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Methods for

Sampling raw materials for paints and varnishes

[ISO title: Raw materials for paints and varnishes — Sampling]

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- British Resin Manufacturers' Association
- Fosfa International
- Greater London Council
- Oil and Colour Chemists' association
- Overseas Development Administration (Tropical Development and Research Institute)
- Paint Research Association
- Paintmakers' Association of Great Britain Ltd.
- Seed Crushers' and Oil Processors' Association

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National foreword

This revision of BS 4726 has been prepared under the direction of the Pigments, Paints and Varnishes Standards Committee. It is identical with ISO 842:1984 “*Raw materials for paints and varnishes — Sampling*”, published by the International Organization for Standardization (ISO). This edition of the standard supersedes BS 4726:1971, which is withdrawn.

The essential differences from the first edition of this standard are the inclusion of a new clause (clause 4) drawing attention to the safety precautions to be observed when sampling and the expansion of the clause (clause 13) describing the sampling report and labelling to give more precise requirements.

It should be noted that the procedures described in this standard are intended to be carried out by suitably trained and/or supervised personnel. The substances and procedures described may be injurious to health if inadequate precautions are taken. This standard refers to its technical suitability and does not absolve the user from statutory obligations relating to health and safety.

Attention is drawn to 8.2.2 and the need to take special care when opening taps or drip cocks that may be under pressure. In particular, care is required when attempting to clear a blockage by rodding.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

Wherever the words “International Standard” appear, referring to this standard they should be read as “British Standard”.

Cross-references

International Standard	Corresponding British Standard
ISO 3170:1975	BS 3195 <i>Methods for sampling petroleum products</i> Part 1:1978 <i>Liquid hydrocarbons: manual sampling</i> (Identical)

The Technical Committee has reviewed the provisions of ISO 56-1, ISO 1995, ISO 3165, ISO 3171 and ISO 6206 to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard. A related British Standard to ISO 56-1 is BS 3280:1960 “*Hand-made shellac*”. A related British Standard to ISO 1995 is BS 3195 “*Methods of sampling petroleum products*”. A related British Standard to ISO 3165 is BS 5309 “*Methods for sampling chemical properties*” Part 1:1976 “*Introduction and general principles*”. No British Standard corresponds either to ISO 3171 or to ISO 6206.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

Correct sampling is a difficult process and one that requires most careful attention. It is therefore essential that it should be carried out under the supervision of an experienced sampler.

The procedures given below are recognized as good practice and it is strongly recommended that they be followed whenever practicable. It is recognized that it is difficult to lay down fixed rules to be followed in every case and particular circumstances may render some modification of the methods desirable. It should always be the aim to obtain a sample that is properly representative of the bulk of the material.

In some cases the act of taking a sample exposes the sampler to personal risk or may cause the creation of hazardous conditions endangering the safety or others. ISO 3165 gives general guidance on safety in the sampling of chemical products for industrial use and is intended to assist those engaged in sampling or in directing the activities of samplers.

The main differences with the first edition are that a clause "Safety precautions" has been introduced, the definitions have been aligned with ISO 6206 and the labelling requirements have been made more explicit.

1 Scope and field of application

This International Standard describes methods for the sampling of raw materials for paints and varnishes and describes and illustrates apparatus that can be used for this purpose. Suitable methods are included for sampling oils and other non-volatile liquids, and dry powders such as pigments and extenders. Suitable methods are also given for labelling and transport of the samples.

For sampling solvents (clause 9) refer to ISO 1995, ISO 3170 and ISO 3171; for sampling solids (clause 10) refer to ISO 56-1.

2 References

- ISO 56-1, *Shellac — Specification — Part 1: Hand-made shellac*.
- ISO 1995, *Aromatic hydrocarbons — Sampling*.
- ISO 3165, *Sampling of chemical products for industrial use — Safety in sampling*.
- ISO 3170, *Petroleum products — Liquid hydrocarbons — Manual sampling*.
- ISO 3171, *Petroleum products — Liquid hydrocarbons — Automatic pipeline sampling*.
- ISO 6206, *Chemical products for industrial use — Sampling — Vocabulary*.

3 Definitions

For the purpose of this International Standard, the following definitions apply.

