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

GB/T 5208-2008

**Determination of flash point -- Rapid equilibrium closed cup
method**

(English Translation)

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Table of Contents

Foreword...	3
1 Scope...	4
2 Normative References...	4
3 Terms and Definitions...	4
4 Principle...	5
5 Reagents and Materials...	5
6 Apparatus...	5
7 Apparatus Preparation...	6
8 Sampling...	7
9 Sample Handling...	8
10 Procedure...	8
11 Calculation...	10
12 Expression of Results...	11
13 Precision...	11
14 Test Report...	12
Annex A (Normative) Flash Point Test Apparatus...	13
Annex B (Normative) Thermometer Specifications...	18
Annex C (Informative) Verification of Apparatus...	19
Annex D (Informative) Use of a Cup Insert...	22
Bibliography...	23

Foreword

This Standard equivalently adopts ISO 3679:2004 Determination of Flash Point - Rapid Equilibrium Closed Cup Method (English Version).

This Standard replaced GB/T 5208-1985 Coatings - Flash Point Test - Rapid Equilibrium Method, and GB/T 7634-1987 Petroleum and Related Products - Determination of Lower Flashpoint - Rapid Equilibrium Method.

The major technical differences between this Standard and GB/T 5208-1985 & GB/T 7634-

1987 are as follows:

---This standard combines the contents of the two standards; and its applicable products and

test flash point range are wider than the original standard;

--- The original two standards refer to ISO 1523:1983 and ISO 3679:1983;

--- Add calibration method of the instrument;

--- Add the technical requirements for the thermometer used for testing;

--- Add the method of using the embedded cup;

--- Add the relevant content of testing samples with a flash point greater than 100 °C;

--- The expression of precision is different;

--- Describe the operating procedures respectively according to the flash point no greater than 100°C and greater than 100°C;

--- Give the requirements for flash point testing equipment in Annex A.

This Standard's Annexes A and B are normative, while Annexes C and D are informative.

This Standard was proposed by China Petroleum and Chemical Industry Association.

This Standard shall be under the jurisdiction of National Technical Committee on Paints & Pigments of Standardization Administration of China (SAC/TC 5).

Drafting organization of this Standard: CNOOC Changzhou Paint & Coating industry Research

Institute.

Chief drafting staff of this Standard: Feng Shifang.

GB/T 5208 was first-time published in 1985; GB/T 7634 was first-time published in 1987; it is

thee first-time combined and revised hereby.

Determination of Flash Point - Rapid Equilibrium Closed

Cup Method

1 Scope

This Standard specifies a method for the determination of the closed cup flash point of paints

(including water-borne paints), varnishes, paint binders, adhesives, solvents, petroleum, and related products having closed cup flash points within the range of $-30^{\circ}\text{C} \sim 300^{\circ}\text{C}$. When used in conjunction with the flash detector (A.1.6), this Standard is also suitable for the determination of the flash point of fatty acid methyl esters (FAME).

2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 3186 Paints Varnishes and Raw Materials for Paints and Varnishes - Sampling (GB/T 3186-2006, ISO 15528:2000, IDT)

GB/T 20777 Paints and Varnishes - Examination and Preparation of Samples for Testing (GB/T 20777-2006, ISO 1513:1992, IDT)

SY/T 5317 Petroleum Liquid - Automatic Pipeline Sampling (SY/T 5317-2006, ISO 3171:1988, IDT)

ISO 3170 Petroleum Liquids - Manual Sampling

3 Terms and Definitions

For the purposes of this Document, the following terms and definitions apply.

3.1 Flash point

Lowest temperature of the test portion (as measured in the prescribed manner). corrected to a the instrument.

10.1.4 Do not confuse the true flash point with the bluish halo that sometimes surrounds the

test flame at applications preceding that which causes the actual flash.

NOTE: The optional flash detector (A.1.6) is not affected by the halo, and does not require the operator

to closely observe the flash point test.

10.1.5 Record the ambient barometric pressure using a barometer (6.3) in the vicinity of the

apparatus at the time of the test.

NOTE: It is not considered necessary to correct the barometric pressure reading to 0°C, although some

barometers are designed to make this correction automatically.

10.2.1 Charge a clean and dry syringe, adjusted to a temperature at least 10°C below the

expected flash point, with a 2 ml test portion. Close the sample container immediately after withdrawal to minimize the loss of volatile components.

10.2.2 Carefully transfer the syringe to the filler orifice and discharge the test portion into the

test cup by fully depressing the syringe plunger. Remove the syringe.

10.2.3 For solid or semi-solid samples, transfer a mass equivalent to approximately 2 ml

directly into the test cup and spread it over the bottom of the cup as evenly as possible.

10.2.4 Start the 1 min timing device (A.1.3). Open the gas control valve and ignite the pilot and

test flames. Adjust the test flame to conform to the size of the 4 mm gauge ring. Reset the flash

detector (A.1.6) if fitted.