| MOTOR GASOLINE | | | |
|---|---|---|---|
| **BHARAT STAGE III** | | | |
| | | | |
| **TEST** | **METHOD** | **SPECIFICATION** | |
| **Grade** | | **MG 91** | **MG 95** |
| Density @ 15°C, kg/m$^3$ | IS 1448 P :16 | 720 - 775 | 720 - 775 |
| Colour, Visual | | Orange | Red |
| Copper Strip Corrosion (3 hrs. @ 50°C) | IS 1448 P :15 | Not more than 1 | Not more than 1 |
| Existent gum, gm/m$^3$ | IS 1448 P :29 | Max. 40 | Max. 40 |
| Lead Content (as Pb), gm/litre | IS 1448 P:80 / IP 352 | Max. 0.005 | Max. 0.005 |
| Research Octane Number (RON) | IS 1448 P :27 | Min. 91 | Min. 95 |
| Motor Octane Number (MON) | IS 1448 P :26 | Min. 81 | Min. 85 |
| Reid Vapour Pressure @ 38°C, kPa[(1)] | IS 1448 P :39 | Max. 60 | Max. 60 |
| **Distillation** | IS 1448 P :18 | | |
| Recovery upto 70°C (E70), %v | | 10-45 | 10-45 |
| Recovery upto 100°C (E100), %v | | 40-70 | 40-70 |
| Recovery upto 150°C (E150), %v | | Min. 75 | Min. 75 |
| FBP, °C | | Max. 210 | Max. 210 |
| Residue, %v | | Max. 2 | Max. 2 |
| Benzene content,% v | ASTM D3606 | Max. 1 | Max. 1 |
| Total Sulphur, % mass | ISO 14596/ 20847 | Max. 0.015 | Max. 0.015 |
| Vapour Lock Index (VLI): a) Summer [(2)] | Note (3) | Max. 750 | Max. 750 |
| b) Other months (Winter) | | Max. 950 | Max. 950 |
| Oxidation Stability, minutes | IS 1448 P : 28 | Min. 360 | Min. 360 |
| Olefin content, %v | IS 1448 P : 23 | Max. 21 | Max. 18 |
| Aromatics content, %v | IS 1448 P : 23 | Max. 42 | Max. 42 |
| Oxygen content, % mass. | IS 2796:2008 Annexure C & D | Max. 2.7 | Max. 2.7 |
| Oxygenates content, %v | IS 2796:2008 Annexure C | | |
| a) Methanol | | Nil | Nil |
| b) Ethanol | IS 2796:2008 Annexure E | Max. 5 | Max. 5 |
| c) Iso-propyl alcohol | | Max. 10 | Max. 10 |
| d) Iso-butyl alcohol | | Max. 10 | Max. 10 |
| e) Tertiary-butyl alcohol | | Max. 7 | Max. 7 |
| f) Ethers containing 5 or more carbon atoms per molecule | | Max. 15 | Max. 15 |
| g) Other oxygenates | | Max. 8 | Max. 8 |
| | | | |
| **TEST** | **METHOD** | **SPECIFICATION** | |
| **Grade** | | **MG 91** | **MG 95** |

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|---|---|---|---|
| Engine intake system cleanliness [4] | As per IS 2796 | Report - MFA used | Report - MFA used |
| Water Tolerance of gasoline alcohol blends, temperature for phase separation, °C, | | | |
| a) Summer(2) | | Max. 10 | Max. 10 |
| b) Winter (5) | | Max. 0 | Max. 0 |
| | | | |
| Conforms to BIS spec IS:2796-2008 For Motor Gasoline | | | |
| | | | |
| **NOTES:** | | | |
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**1)** For the gasoline-alcohol blends, the dry vapour test method given in Annex A shall be followed.

**2)** Summer shall be the period from May to July.

**3) VLI = 10RVP + 7E70**

**4)** Use of multi-functional additives (MFA) is a requirement for assuring adequate fuel system and intake system cleanliness performance in engines. Refiners/Marketers of motor gasoline have to ensure the MFA has proper credentials from internationally accepted test laboratories/authorities.

**5)** In winter it is expected that temperature may be lower than 0°C in the northern hilly region and hence phase separation shall not take place till -10°C.