

ICS 17.180  
CCS A 60

**JJF**

**INDUSTRY STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**JJF 1526-2015**

---

**Calibration Specification for Petroleum Products Colorimeters  
and Filters  
(English Translation)**

**Issued on: June 15, 2015**

**Implemented on: September 15, 2015**

---

**Issued by: General Administration of Quality Supervision, Inspection and  
Quarantine**

## Table of Contents

Introduction (II)

1 Scope (1)

2. References (1)

3 Overview (1)

3.1 Petroleum products color analyzer (1)

3.2 Saybolt colorimeter (1)

4 Metrological characteristics (2)

4.1 Petroleum products color analyzer and metrological characteristics Saybolt colorimeter (2)

4.2 Petroleum products color analyzer shade guide metrological characteristics (2)

4.3 Saybolt colorimeter shade guide metrological characteristics (3)

### **4.3 Saybolt colorimeter shade guide metrological characteristics (3)**

Calibration Condition 5 (3)

## **8 Recalibration intervals (6)**

Appendix A recommended calibration record format (7)

Appendix B Calibration Certificate page format recommended (10)

Appendix C shade guide Measurement Uncertainty Example (11)

Appendix D Automatic oil assessment Examples of colorimetric measurement uncertainty (15)

Appendix E Saybolt colorimeter light requirements (18)

Appendix F of petroleum products colorimeter (visual category) technical conditions (19)

Appendix G of the control relationship norms and SH/T 0168 color number (20)

## **Introduction**

This specification is based on JJF 1071-2010 "National Calibration Specifications writing rules", JJF 1001 "general purpose Volume terms and definitions ", JJF 1059.1-2012" Evaluation and Expression of Uncertainty in Measurement ", and referring to (part) Petroleum products - Determination of color ASTM1500-2007 (StandardTestMethodforASTMColorof PetroleumProducts), ASTM156-2012 petroleum

products Determination of Saybolt color (StandardTest MethodforSayboltColorofPetroleumProducts), GB/T 6540 "Petroleum products - Determination of color" the provisions of GB/T 3555 "Petroleum products - Determination of Saybolt color of law" enacted.

This specification calibrated main items are.

- Instruments wavelength error;
- Instrument Wavelength repeatability;
- Instrument transmittance error;
- Instrument transmittance repeatability;
- Instrument chroma error;
- Instrument color reproducibility;
- Petroleum Products Analyzer color shade guide error;
- Saybolt colorimeter shade guide error.

The specification for the first time to develop.

Petroleum products color analyzer calibration specification and shade guide

## 1 Scope

This instruction applies to petroleum products color analyzer and shade guide, Saybolt colorimeter and calibration shade guide.

## 2. References

This specification references the following documents.

JJG178 "ultraviolet, visible, near-infrared spectrophotometer" JJG867 "spectral color measurement instrument" GB/T 3555 "Petroleum products - Determination of Saybolt color" GB/T 6540 "Petroleum products - Determination of color." ASTM156 "Petroleum products - Determination of Saybolt color" (StandardTestMethodforSaybolt ColorofPetroleumProducts) ASTM1500 "Petroleum products - Determination of color" (StandardTestMethodforASTMColorof PetroleumProducts) for dated references, only the dated edition applies to this specification; undated reference documents Member, the latest edition (including any amendments) applies to this specification.

## 3 Overview

3.1 petroleum products color analyzer Petroleum products color analyzer (hereinafter referred to as instruments) are measured for various lubricating oils, kerosene, diesel, petroleum wax Color of Petroleum Products instrument can be divided into automatic instruments and visual equipment. The color of petroleum products are divided into 16 color

number, from shallow to deep were 0.5,1.0,1.5,2.0,2.5,3.0,3.5,4.0,4.5,5.0,5.5,6.0,6.5,7.0,7.5,8.0.

Automated instruments mainly by the light source, a beam system, the sample chamber, the detection system components. Meet the 0.0 ~

#### 8.0 Determination of color.

Visual equipment mainly by the light source, the standard color wheel, prism and eyepiece observation and other components, together with colorimetric tube. Measurement Sample injection timing of petroleum products intended color measurement than the inner tube, and then test the sample chamber into the instrument, the instrument light filter After color refraction and reflection respectively through the prism of uniform illumination on the color wheel and colorimetric shade guide tube, by observing the ratio of the eyepiece Swatches compared to determine which color color number.

3.2 Saybolt colorimeter Saybolt colorimeter is measured unstained motor gasoline, aviation gasoline, jet fuel, naphtha, kerosene, white Oil and other refined petroleum products, petroleum wax color instrument. The ratio of color swatches is measured by comparing the color samples of the liquid column Degrees, when the contrast ratio and observation sample swatches through the liquid column, measured the height of the liquid column and three match one swatch closest, Value, this value can be isolated by Saybolt color number. Saybolt color number of provisions -16 (darkest) to 30 (most shallow). Mainly by the standard sample tube, an optical system, a light source, standard color and other components.