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INTERNATIONAL STANDARD 2210

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Liquid halogenated hydrocarbons for industrial use — Determination of residue on evaporation

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

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 2210 was drawn up by Technical Committee ISO/TC 47, *Chemistry*.

It was approved in May 1971 by the Member Bodies of the following countries :

Austria	Israel	Sweden
Belgium	Italy	Switzerland
Egypt, Arab Rep. of	Netherlands	Turkey
France	Portugal	United Kingdom
Germany	Romania	U.S.A.
Hungary	South Africa, Rep. of	U.S.S.R.
India	Spain	

The Member Body of the following country expressed disapproval of the document on technical grounds :

New Zealand

Printed in Switzerland

Liquid halogenated hydrocarbons for industrial use — Determination of residue on evaporation

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for determining the residue on evaporation of liquid halogenated hydrocarbons for industrial use.

This method can be applied also to other liquids behaving, in respect of evaporation, like halogenated hydrocarbons.

2 PRINCIPLE

Weighing of the residue obtained after evaporation of a test portion at its boiling point, and drying at 110 °C to constant mass.

3 APPARATUS

Ordinary laboratory apparatus and

3.1 Platinum dish or, in the absence of this, a borosilicate glass dish, of approximately 140 ml capacity and 85 mm diameter.

3.2 Apparatus for heating the dish (3.1) by transmission of the heat obtained by boiling under reflux a halogenated hydrocarbon of the same type as the sample. For halogenated hydrocarbons with a boiling point below 100 °C a water bath may be used, controlled at the boiling point of the sample.

An example of such an arrangement is shown in the Figure.

3.3 Oven, capable of being maintained at 110 ± 2 °C.

4 PROCEDURE

Weigh the dish (3.1) to the nearest 0.2 mg, after heating for 30 min in the oven (3.3) at 110 °C and cooling in a desiccator, for 30 min in the case of a platinum dish, or 45 min in the case of a borosilicate glass dish.

Introduce into the dish 100.0 ml of the halogenated hydrocarbon to be tested.

Place the dish on the heating apparatus (3.2), and place an inverted funnel over it to protect against the deposition of dust. Carry out the procedure in a fume hood.

Wait until all the liquid has evaporated.

Then place the dish, containing the residue, in the oven (3.3) with the temperature previously set at 110 ± 2 °C.

Dry until the mass is constant to within ± 0.2 mg, leaving it to cool in a desiccator before each weighing for the same time as before the initial weighing.

If constant mass cannot be reached, take a new test portion and dry it for 1 h in the oven (3.3).

5 EXPRESSION OF RESULTS

The residue on evaporation is expressed, as a percentage by mass, by the formula :

$$\frac{m \times 100}{\rho_{20} \times V} = \frac{m}{\rho_{20}}$$

where

m is the mass, in grams, of the weighed residue;

ρ_{20} is the density, in grams per millilitre, of the test sample at 20 °C;

V is the volume, in millilitres, of the test portion, i.e. 100 ml.

6 TEST REPORT

The test report shall include the following particulars :

a) the reference of the method used;

b) the results and the method of expression used;

c) any unusual features noted during the determination;

d) any operation not included in this International Standard or regarded as optional.

Approximate dimensions in millimetre

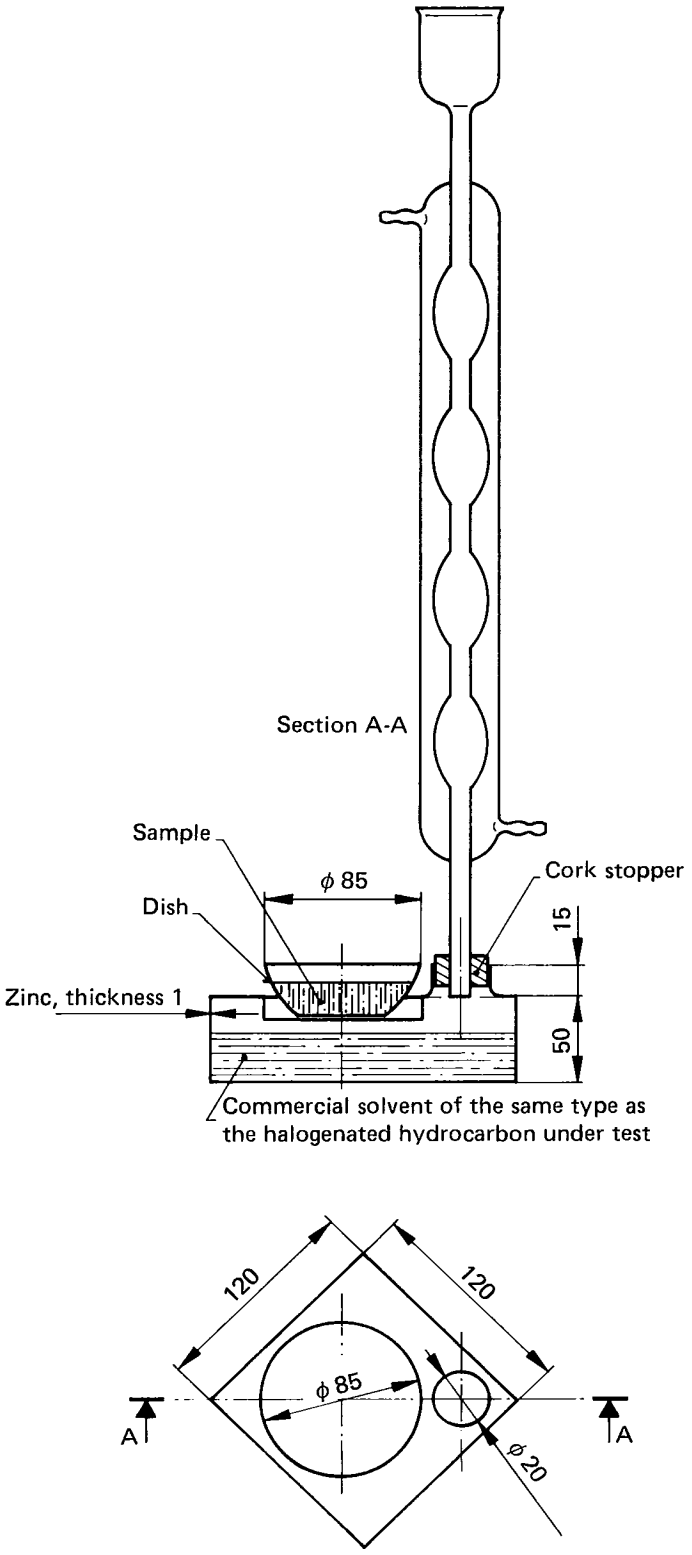

FIGURE – **Apparatus for determination of residue on evaporation**