3.1

batch; lot

a definite quantity of a material produced under conditions which are presumed uniform

3.2

consignment

a quantity of material covered by a particular consignment note or shipping document

3.3

sample

a definite quantity of material taken from a batch or consignment and intended to provide information necessary for assessing a characteristic of that batch or consignment

3.4

bulk sample; gross sample

the total material obtained by the sampling procedure

3.5

reduced sample

a sample obtained by applying a method of reduction to the gross sample

3.6

top sample

a sample taken at approximately one-tenth of the depth below the top surface of the material in a container

3.7

middle sample

a sample taken at approximately one-half of the depth of the material in a container

3.8

bottom sample

a sample taken at approximately one-tenth of the depth above the lowest part of a container

4 Safety precautions

4.1 A number of hazards may arise in the sampling of materials, for example solvents, acrylic monomers and certain pigments. They include flammability and toxicity by inhalation and/or absorption by the skin. Most manufacturers advise prospective users and others in the handling of their products.

Further information on individual substances is given in the following publications:

Conseil de l'Europe (Sous-comité de la santé et sécurité industrielle) — (Section chimie), *Substances chimiques dangereuses et proposition concernant leur étiquetage*, Strasbourg, 3^{ème} éd., 1971.

SAX, N. IRVING, *Dangerous properties of industrial materials*, Van Nostrand Reinhold.

BROWNING, ETHEL, *Toxicity and metabolism of industrial solvents*, Elsevier, Amsterdam.

MUIR, G. D. (Ed.), *Hazards in the chemical laboratory*, Royal Institute of Chemistry, London.

GASTON, P. J., *The care, handling and disposal of dangerous chemicals*, Institute of Science Technology.

Further information may also be obtained from the Manufacturing Chemists Association Inc. of Washington, D.C., USA, which publishes Chemical Safety Data Sheets relating to specific chemicals.

Reference should be made to relevant national legislation concerning hazards and safety precautions for the product being sampled.

4.2 It is strongly recommended that two persons should be present when samples are drawn from large containers such as storage tanks, road tanks or rail tanks.

4.3 Before sampling from rail tanks, ascertain that no shunting operations are to be carried out.

Ensure that the vehicles are securely parked and that the brakes are fully applied.

4.4 In order, on the one hand, to allow for the high coefficient of expansion of certain products and for the need ultimately to mix the samples thoroughly to obtain representative test samples and, on the other hand, to avoid too large an air space which can adversely affect most oils, the sample containers shall be filled to between about 80 and 90 % of their total capacity.

WARNING — During sampling of a product avoid, as far as possible, contact between the product and the skin, clothing, etc. The correct treatment for any harmful materials shall be known beforehand and the appropriate materials for treatment and the antidote shall be readily at hand.

4.5 Make sure that the tank and the sampling container are adequately earthed.

5 Cleanliness safeguards

Special care is necessary to ensure that all sampling apparatus is clean and dry when used. Sampling instruments may first be cleaned with an appropriate (mineral) solvent and subsequently with a hot solution of soap or other detergent, care being taken to wash away the last traces with scalding hot water. If a source of steam is available, the instruments may receive a final cleaning in a jet of steam. Finally, the operator shall ensure that the apparatus is thoroughly dry.

Throughout the sampling operation the operator shall take care to avoid contamination of the sample, such as transfer of dirt during handling.

Sampling shall be carried out in such a manner as to protect the samples, the material being sampled, the sampling instruments and the containers in which the samples are placed, from adventitious contamination by rain, dust, etc.

Material adhering to the outside of the sampling instrument shall be removed before the contents are discharged. The sampling instruments shall be emptied and cleaned immediately after sampling.

6 Containers for samples

For liquid samples, the containers used shall be either bottles of colourless or amber glass, or metal cans. For pastes, mixtures of liquids and solids, or solids, wide-mouth metal cans or glass jars shall be used. The container and its stopper shall be of a material that will not contaminate the sample.

Bottles and jars of colourless glass have the advantages that their cleanliness can be visually checked and also that they enable a check to be made easily on whether the sample contains free water or other impurities. Bottles and jars of amber glass provide only a partial protection against the action of light; for materials particularly sensitive to the action of light, complete protection shall be obtained by putting the bottle or jar in a cardboard box or by covering it with black paper or aluminium foil.