

Directions Governing the Inspection Procedure for Petroleum Products

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All Clauses amended and promulgated by Ministerial Order No. 2000071, BSMI, MOEA on 29 February 2000.

All Clauses amended and promulgated by Ministerial Order No. 0007892, BSMI, MOEA on 29 May 2000.

All Clauses amended and promulgated by Ministerial Order No. 2000434, BSMI, MOEA on 20 September 2000.

All Clauses amended and promulgated by Ministerial Order No. 09120000430 on 8 February 2002.

Clauses 4, 5, 8 and 14 amended and promulgated by Ministerial Order No. 09420008250, BSMI, MOEA on 22 December 2005.

All Clauses amended and promulgated by Ministerial Order No. 10120001310 on 15 February 2012.

All Clauses amended and promulgated by Ministerial Order No. 11220003460 on 8 June 2023.

Clauses 5,6,10 amended and promulgated by Ministerial Order No.11430008030 on 14 May 2025.

1. These Directions are stipulated by the Bureau of Standards, Metrology and Inspection (BSMI) for implementing the inspection of petroleum products.
2. Scope of Inspection: Petroleum Products that are imported or domestically-manufactured to be placed on the market.
3. Inspection schemes: monitoring inspection or management-system-based monitoring inspection.
4. Product name, type, inspection standards and inspection items for petroleum products are specified in Table 1.
5. Relevant requirements of monitoring inspection (including management-system-based monitoring inspection):

(1) Application:

- a. Monitoring inspection: The obligatory inspection applicant shall apply to the BSMI or its branch (hereinafter referred to as the Inspection Authority) for inspection by submitting an inspection application form before the product is imported or transported out of the production premises. For petroleum products subject to CNS 2558 (2025 version, produced by specifically approved processes) and CNS 16221 (2023 version), the applicant shall submit a copy of the test report for the supplementary inspection items issued by a domestic or foreign testing laboratory. The report shall be reviewed by the Hsinchu Branch. If the test report meeting the above requirement has not yet been obtained, the applicant may apply for prior release of products.
- b. Management-system-based monitoring inspection:
 - (a) An applicant shall register in the monitoring system and submit the application form, together with quality management system certificates issued by the BSMI or by certification bodies recognized by the BSMI, and a list of basic inspection equipment, to the Inspection Authority.
 - (b) The required basic inspection equipment (including supplementary inspection equipment) is specified in Table 2.

(2) Inspection procedures for Monitoring Inspection:

- a. The inspection is carried out by batch examination. Where the obligatory inspection applicant applies for inspection for products of the same origin, the same production premise or brand, and the same type, which have passed batch examination for three consecutive batches, the rate of each batch afterwards sampled for inspection shall be reduced to 20%. Where non-compliance is found in the randomly sampled products, batch examination will be resumed.

- b. For petroleum products subject to batch inspection or randomly sampled for inspection, an inspection certificate will be issued based on a test analysis report (original) issued by BSMI-designated testing laboratory upon confirmation of compliance of the products with relevant requirements. Products may still be sampled for inspection if there are safety concerns. Where there is no non-compliance record of the products in the submitted application for batch inspection or where the products are sampled for inspection, the content of test analysis reports may include test results of major inspection items. For other situations, the content of test analysis reports shall contain test results of all inspection items.
- c. The inspection shall be performed on major items if there is no non-compliance record of the products in the submitted application for batch inspection or if the products are sampled for inspection. The BSMI shall develop plans to monitor compliance with the other inspection items. If there are non-compliance records in batch inspection, all inspection items shall be conducted.

(3) Management-system-based monitoring inspection:

- a. Domestically-manufactured cement to be sold in Taiwan: A production premise shall perform inspection of its cement and issue, by countersigning, the inspection certificate if compliance is demonstrated after the inspection.
- b. For imported cement: the obligatory inspection applicant shall submit a copy of the registration certificate of the production premise under management-system-based monitoring inspection and the inspection records (original) produced by the production premise to the BSMI for approval before issuing the inspection certificate.

6. Inspection agency:

- (1) Liquefied petroleum gases (LPG): Keelung, Taichung and Kaohsiung Branches of the BSMI. Samples taken by the BSMI headquarters, Hsinchu Branch or Hualien Branch of the BSMI are inspected by Keelung Branch; while the samples taken by Tainan Branch of the BSMI are inspected by Kaohsiung Branch.
- (2) Petroleum products other than LPG:
 - a. Major inspection items: to be performed by BSMI Branches. Samples taken by the BSMI headquarters will be inspected by Keelung Branch.
 - b. Items other than major inspection items: to be performed by BSMI Branches or by inspection bodies commissioned by the BSMI. Supplementary inspection items for products subject to CNS 2558 (2025 version, produced by specifically approved processes) and CNS 16221 (2023 version) shall be reviewed by the Hsinchu Branch based on the test reports provided by domestic or foreign laboratories.

