Coating powders - Part 4: Calculation of lower explosion limit



## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 8130- 4:2010 sisaldab Euroopa standardi EN ISO 8130-4:2010 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 8130- 4:2010 consists of the English text of the European standard EN ISO 8130-4:2010.
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Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuopäev on 10.11.2010.	Date of Availability of the European standard text 10.11.2010.
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# EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

# EN ISO 8130-4

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Management Centre: Avenue Marnix 17, B-1000 Brussels

## Foreword

The text of ISO 8130-4:1992, including Cor 1:1993 has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 8130-4:2010 by Technical Committee CEN/TC 139 "Paints and varnishes" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2011, and conflicting national standards shall be withdrawn at the latest by May 2011.

Attention is drawn to the obssibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENEL Internal Regulations, the national standards organizations of the following countries are bound to implement is European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.



The text of ISO 8130-4:1992, including Cor without any modification.

1:1033 has been approved by CEN as a EN ISO 8130-4:2010

## Coating powders -



#### 1 Scope

This part of ISO 8130 specifies a method for the calculation of the lower explosion limit of a coating powder, i.e. the minimum concentration of the coating powder in air which will form an explosive mix-ture. It is based on the knowledge of the gross calorific value of the product, as determined by the method described in ISO 1928, or on the gross calorific values of the constituents of the product.

Reliable methods for the measurement of this quantity require the use of special apparatus which may not be readily available, A method for determining the explosion indices of combustible dusts in air is given in ISO 6184-1. This method is, however, very intricate, requires considerable expertise and is expensive. The calculation method leads to lower explosion limits which have been proved in practice to be satisfactory when applied to coating application plants.

### NOTES

1 With powders that are not flammable, such as those of the poly(vinyl chloride) type, the method may nevertheless give a value for the lower explosion limit in air. Thus, any underestimation of an explosion risk is effectively avoided.

2 The calculation used in this International Standard is based on the following assumptions:

- a) that material exists in the form of a molecular dispersion;
- b) that there is complete combustion of the meterial to the highest oxidation level;
- c) that there is an adiabatic type of reaction;
- d) that the flame temperature for the composition with which the minimum concentration for explosion in air is attained is 1 000 °C.

#### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8130. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8130 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of ·IEC and ISO maintain registers of currently valid Onternational Standards.

60 842:1984, Raw materials for paints and varnishes ampling.

ISO 1926,1976, Solid mineral fuels - Determination of gross calorific value by the calorimeter bomb method, and calculation of net calorific value.

ISO 6184-1:1965. Explosion protection systems — Part 1: Determination of explosion indices of of combustible dusts in air.

#### 3 Definition

of ISO 8130, the follow-For the purposes of this par ing definition applies.

3.1 lower explosion limit: The concentration of coating powder, expressed in grams per cubic metre, in a mixture of powder and air, below which self-propagation of flames is not possible.

### Sampling

Take a representative sample of the product to be tested, as described in ISO 842.