		-	-	
- transition <sup>1</sup>		-	1164	

**NOTES:** 1) Summer - from May, 1 to September, 30; Transition: March 15 to April 30, October 1 to November 15; Winter - from November, 16 to March, 14 2) Accredited test by RENAR 3) The product contains a set of multipurpose additives which prevent deposits on valves and injection nozzles, having favourable effects upon the fuel consumption and emissions 4) Product certified by RAR 5) The ethanol, as a blending component used, will be in accordance with EN 15376 in force at the time of product batch manufacturing 6) The bio-component content will respect the laws in force at the time of product batch manufacturing 7) In Table 1 (according to EN 228) are mentioned the permitted vapour pressure waiver during summer time depending on the ethanol content, in accordance with the national legislation in force and with the condition that the ethanol used is a biofuel; 8) This condition is guaranteed by the manufacturing technology and it is checked weekly 9) The fuel meets all the requirements of the SR EN 228 standard in force 10) Product's commercial name: EFIX S 98 GASOLINE.

**Table 1 – Vapour pressure waiver permitted for unleaded gasoline containing bioethanol**

Bioethanol content, % v/v	Vapour Pressure Waiver Permitted, kPa	Bioethanol content, % v/v	Vapour Pressure Waiver Permitted, kPa
0	0	6	8,0
1	3,7	7	7,9
2	6,0	8	7,9
3	7,2	9	7,8
4	7,8	10	7,8
5	8,0		

**Quality control:** control is done on lot/batch.

Each batch will be tank size (max. 5,000 tones). The lot (batch) will have product of same type.

During testing, the product must comply with all parameters depicted in standard specification for corresponding product/type. If not, the batch is rejected.

The quality of delivered product is certified by Conformity Declaration issued in accordance with the national legislation in force.

In case of litigation, the quality control will be done using the samples kept for these cases, sampling being done in accordance with the sampling procedure.

**Sampling procedure:** SR EN ISO 3170:2004/SR EN ISO 3170:2004/C91:05/ASTM D 4057-22

Information about handling, transportation and storage: according to Safety Data Sheet 2.1 T.

**The Integrated Management System** is certified according to the following standards:

- ISO 9001
- ISO 14001
- ISO 45001
- ISO 50001

The test lab is accredited by RENAR, in compliance with SR EN ISO/CEI 17025.

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