7. Sampling:

- (1) Method: The Branch of the BSMI receiving the inspection application will assign a staff member to take samples from the ship, the bonded tanks (sealed) or the storage tanks of the production premise.
- (2) Inspection standards: CNS 1217 "Method of practice for manual sampling of petroleum and petroleum products" and CNS 12952 "Method for Sampling Liquefied Petroleum (LP) Gases."
- (3) Quantity: The applicant keeps two samples, while the BSMI Branch keeps one sample (the applicant may sign an undertaking not to keep the samples and waive the right to retest the

products).

- a. LPG: 300 ml×4 at minimum (each sampling may be split into several sampling bottles, if it is needed).
- b. Fuel oil: 2,000 ml × 2 + 1,000 ml × 1.
- c. Aviation turbine fuels: 2,000 ml × 2 + 1,000 ml × 1.
- d. Aviation gasolines and unleaded gasoline for automobile: 4,000 ml × 2 + 1,000 ml × 1.
- e. Kerosene: 2,000 ml × 2 + 1,000 ml × 1.
- f. Diesel fuel oils and automotive diesel fuel: 5,000 ml × 2 + 1,000 ml × 1.

(4) Sampling equipment is to be provided by the applicant.

8. Delivery of samples: As carrying petroleum products by public transportation is not allowed, samples may be delivered by the staff member of the BSMI Branch receiving the application to the inspection agency via transportation means provided by the applicant.

9. Period of inspection:

- (1) LPG: two working days upon receipt of samples, and five working days if further review is needed.
- (2) Fuel oil, aviation turbine fuels, aviation gasolines, unleaded gasoline for automobile, kerosene, diesel fuel oils and automotive diesel fuel: three working days upon receipt of samples, and six working days if further review is needed.

10. Monitoring plan:

- (1) Products and inspection items to be monitored: for petroleum products certified by having their major items inspected, compliance with the rest of the inspection items will be monitored; for petroleum products certified by providing test reports issued by BSMI-designated testing laboratories or produced by registered production premises under management-system-based monitoring inspection procedure, compliance with all inspection items shall be monitored.
- (2) Inspection agency: Clause 6 shall apply. Supplementary inspection items for products subject to CNS 2558 (2025 version, produced by specifically approved processes) and CNS 16221 (2023 version) may be tested via witness testing.
- (3) Period of inspection: ten working days upon receipt of the samples and the inspection period mentioned in Clause 9 shall not apply.
- (4) Actions to be taken if non-compliance is found in monitoring results:
 - a. Monitoring inspection: The inspection of petroleum products of the same place of origin, the same production premise or brand, the same model (the same type) is changed to batch inspection, covering all inspection items. Monitoring inspection shall be resumed under the circumstance that compliance with requirements is demonstrated for three consecutive batches.
 - b. Management-system-based monitoring inspection: The inspection of petroleum products of the same place of origin, the same production premise or brand, the same model (the same type) is changed to batch inspection for one to six months.

Table 1

Description of Goods	Type	Inspection Standard	Inspection Item	
			All Inspection Items	Major Inspection Items
Unleaded gasoline for automobile (92, 95, 98 RON only ,not including alcohol gasoline)	Octane number 92, 95 and 98	CNS 12614	Density, Research Octane Number (RON), Copper strip corrosion, Oxidation stability, Existent gum content, Benzene content, Sulfur content, Oxygen content (without ethanol),Lead content, Vapor pressure (without ethanol), Distillation temperature, Distillation residue, DI, Hydrocarbon type content (Olefins and Aromatics)	Sulfur Content
Aviation gasolines	80, 100, 100LL, 100VLL	CNS 2259	Sulfur Content, Distillation Properties, Copper strip corrosion	Sulfur Content
Aviation turbine fuels (Jet A and Jet A-1 Only)	Jet A and Jet A-1	<u>CNS 2558 (2025 version, produced by specifically approved processes)</u>	<u>1.Basic Inspection items:</u> Sulfur Content, Distillation Properties (distillation temperature, distillation residue, distillation loss), Copper strip corrosion, Flash point, Density at 15°C, Existent gum content <u>2. Supplementary inspection items specifies in CSN 2558 (2025 version) annex A:</u> <u>Thermal stability (2.5h at control temperature 280°C) , -40°C viscosity, Freezing point, Unconverted esters and fatty acids; co-processing hydrocarbons from previously hydroprocessed esters and fatty acid: Aromatics ,Distillation (T50-T10,T90-T10) and Lubricity</u>	Total Sulfur Content
		<u>CNS 16221 (2023 version, consists of conventional and synthetic blending components)</u>	<u>1.Basic Inspection items:</u> Sulfur Content, Distillation Properties (distillation temperature, distillation residue, distillation loss), Copper strip corrosion, Flash point, Density at 15°C, Existent gum content <u>2. Supplementary inspection items:</u> <u>Thermal stability (2.5h at control temperature 260°C) , -40°C viscosity, Freezing point, Unconverted esters and fatty acids; co-processing hydrocarbons from previously hydroprocessed esters and fatty acid: Aromatics, Distillation (T50-T10, T90-T10) and Lubricity</u>	
Kerosine	1-K and 2-K	CNS 1470	Sulfur Content, cooper strip corrosion, flash point, Saybolt Color, Distillation	Sulfur Content

