



FUEL, 91 RON, UNLEADED, INITIAL FILL, VENEZUELA

WSS-M4C135-B1

1. SCOPE

The material defined by this specification is a well-refined gasoline and normal commercial additives.

2. APPLICATION

This specification was released originally for material used as initial fill fuel for vehicles designed to operate on gasoline in Venezuela. Additives are present to protect the fuel system.

This material is not specifically intended for use in certification testing, mileage accumulation or general fueling.

3. REQUIREMENTS

This material must be produced using current refinery practices for market place fuels and must meet all pertinent legal gasoline requirements in Venezuela.

3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 OCTANE NUMBERS

3.2.1 Research (ISO 5164 / ASTM D2699) 91.0 min

3.2.2 Anti Knock Index (ISO 5163 / ASTM D2700) 87.0 min

3.3 TOTAL SULFUR (CONVENIN 1826/ ASTM D 294 / 5453 / 2622) 0.15% mass, max

3.4 METAL CONTENT

3.4.1 Lead (ASTM D3237) 0.0130 g/L max

3.4.2 Phosphorus (ASTM D3231) 0.0010 g/L max

3.4.3 Manganese (ASTM D3831) 0.0010 g/L max

Date	Action	Revisions	Rev. 0
2016 07 05	Activated		



Documents

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**3.5 COMPOSITION**

3.5.1	Hydrocarbons (ASTM D1319 / 5769 / DIN 51 791)	% volume, max
	Aromatics	35
	Olefins + Aromatics	45
	Saturates	Report
3.5.2	Gum Content (ISO 6246 / ASTM D381)	
	Washed	5 mg/100 mL max
	Unwashed	Report
3.5.3	Benzene (ASTM D3606 / 5769 / EN 12177 / EN 238)	1.2% vol max
3.5.4	Total Oxygen (ASTM D5599 / 4815)	3.7% mass max or 2.7% mass (if ether is used)

3.6 DISTILLATION RANGE
(ASTM D86-9)

Volume Evaporated	Temperature
Initial boiling point	30 min
10%	70 °C max
50%	77 – 121 °C
90%	195 °C max
Final boiling point	225 °C max
Residue	2% volume max

3.7 VAPOR PRESSURE

3.7.1	Seasonal Geographical Volatility Shall meet the local appropriate specifications.
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3.8 OXIDATION STABILITY (ISO 7536 / ASTM D525)	240 minutes min
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3.9 CORROSION PROTECTION

3.9.1	Copper Tarnish (ISO 2160 / ASTM D 130, 3 h at 50 °C COVENIN 872)	1 min max
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3.10 ODOR

The material shall have the usual characteristic odor of gasoline. There shall be no obvious foreign odors.