International Standard 5274

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Aromatic hydrocarbons — Acid-wash test

Hydrocarbures aromatiques — Détermination de l'indice de coloration sulfurique

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FOREWORD

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5274 was developed by Technical Committee ISO/TC 78, *Aromatic hydrocarbons*, and was circulated to the member bodies in October 1977.

It has been approved by the member bodies of the following countries :

Australia	Germany, F. R.	Portugal
Austria	Hungary	Romania
Brazil	India	South Africa, Rep. of
Bulgaria	Korea, Rep. of	Turkey
Chile	Mexico	United Kingdom
Czechoslovakia	Netherlands	USSR
Egypt, Arab Rep. of	Philippines	
France	Poland	

No member body expressed disapproval of the document.

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Aromatic hydrocarbons — Acid-wash test

WARNING — Aromatic hydrocarbons are generally toxic by inhalation, ingestion or skin absorption. Volatile aromatic hydrocarbons are also highly flammable.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies an acid-wash test for aromatic hydrocarbons.

The method gives some indication of the degree of refining, but it does not give a precise measure of the amount of unsaturated compounds present, as different unsaturated compounds produce different colorations with sulphuric acid.

2 PRINCIPLE

Shaking together of equal volumes of the sample and 95 % (*m/m*) sulphuric acid. Comparison of the colour of the acid layer with that of standard solutions.

3 REAGENTS

During the test, use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

3.1 Potassium dichromate, anhydrous.

3.2 Sulphuric acid, concentrated, about 98 % (*m/m*) or approximately 18 M.

3.3 Sulphuric acid, 95 ± 0,5 % (*m/m*), checked by titration.

3.4 Potassium permanganate, 3,2 g/l solution.

4 APPARATUS

4.1 Three stoppered cylinders, made of thin-walled, "colourless" glass tubing, having an internal diameter of 13 ± 0,5 mm. Each cylinder shall be about 100 mm in height to the shoulder and encircled with two marks. The upper mark shall be 70 ± 1 mm from the outside of the base of the cylinder and the lower mark shall be so placed that the capacity of the cylinder to that mark differs from that between the upper and the lower mark by not more than 0,1 ml.

It is essential that the three cylinders be similar in all respects, including colour.

4.2 Water bath, capable of being controlled at 20 ± 1 °C.

5 SAMPLING[1)]

Take a representative sample of not less than 1 000 ml from the bulk of the material.

6 PROCEDURE

WARNING — This test is potentially dangerous to the operator and adequate precautions should be taken to avoid contact of the highly corrosive and oxidizing solution with the skin or eyes. Goggles should be worn.

6.1 Preparation of colour standards

The colour standards shall be prepared by dissolving the potassium dichromate (3.1) in sulphuric acid and water. In preparing them, careful attention shall be paid to the following details.

6.1.1 The standards have oxidizing properties and shall therefore be made and stored out of contact with organic matter of any kind. Use glass-stoppered apparatus, entirely free from grease and dust, for preparing and storing the solutions.

6.1.2 Prepare a stock dilute acid solution, containing equal volumes of water and the 98 % (*m/m*) sulphuric acid (3.2), by cautiously adding the acid to water with constant stirring, and bring to room temperature before use.

6.1.3 Check the water and the sulphuric acid for freedom from oxidizable matter by adding 2 drops (0,1 ml) of the potassium permanganate solution (3.4) to 100 ml of the stock dilute acid solution. The permanganate should not be decolorized within 5 min.

1) The sampling of aromatic hydrocarbons will form the subject of ISO 1995.