			range, Distillation temperature	
Automotive diesel fuel	-	CNS 1471	All quality items in CNS 1471	Sulfur Content
Diesel fuel oil (Including Ordinary Diesel Fuel and Fishing Boat oil A)	Ordinary Diesel Fuel and Fishing Boat oil A	CNS 1471-1	Cetane Index, Density, Copper strip corrosion, Flash point, Kinematic Viscosity, Ramsbottom Carbon Residue, Water and Sediment, Distillation Temperature, Sulfur Content, Ash, Pour Point	Sulfur Content
Fuel Oil (NO.4, NO. 5, NO. 6 and NO. 6T only)	No.4 (Light), No.4, No 5 (Light), No 5 (Heavy), No. 6T and No. 6	CNS 1472	Density, Flash Point, Kinematic Viscosity, Pour Point, Water and sediment, Sulfur Content, Trace Carbon Residue	Sulfur Content
Liquefied petroleum gases (LPG)	Commercial Propane, Commercial Butane, Commercial PB Mixture, Special-duty propane	CNS 12951	Volatiles: "C4 and higher hydrocarbons, C5 and higher hydrocarbons, propylene content" or "95% evaporation temperature", 1,3-butadiene, total sulfur content, vapor pressure, density (15°C) or relative density, copper strip corrosion, hydrogen sulfide, residue (including 100 ml distillation residue and oil stain observation)	Sulfur Content

Table 2

Item	Description of Goods	Type	Basic Inspection Equipment
1	Unleaded gasoline for automobile (92, 95, 98 RON only ,not including alcohol gasoline)	Octane number 92, 95 and 98	<ol style="list-style-type: none"> 1. Specific gravity meter or digital density meter 2. Octane number tester 3. Copper strip corrosion test equipment and copper strip corrosion standard sheet 4. Gasoline oxidation stability tester 5. Gel content tester 6. Gas chromatography 7. X-Ray Spectrometer or Atomic Absorption Spectrometer (lead content) 8. Total sulfur analyzer (UV fluorescence method) or related sulfur content test equipment 9. Reid vapor pressure tester or related vapor pressure testing equipment 10. Distillation testing apparatus
2	Aviation gasolines	80, 100, 100LL, 100VLL	<ol style="list-style-type: none"> 1. Copper strip corrosion test equipment and copper strip corrosion standard 2. X-rays fluorescence spectrometer (including sulfur content) or lamp method 3. Distillation testing apparatus
3	Aviation turbine fuels (Jet A and Jet A-1 Only)	Jet A and Jet A-1	<p><u>CNS 2558 (2025 version, produced by specifically approved processes)</u></p> <p><u>1-1 Basic Inspection equipment:</u></p> <ol style="list-style-type: none"> 1. X-rays fluorescence spectrometer or related sulfur content testing equipment 2. Distillation testing apparatus 3. Digital density meter 4. Copper strip corrosion test equipment and copper strip corrosion standard 5. Gel content tester 6. Tag closed-cup flash point tester <p><u>1-2 Supplementary inspection equipment:</u></p> <ol style="list-style-type: none"> <u>1. Low Temperature Kinematic Viscosity Teste</u> <u>2. Pour Point Tester</u> <u>3. Thermal Oxidation Stability Testing Equipment</u> <u>4. Unconverted Esters and Fatty Acids Testing Equipment</u> <u>5. Lubricity Tester (for Co-processed Feedstocks of Hydrotreated Synthetic Kerosene)</u> <u>6. Total Aromatics Content Analyzer (for Co-processed Feedstocks of Hydrotreated Synthetic Kerosene)</u> <p><u>CNS 16221 (2023 version)</u></p> <p><u>1-1 Basic Inspection equipment:</u></p> <ol style="list-style-type: none"> 1. X-rays fluorescence spectrometer or related sulfur content testing equipment 2. Distillation testing apparatus 3. Digital density meter 4. Copper strip corrosion test equipment and copper strip corrosion standard 5. <u>Gel content tester</u>

