E20 Petrol Supplied by PSU Oil Marketing Companies Meets Prescribed Quality Standards; 893 Samples Across 27 States and UTs Found Compliant

All 56 samples tested in Karnataka also conform to IS 17021 specifications, with ethanol content ranging from 19% to 20%

OMCs seek joint sampling and independent testing under prescribed standards to verify reported ethanol levels in Karnataka

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The Ministry of Petroleum and Natural Gas has taken note of the press release issued by the Department of Food, Civil Supplies, Consumer Affairs and Legal Metrology, Government of Karnataka, claiming that petrol sold at certain retail outlets in the State contains between 26% and 31% ethanol.

In this regard, the three public sector Oil Marketing Companies (OMCs) — Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation Limited (BPCL) and Hindustan Petroleum Corporation Limited (HPCL) have clarified that the claims, as reported, are not supported by testing conducted in accordance with the prescribed statutory and technical procedures. E20 petrol supplied by the three OMCs across the country, including Karnataka, conforms to IS 17021, the Bureau of Indian Standards specification for ethanol-blended motor gasoline.

They have also raised concerns regarding the sampling procedure and testing methodology adopted for the October 2026 exercise.

Concerns over Sampling and Testing Methodology

The Motor Spirit and High Speed Diesel (Regulation of Supply, Distribution and Prevention of Malpractices) Order, 2005, issued under the Essential Commodities Act, 1955, read with the Marketing Discipline Guidelines (MDG) 2024, prescribes a defined procedure for sampling, retention, testing and communication of results.

The prescribed procedure requires six one-litre samples to be drawn, with two samples handed over to the dealer against acknowledgement, two retained by the oil company or department, and two sent to a laboratory specified under Schedule III of the Control Order or notified in the Official Gazette. The sample labels are required to be jointly signed, and the test results communicated to the dealer and the oil company within the prescribed timeframe.

While samples drawn during the September 2026 exercise were routed through the State Level Coordinator to designated OMC laboratories and tested for the quality parameters requested under the MDG 2024, the subsequent exercise in October reportedly involved samples drawn without the participation of OMC representatives. The OMCs have also not received the corresponding retention samples, complete outlet-wise details or laboratory reports, despite seeking these through the State Level Coordinator.

The OMCs have further stated that the reported findings rely on certificates issued by a third-party laboratory rather than testing conducted at a laboratory specified under the Control Order. The certificates do not provide the complete technical details necessary to independently verify the reported ethanol content. The absence of counterpart samples and the prescribed documentation has also denied the OMCs and concerned dealers an opportunity to seek verification or retesting.

Testing Methodology Must Conform to IS 17021

A preliminary technical assessment by the OMCs has also highlighted concerns regarding the ethanol testing methodology cited in the certificates.

Under IS 17021:2018 (Amendment No. 3, August 2025), ethanol content in E20 fuel is required to be determined through prescribed methods, namely Fourier Transform Infrared Spectroscopy (FTIR) under ASTM D5845, water extraction under Annex C, or Gas Chromatography under ASTM D4815/D6839.

Importantly, when Gas Chromatography is used under ASTM D4815/D6839, the sample must first be diluted in a 1:1 ratio with oxygenate-free petrol, and the result corrected against an E10 certified reference material.

However, the certificates cited in the Karnataka press release merely mention “Ethanol % by Gas Chromatography”, without specifying the applicable standard test method, the prescribed dilution procedure or the reference material used for correction. In the absence of these essential details, the reported ethanol figures of 26–31% cannot be independently validated against the methodology prescribed under IS 17021.

The reported density readings also warrant examination. The certificates indicate densities ranging from 0.742 to 0.749 g/cc for samples claimed to contain 26–31% ethanol. This is lower than the 0.752–0.760 g/cc recorded for E20 samples tested by the OMCs under the QCC-1 and QCC-2 surveys. Given that ethanol has a higher density than petrol, a higher ethanol proportion would ordinarily be expected to increase the density of the blend. This discrepancy further underscores the need for testing through the prescribed methodology and verification against appropriate reference samples.

OMC and CHT Quality Monitoring Confirms Compliance

The Centre for High Technology (CHT), under the Ministry of Petroleum and Natural Gas, has been continuously monitoring ethanol blending and fuel quality across OMC retail outlets.

As part of the OMC/CHT Quality Coordination Cell (QCC) exercise, 893 E20 samples drawn from IOCL (330), BPCL (280) and HPCL (283) depots and retail outlets across 27 States and Union Territories have been tested for ethanol content as per IS 17021, Annex C, at refinery and OMC quality-control laboratories. All 893 samples were found within the prescribed ethanol content range of 19–21%.

Significantly, all 56 samples tested in Karnataka, comprising samples from different locations and all three OMCs, also conformed to the prescribed specifications, recording ethanol content between 19% and 20%, with an average of 19.30%.

These results demonstrate that ethanol blending at OMC retail outlets is monitored and controlled within the prescribed specifications. The findings are inconsistent with the substantially higher ethanol levels reported in the Karnataka press release and reinforce the need for a transparent, technically sound and jointly verifiable testing exercise.

