

Specifications for

Lead chromes and zinc chromes for paints

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- Admiralty*
- Air Ministry
- Association of British Chemical Manufacturers*
- Board of Trade
- British Colour Makers' Association*
- British Railways, British Transport Commission
- Crown Agents for Oversea Governments and Administrations*
- D.S.I.R. — Building Research Station*
- D.S.I.R. — Laboratory of the Government Chemist
- Incorporated Institute of British Decorators*
- Lead Oxide Convention*
- London County Council
- Ministry of Aviation
- Ministry of Public Building and Works*
- National Federation of Builders' and Plumbers' Merchants
- Oil & Colour Chemists Association*
- Paint Manufacturers and Allied Trades Association*
- Paint Manufacturers Joint Executive Council*
- Post Office
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- Royal Institute of British Architects
- Royal Institute of Public Health and Hygiene
- Titanium Pigment Manufacturers' Technical Committee*
- War Office*
- White Lead Convention*
- Zinc Development Association*
- Zinc Pigment Development Association

This British Standard, having been approved by the Pigments, Paints and Varnishes Industry Standards Committee and endorsed by the Chairman of the Chemical Divisional Council, was published under the authority of the General Council on 6 February 1963

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Second revision April 1953
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The following BSI references relate to the work on this standard:
Committee references PVC/1, PVC/1/8
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The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- British Electrical & Allied Manufacturers Association
- National Federation of Master Painters & Decorators of England & Wales

Amendments issued since publication

Amd. No.	Date	Comments

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Foreword

This standard makes reference to the following British Standards:

BS 242, *Refined linseed oil for paints*.

BS 245, *White spirit*.

BS 254, *Zinc oxide (Types 1 and 2)*.

BS 410, *Test sieves*.

BS 612, *Nessler cylinders*.

BS 846, *Burettes and bulb burettes*.

BS 950, *Artificial daylight fittings for colour matching*.

BS 1752, *Sintered disk filters for laboratory use*.

BS 1792, *One-mark volumetric flasks*.

BS 1795, *Extenders for paints*.

BS 1851, *Titanium dioxide pigments for paints*.

When the British Standard for lead chromes, BS 282, was first issued, the main criterion of value of a lead chrome was that it should consist entirely of water-insoluble compounds of lead. In 1953, when the specification was last revised, the position was substantially the same, for although newer types of lead chromes had by then appeared their use was still on a small scale. Since then, however, there has been an increasing use of so-called "treated chromes" in which considerably improved properties, particularly greater resistance to darkening under the action of light, have been achieved by surface treatment of chromes under carefully controlled conditions. Such chromes cannot consist wholly of water-insoluble compounds of lead and hence do not conform to the requirements of BS 282:1953. Because of the nature and variety of the treating agents to lay are used (and those which may be used in the future) it is impracticable which down a composition specification which would not be undesirably restrictive. In any case such a specification would be of no assistance to users of these pigments in assessing their value in actual performance.

The specification has, therefore, been rewritten so as to cover, with safeguards, both treated and untreated types of chromes. The method for the determination of aluminium given in BS 282:1953 is no longer required and has been omitted.

The changes in the case of the British Standard for zinc chromes, BS 389, are almost entirely of an editorial character.

A separate specification has been written for each of the three types of zinc chrome, which, it is thought, will be clearer and more convenient than the arrangement followed in BS 389:1953. The test for matter insoluble in ammonia solution in the 1953 specification has been replaced by a test for insolubility in ammoniacal ammonium chloride solution, which gives more consistent results. In the case of the Type 3 material, an upper limit has been imposed on the metallic zinc content.

The test methods in the Appendices have undergone editorial rearrangement to bring them into line with current practice in British Standards.

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 to iv, pages 1 to 15 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.

Lead chromes

1 Scope and description

This British Standard applies to lead chromes for use in paints, both those consisting wholly of water-insoluble compounds of lead and those containing additions introduced specifically to improve certain pigmentary properties. It is not intended to apply to mixtures of lead chromes with other separately prepared lead compounds other than chromes nor to mixtures with extenders or diluents. The material shall be in the form of a dry soft powder or in such a condition that it may be readily reduced thereto by crushing under a palette knife, without necessitating any grinding action.

2 Composition

The purchaser may require the vendor to declare whether the lead chrome is of an untreated or treated type.

In the former case it shall consist wholly of water-insoluble compounds of lead, except as provided by Clause 7.

In the case of treated chromes the purchaser may require the vendor to state the nature of the improved properties which are claimed to result from the treatment and may require the vendor to state the minimum percentage content of lead determined in the manner described in Appendix K.

In all cases the material shall be free from organic colours and lakes when tested in the manner described in Appendix A.

3 Sample

For the purpose of examination representative samples shall be taken at random from not less than 10 per cent of the original and previously unopened containers. The material shall be thoroughly mixed and shall then be divided into triplicate samples weighing not less than 0.45 kg (1 lb) each. These shall be packed in clean, dry, air-tight, non-absorbent, opaque or dark glass containers on which the sample has no action. The containers shall be of such a size that they are nearly filled by the sample. Each sample container so filled shall be sealed and shall be marked with full details and date of sampling.

4 Agreed sample

Except where otherwise agreed between the purchaser and the vendor, the agreed sample referred to in Clauses 8, 9, 10 and 11 shall be one and the same sample and shall comply in all respects with the other requirements of this specification. The sample shall weigh not less than 0.45 kg (1 lb) and shall be packed in the manner specified in Clause 3.

5 Residue on sieve

The material shall not leave more than 0.5 per cent by weight of residue when tested in the manner described in Appendix B.

6 Matter volatile at 100 °C

The loss in weight, on heating the material in the manner described in Appendix C, shall not exceed 1.0 per cent.

7 Matter soluble in water

The material shall not yield more than 1.0 per cent by weight of matter soluble in water when tested in the manner described in Appendix D.

The acidity or alkalinity of the aqueous extract, when determined in the manner described in Appendix D, shall not exceed the equivalent of 0.1 per cent by weight of sulphuric acid, H_2SO_4 , or sodium carbonate, Na_2CO_3 calculated on the material.

8 Oil absorption value

The oil absorption value of the material, when determined in the manner described in Appendix E, shall be within ± 10 per cent of the oil absorption value of the agreed sample.

9 Colour

The colour of the material shall closely match that of the agreed sample, when compared in the manner described in Appendix F.

10 Stability of colour to light

The colour of the material shall not change to a greater extent than that of the agreed sample, when compared in the manner described in Appendix G.

11 Staining power and colour on reduction

The staining power of the material shall not be inferior to, and the colour on reduction shall closely match, that of the agreed sample, when compared in the manner described in Appendix H.

12 Soluble lead

If it is required to determine the soluble lead content of the material, this shall be done by the method described in Appendix J.