Item	Description of Goods	Type	Basic Inspection Equipment
			<p>6. <u>Tag closed-cup flash point tester</u></p> <p>1-2 <u>Supplementary inspection equipment:</u></p> <p>1. <u>Low Temperature Kinematic Viscosity Tester</u></p> <p>2. <u>Pour Point Tester</u></p> <p>3. <u>Thermal Oxidation Stability Testing Equipment</u></p> <p>4. <u>Unconverted Esters and Fatty Acids Testing Equipment</u></p> <p>5. <u>Lubricity Tester (for Co-processed Feedstocks of Hydrotreated Synthetic Kerosene)</u></p> <p>6. <u>Total Aromatics Content Analyzer (for Co-processed Feedstocks of Hydrotreated Synthetic Kerosene)</u></p>
4	Kerosene	1-K and 2-K	<p>1. Copper strip corrosion test equipment and copper strip corrosion standard</p> <p>2. Pensky-Martens closed-cup flash point tester, Tag closed-cup flash point tester or mini closed-cup flash point tester</p> <p>3. Saybolt Chromometer</p> <p>4. X-rays fluorescence spectrometer or related sulfur tester</p> <p>5. Distillation testing apparatus.</p>
5	Automotive diesel fuel		<p>1. Specific gravity meter or digital density meter</p> <p>2. Copper strip corrosion test equipment and copper strip corrosion standard</p> <p>3. Pensky-Martens closed-cup flash point tester</p> <p>4. Viscometer and its constant temperature bath</p> <p>5. Ramsbottom carbon residue tester or trace carbon residue testing apparatus</p> <p>6. Centrifuge and corresponding centrifuge tube</p> <p>7. Distillation testing apparatus</p> <p>8. Total sulfur analyzer (ultraviolet fluorescence method) or X-rays fluorescence spectrometer</p> <p>9. Ashing furnace</p> <p>10. High Performance Liquid Chromatography (Differential Refractive Index Detector)</p> <p>11. High frequency reciprocal testing apparatus</p> <p>12. Infrared spectrometer (with capability of adding fatty acid methyl ester)</p> <p>13. Karl Fischer moisture tester (with capability of adding fatty acid methyl ester)</p> <p>14. Filter membrane and filtration device (with capability of adding fatty acid methyl ester)</p> <p>15. Pour point testing apparatus</p> <p>16. Cold filter plugging point testing apparatus (with capability of adding fatty acid methyl ester)</p> <p>17. Diesel oxidation stability testing apparatus</p>
6	Diesel fuel oil (including Ordinary Diesel Fuel and Fishing and Fishing	Ordinary Diesel Fuel and Fishing Boat oil A	<p>1. Specific gravity meter or digital density meter</p> <p>2. Copper strip corrosion test equipment and copper strip corrosion standard</p> <p>3. Pensky-Martens closed-cup flash point tester</p> <p>4. Viscometer and its constant temperature bath</p>

Item	Description of Goods	Type	Basic Inspection Equipment
	Boat oil A)		5. Ramsbottom carbon residue tester or trace carbon residue testing apparatus 6. Centrifuge and corresponding centrifuge tube 7. Distillation testing apparatus 8. Total sulfur analyzer (ultraviolet fluorescence method) or X-rays fluorescence spectrometer 9. Ashing furnace 10. Pour point testing apparatus
7	Fuel Oil (NO.4, NO. 5, NO. 6 and NO. 6T only)	No.4 (Light), No.4, No 5 (Light), No 5 (Heavy), No. 6T and No. 6	1. Relative Gravity meter or Digital Density meter 2. Pensky-Martens Closed –cup flash point tester. 3. Viscometer and its constant temperature bath. 4. Trace Carbon residue testing apparatus. 5. Water Distillation apparatus. 6. Centrifuge and Corresponding centrifuge tube with temperature control at 60°C. 7. X-ray fluorescence spectrometer or total sulfur analyzer (Ultraviolet Fluorescence method) 8. Pour Point testing apparatus.
8	Commercial Propane, Commercial Butane, Commercial PB Mixture, Special-duty propane	Propane, Butane, Mixed Propane and Butane; Propane for special application	1. Lamp method testing apparatus, Oxidative micro-coulometer, Gas chromatography chemical luminescence apparatus, or Volatile sulfur in gaseous hydrocarbons and liquefied petroleum gases by UV fluorescence testing apparatus. 2. Vapor pressure testing apparatus. 3. Density tester 4. Copper strip corrosion test equipment and copper strip corrosion standard. 5. Constant temperature bath with thermometer (-20°C ~102°C) 6. Gas Chromatography 7. Volatility testing apparatus. 8. Hydrogen sulfide testing apparatus. 9. Residue testing apparatus.