Ethanol Blending is a Controlled and Automated Process

Ethanol blending at OMC refineries and depots is undertaken through established, calibrated and controlled systems. The process involves automatic calibration and proportioning arrangements at the refinery and depot levels, with blending governed by prescribed specifications and quality-control protocols. It is not a manual or arbitrary process of adding ethanol to petrol.

The OMCs maintain established quality-assurance systems across their supply and distribution networks to ensure that the blended fuel meets the applicable BIS specifications before it reaches consumers.

Consumer Impact Claims Require Scientific Assessment

The claims of an estimated annual consumer mileage loss of approximately ₹62,000 crore and vehicle-repair costs of approximately ₹39,000 crore, aggregating to around ₹1.01 lakh crore, also require careful examination against established technical evidence.

More than 30 crore two-wheelers and 4 crore four-wheelers have been running on E20 fuel for over three years. Every day, over 6 crore people visit petrol pumps to refuel their vehicles. If there were a widespread issue with E20 fuel quality, it would be expected to manifest in vehicle breakdowns across this large vehicle base. No such widespread incidence has been reported. This extensive, real-world usage is an important consideration in assessing claims relating to fuel quality and vehicle performance.

The performance and mileage implications of E20 have been examined by the Inter-Ministerial Committee and through studies involving Indian Oil Corporation Limited (IOCL), the Automotive Research Association of India (ARAI) and the Society of Indian Automobile Manufacturers (SIAM).

As outlined by the Ministry of Petroleum and Natural Gas in its response titled “Response to Concerns on Blending of Ethanol in Petrol and Beyond”, published by the Press Information Bureau on August 12, 2025, vehicles calibrated for E20 can experience a

mileage reduction of approximately 1–2%, while certain other vehicles may experience reductions of approximately 3–6%, depending on vehicle category and calibration.

Accordingly, applying a blanket assumption of 10% mileage loss across the entire vehicle population and extrapolating it into a national consumer-loss figure of ₹62,000 crore does not constitute a scientifically established assessment. Similarly, the ₹39,000 crore vehicle-repair estimate needs to be substantiated through a transparent assessment of actual vehicle-performance data, materials compatibility studies and documented repair costs.

Concerns relating to materials compatibility and vehicle performance have already been examined through studies involving technical agencies and the automobile industry. Any assessment of the programme's impact must therefore take into account vehicle category, manufacturing specifications, fuel compatibility and the findings of these technical studies, rather than relying on blanket assumptions.

Ethanol Blending Programme Delivers Wider Economic and Environmental Benefits

India's ethanol-blending journey spans more than two decades, beginning with the pilot programme in 2001 and progressing through successive policy interventions, including the National Policy on Biofuels, 2018, and the NITI Aayog Roadmap for Ethanol Blending in India by 2025, prepared in consultation with stakeholders.

The Ethanol Blended Petrol (EBP) Programme is an important component of India's efforts to reduce dependence on imported crude oil, strengthen domestic agricultural value chains and advance energy security.

Ethanol blending programme, since ESY 2014-15, has resulted in:

- Foreign-exchange savings of more than ₹1.97 lakh crore.
- Substitution of approximately 316 lakh metric tonnes of crude oil.
- Reduction of approximately 952 lakh metric tonnes of CO_2 emissions.
- Transfer of more than ₹1.66 lakh crore to farmers.

These measurable outcomes underline the wider economic, environmental and agricultural benefits of the programme, which cannot be assessed solely through a selective comparison of OMC profitability and alleged consumer costs.

During ESY 2025-26 ending 31st October 2026, PSU OMCs procured 1,089 crore litres of ethanol and blended 1,134 crore litres against petrol sales of approximately 5,673 crore litres, in pursuit of the national 20% blending target. The programme operates within a defined national framework, with blending levels and quality parameters monitored across the supply chain. Isolated and unverified allegations of substantially higher or lower blending at individual locations do not provide a meaningful assessment of the programme's overall performance.

The suggestion that OMCs have a commercial incentive to undertake blending beyond the prescribed target is also misplaced. Ethanol procurement involves a significant cost, and every additional litre blended beyond the prescribed proportion would add to the OMCs' procurement costs. The OMCs have no commercial rationale to undertake arbitrary or excess blending.

OMCs Seek Transparency and Independent Verification

In view of the concerns raised, the three OMCs have requested the Government of Karnataka to share the complete sampling documentation, outlet-wise laboratory reports and details of the test methodology adopted for the reported findings. They have also sought access to the counterpart samples for independent testing at an authorised laboratory using the prescribed referee method, in the presence of representatives of the State Government and OMCs.

The OMCs remain committed to cooperating with the State Government and other competent authorities in conducting joint sampling and testing in accordance with the Control Order and the MDG 2024. Any deviation established through the prescribed procedure will be dealt with in accordance with the applicable guidelines.

The Ministry of Petroleum and Natural Gas reiterates its commitment to ensuring the quality of petroleum products supplied to consumers, regulatory compliance and consumer protection, supported by established quality-assurance and monitoring mechanisms across the nationwide supply and distribution networks of OMCs.

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