



GASOLINE, UNLEADED, SPARK PLUG ANTI-FOULING

WSS-M4C123-A

1. SCOPE

The material defined by this specification is a well refined gasoline which can contain permitted gasoline extenders.

2. APPLICATION

This specification was released originally for material used as initial fill fuel for vehicles designed to operate on unleaded gasoline in Europe.

This material is not specifically intended for use in certification testing. It may be used for engine hot test, mileage accumulation or general fueling.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

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

3.3 OCTANE NUMBERS

3.3.1 Motor, min (ISO 5163) 85.0

3.3.2 Research, min (ISO 5164) 95.0

3.4 TOTAL SULPHUR, max 50 mg/kg
(ISO 14596, ISO 8754, ISO 24260, IP 373)

3.5 METAL CONTENT

3.5.1 Lead, max (ASTM D 3237) 0.0030 g/L

3.5.2 Phosphorus, max (ASTM D 3231) 0.0010 g/L

Date	Action	Revisions
2007 03 09	Revised	Reduce benzene, incr ox stab; Deleted 3.16; Revised 1., 3.6.2, 3.9 and 3.11 J. Bennett
2004 09 10	Revised	Allow use of ETBE, reduce min vapor press. (65>60) J. Bennett
2001 08 27	Activated	J. Bennett

**3.6 COMPOSITION**

3.6.1	Hydrocarbons (ASTM D 1319, IP 156, DIN 51 791, BS 2000: part 156: 1993)	
	Aromatic, max	2.5%
	Olefins, max	30.0%
	Saturates	Report
3.6.2	Benzene, max (ASTM D 3606, EN 12177, EN 238)	0.1%
3.6.3	Oxygenates (EN 1601, EN13132)	
	MTBE/ETBE, max	15.0%
	Other oxygenates	0.5%
3.6.4	Water and Sediment, max (ASTM D 2709)	0.010%
3.6.5	Gum, washed, max (ISO 6246)	4 mg/100 mL

3.7 DISTILLATION RANGE
(ASTM D 86/ISO 3405)

10% Volume evaporated at, max	65 °C
50% Volume evaporated at, max	105 °C
90% Volume evaporated at, max	160 °C
Final boiling point, max	200 °C

3.8 VAPOR PRESSURE
(ISO 3007, EN 13016-1)

60.00 - 85.00 kPa

3.9 OXIDATION STABILITY, min
(ASTM D 525, IP 40, ISO 7536, DIN 51780
BS 2000: Part 40: 1992)

900 minutes

3.10 COPPER CORROSION, max
(ISO 2160, 3 h, 50 °C)

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3.11 ADDITIVES

The material may contain normal commercial additives, e.g., deicers, detergents, etc., at concentrations representative of good commercial practice in the receiving locale (unless otherwise specified).