

Transformed

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

**ISO RECOMMENDATION
R 1249**

ZINC CHROMATE PIGMENTS

**BASIC ZINC POTASSIUM CHROMATE PIGMENTS
AND ZINC TETRAHYDROXYCHROMATE PIGMENTS**

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 1249, *Zinc chromate pigments – Basic zinc potassium chromate pigments and zinc tetrahydroxychromate pigments*, 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. 1249, which was circulated to all the ISO Member Bodies for enquiry in November 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Israel	Sweden
Austria	Italy	Switzerland
Denmark	Netherlands	Turkey
Germany	Peru	U.A.R.
Greece	Poland	United Kingdom
India	Portugal	U.S.S.R.
Iran	South Africa, Rep. of	
Ireland	Spain	

The following Member Body opposed the approval of the Draft :

France

The Netherlands Member Body opposed the approval of clause 4.5.4 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.

ZINC CHROMATE PIGMENTS

BASIC ZINC POTASSIUM CHROMATE PIGMENTS AND ZINC TETRAHYDROXYCHROMATE PIGMENTS

1. SCOPE

This ISO Recommendation specifies the requirements and the corresponding methods of test for the following zinc chromate pigments :

(1) **Basic zinc potassium chromate pigments (Type 1 a) :**

Pigments of approximate composition $K_2CrO_4 \cdot 3ZnCrO_4 \cdot Zn(OH)_2 \cdot 2H_2O$, suitable for use in paints and corrosion inhibiting coatings.

(2) **Basic zinc potassium chromate pigments, lead-containing (Type 1 b) :**

Pigments of approximate composition $K_2CrO_4 \cdot 3ZnCrO_4 \cdot Zn(OH)_2 \cdot 2H_2O$, in which a lead content up to 2 % maximum is allowed, calculated as PbO , suitable for use in paints and corrosion inhibiting coatings.

(3) **Zinc tetrahydroxychromate pigments (Type 2) :**

Pigments of approximate composition $ZnCrO_4 \cdot 4Zn(OH)_2$, suitable for use in corrosion inhibiting coatings.

2. REQUIRED CHARACTERISTICS AND THEIR TOLERANCES

Basic zinc potassium chromate pigments (Types 1 a and 1 b) and zinc tetrahydroxychromate pigments (Type 2) should have the characteristics shown in the following Table.

TABLE – Required characteristics

Characteristic*	Requirements according to Type			Test method
	Basic zinc potassium chromate pigments Type 1 a	Basic zinc potassium chromate pigments, lead-containing Type 1 b	Zinc tetrahydroxy-chromate pigments Type 2	
Zinc content % ZnO	35 to 40	35 to 40	68.5 to 72	clause 4.1
Chromate content % CrO ₃	min. 42	min. 42	17 to 19	clause 4.2
Alkali metal content % K ₂ O	max. 12	max. 12	—	clause 4.3
Lead content % PbO	—	max. 2.0	—	clause 4.4
Water-soluble sulphate content % SO ₄	max. 0.1	max. 0.1	max. 0.1**	clause 4.5.2
Water-soluble chloride content % Cl	max. 0.1	max. 0.1	max. 0.1**	clause 4.5.3
Water-soluble nitrate content % NO ₃	max. 0.1	max. 0.1	—	clauses 4.5.4 and 4.5.5
Chromate content in 100 ml of extract g CrO ₃ /100 ml (from 10 g of pigment)	0.06 to 0.15	0.06 to 0.15	—	clause 4.5.6
Matter soluble in water %	—	—	max. 0.3	clause 4.5.7
Matter insoluble in ammoniacal ammonium chloride solution %	max. 0.5	max. 3.0	max. 0.5	clause 4.6
Volatile matter at 105 °C %	max. 1.0	max. 1.0	max. 1.0	ISO/R 787, Part II
Oil absorption value, compared with value of sample agreed between purchaser and vendor	within ± 15 %	within ± 15 %	within ± 15 %	ISO/R 787, Part V
Residue on sieve (63 µm) — oil method %	max. 0.5	max. 0.5	max. 0.5	ISO/R 787, Part VI
— water method %	max. 0.3	max. 0.3	max. 0.3	ISO/R 787, Part VII

* If zinc chromate pigments are used as colouring pigments, and the colour and relative tinting strength are agreed between purchaser and vendor, the test methods for the determination of these properties should be those given in ISO Recommendation R 787, *General methods of test for pigments*.

** For zinc tetrahydroxychromate, the water-soluble sulphate and chloride content are to be determined separately only if the content of matter soluble in water exceeds 0.2 %.