

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1523

PAINTS AND VARNISHES

DETERMINATION OF FLASHPOINT

(CLOSED CUP METHOD)

1st EDITION

April 1971

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Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1523, *Paints and varnishes – Determination of flashpoint (Closed cup method)*, was drawn up by Technical Committee ISO/TC 35, *Paints and varnishes*, the Secretariat of which is held by the Nederlands Normalisatie-instituut (NNI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1523, which was circulated to all the ISO Member Bodies for enquiry in November 1969. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Italy	Sweden
Chile	Netherlands	Switzerland
Denmark	New Zealand	Turkey
France	Poland	U.A.R.
Germany	Portugal	United Kingdom
Greece	South Africa, Rep. of	U.S.S.R.
Israel	Spain	Yugoslavia

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

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INTRODUCTION

This ISO Recommendation is one of a series dealing with the sampling and testing of paints, varnishes and related products. It should be read in conjunction with ISO Recommendation R 1516, *Paints and varnishes – Determination of the danger classification by flashpoint (closed cup method)*.

By the procedure described in this ISO Recommendation, differences between test apparatuses of various standard designs are minimised by ensuring that the test is carried out only when the product under test, and the air/vapour mixture above it in the test vessel, are exactly in temperature equilibrium.

1. SCOPE

This ISO Recommendation describes a method for determining the flashpoint of a paint, varnish or related product when tested in the manner described. The method is suitable for use over the temperature range 5 to 65 °C although some of the apparatus listed in the Appendix cannot cover all this range using the thermometers supplied with the apparatus.

NOTE. – In some countries existing regulations may require the use of other methods over at least a part of the temperature range 5 to 65 °C.

The procedure also makes allowance for variations from standard barometric pressure.

2. DEFINITION

Flashpoint (closed cup). The lowest temperature in degrees Celsius (at an air pressure of 101.3 kN/m²) at which solvent vapour from the product under test and confined in a closed cup gives rise under the conditions of test to an air/vapour mixture which can be ignited by an external source of ignition.

NOTE. – This measure of the flammability of solvent vapour by external ignition gives an indication of the degree of fire hazard of the product.

3. PRINCIPLE

The test portion is heated in a closed cup of standard design by immersing it to the required level in a suitable water-bath. The temperature of the water-bath is slowly raised at such a rate that the difference in temperature between the water-bath and the test portion in the cup never exceeds 2 °C.

This slow rate of heating is necessary because of the low thermal conductivity of paints, varnishes and related products and also because heat transfer by convection is hindered by the high viscosity of many of these products. A stirring device may be used to aid thermal conduction but if used must not be in operation while an ignition trial is being carried out.

During the heating-up period ignition trials are carried out at intervals of not less than 1.5 minutes. This time interval is necessary to ensure that a saturation concentration of vapour in the air space above the test portion is re-established after each ignition trial.

The heating procedure laid down ensures that the temperature of the test portion does not rise more quickly than about 0.5 °C in 1.5 minutes.