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Coal-based Synthetic Natural Gas for Vehicle

车用煤制合成天然气

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Coal-based synthetic natural gas for vehicle

1 Scope

This Standard specifies the terms and definitions, technical requirements, test methods, sampling and test rules, storage and use of coal-based synthetic natural gas for vehicle.

This Standard is applicable to coal-based synthetic natural gas whose pressure is not more than 25 MPa and which is used as fuel for vehicles, including hydrogen-rich gas which is separated from synthetic natural gas, and excluding natural gas for vehicle which uses natural gas as raw material.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 13609, Natural gas sampling guidelines

GB/T 17258, Steel cylinders for the on-board storage of compressed natural gas as a fuel for automotive vehicles

GB/T 17283, Determination of the water dew point of natural gas. Cooled surface condensation hygrometers

GB/T 19158, Steel cylinders for the storage of compressed natural gas

GB/T 27893, Natural gas. Determination of particles content. Gravimetric method

GB/T 33318, Gas analysis. Determination of sulfide. Gas chromatography with sulfur chemiluminescence

GB/T 33445, Coal-based synthetic natural gas

TSGR 0004, Supervision Regulation on Safety Technology for Stationary Pressure Vessel

5 Test method

- **5.1** Determination of methane, hydrogen, oxygen, carbon monoxide, carbon dioxide and ammonia components in coal-based synthetic natural gas shall be carried out in accordance with GB/T 33445. Other equivalent methods may be used to determine methane, hydrogen, oxygen, carbon monoxide, carbon dioxide and ammonia components in coal-based synthetic natural gas for vehicle, and the arbitration test method is GB/T 33445.
- **5.2** Determination of total sulfur content in coal-based synthetic natural gas shall be carried out in accordance with GB/T 33318. Other equivalent methods may be used to determine the total sulfur content in coal-based synthetic natural gas for vehicle, and the arbitration test method is GB/T 33318.
- **5.3** Determination of water dew point of coal-based synthetic natural gas shall be carried out in accordance with GB/T 17283. Other equivalent methods may be used to determine the water dew point of coal-based synthetic natural gas for vehicle, and the arbitration test method is GB/T 17283.
- **5.4** Determination of the total content of solid particles in coal-based synthetic natural gas for vehicle shall be carried out in accordance with GB/T 27893. Other equivalent methods may be used to determine the total content of solid particles in coal-based synthetic natural gas for vehicle; and when the measurement result is objectionable, the arbitration test method is GB/T 27893. The test is carried out after decompression by a decompression device that has no filter.

6 Sampling and test rules

6.1 Sampling

The sampling of coal-based synthetic natural gas for vehicle shall be carried out according to GB/T 13609; the influence of hydrogen embrittlement shall be fully considered, and the sampling container shall be carefully selected.

6.2 Test rules

- **6.2.1** All items in Table 1 of Chapter 4 are delivery test items.
- **6.2.2** Under the following circumstances, coal-based synthetic natural gas products shall be thoroughly tested in accordance with the technical requirements in this Standard:
 - -- When it is first put into production;
 - -- In normal production, after regular or cumulative production;

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