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Coating powders —

Part 14: Vocabulary

Poudres pour revêtement —

Partie 14: Vocabulaire

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

This second edition cancels and replaces the first edition (ISO 8130-14:2004) which has been technically revised.

The main changes compared to the previous edition are as follows:

— the title of this document has been changed from "terminology" to "vocabulary";

— the following terms have been added: particle strength, sieve blinding, shelf life;

— the term, obscuration, has been moved to ISO 8130-13;

— the term "electrostatic spraying" has been changed to "electrostatic powder spraying" with the definition unchanged;

— the text has been editorially revised and the normative references have been updated.

A list of all the parts in the ISO 8130 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Coating powders —

Part 14: Vocabulary

1 Scope

This document defines special terms used in the field of coating powders.

Other terms and definitions related to paints and varnishes are given in ISO 4618.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
agglomeration
condition in which individual particles become joined together into larger assemblies

3.2
back ionization
electrostatic rejection
electrostatic repulsion
dielectric breakdown in an electrostatically deposited powder caused by an excess accumulation of charge

Note 1 to entry: The phenomenon is associated with the disruption of the layer, leading to surface defects and to the eventual disintegration of the coating.

3.3
charge-to-mass ratio
ratio of the electric charge on a powder sample to its mass

Note 1 to entry: A ratio of at least 10^{-4} C·kg^{-1} is normally required for acceptable coating performance.

3.4
classification
division of a powder sample into two fractions, one above, the other below a predetermined particle size

3.5
coating powder
finely divided particles of resin, either thermoplastic or thermosetting, generally incorporating pigments, fillers (extenders) and additives, and remaining finely divided during storage under suitable conditions, which, after fusion and possibly curing, give a continuous film

3.6
compaction
agglomeration of particles under pressure

3.7
deposition efficiency
proportion of the mass of powder deposited on a substrate compared to the mass of powder sprayed

3.8
electrostatic fluidized bed
apparatus which allows a powder sample to be fluidized and which, at the same time, has a means of electrically charging the powder particles

Note 1 to entry: The charged powder forms a cloud above the bed and will deposit on an earthed article brought in contact with it.

3.9
electrostatic powder spraying
powder application process in which the powder particles are given an electric charge resulting in their attraction to an earthed workpiece

3.10
Faraday cage effect
prevention of charged particles from entering and properly covering corners or recesses, due to the diversion of electric force lines to more accessible ground points, during electrostatic spraying

3.11
fines
particles having a size below an accepted minimum value

Note 1 to entry: The fines are often regarded as the reject portion from a grinding process.

3.12
gelation
conversion of a molten coating powder into a non-flowing state

Note 1 to entry: Gelation will occur at the instant the curing process changes the material into a three-dimensional structure.

3.13
gel time
time taken for a specified volume of coating powder to become non-deformable, under specified conditions, after melting

3.14
hybrid coating powder
powder product based on the fusion of different resin species in which part or all of the crosslinking reaction occurs between the functional groups of the resins

3.15
impact fusion
tendency of finely divided powder particles to fuse when in high-speed contact with other particles in the application equipment during the spraying process

3.16
inclined-plate flow
inclined-plane flow
measurement of the flow characteristics of a molten thermosetting coating powder down a plane inclined at a set angle to the horizontal

3.17
incompatibility
tendency of the mixing of two different coating powders to result in the deterioration of the surface quality of the final coating

3.18
lower explosion limit
minimum explosion concentration
concentration of coating powder in a mixture of powder and air, below which self-propagation of flames is not probable

Note 1 to entry: The lower explosion limit is expressed in grams per cubic metre.

3.19
melt flow
gravimetric movement of material liquefied by heat

3.20
oversize
particles having a size above a stated maximum value

Note 1 to entry: The oversize is often regarded as a reject portion from the grinding process.

3.21
particle size
linear dimensions of particles

Note 1 to entry: The particle size is usually quoted as a mean value, and this depends on the test method as well as the shape of the particles which is mostly irregular.

3.22
particle size distribution
spread of particle sizes in a given sample of powder, expressed as a sequence of percentage masses, or volumes, of particles lying between given sizes

3.23
particle strength
capability of the particle to withstand shattering due to attrition

3.24
powder blocking
agglomeration of coating powder so as to render it unsuitable for application

3.25
powder coating
protective and/or decorative coating formed by the application of a coating powder to a substrate and fusion (and curing, if necessary) to give a continuous film

3.26
pourability (of a coating powder)
ability of a dry powder to flow or to be poured

3.27
powder flow rate
mass of powder flowing in a given time across a given boundary

Note 1 to entry: For example, this may be through a tube of known diameter or through a given opening in a vessel.

3.28
reclaimed powder
powder which has been sprayed but not deposited and, subsequently, captured for reuse

3.29
shelf life
time during which a coating material, stored under the conditions indicated by the supplier, remains stable

3.30
sieve blinding
blockage of sieve apertures either due to particle size or shape

3.31
storage stability
ability of coating material to maintain satisfactory physical and chemical properties when stored for a specific time under appropriate conditions

3.32
tribo-charging
means of applying an electric charge to a coating powder by friction rather than by the use of an electrostatic generator

Bibliography

[1] ISO 4618, *Paints and varnishes — Terms and definitions*

[2] ISO 8130-13, *Coating powders — Part 13: Particle size analysis by laser diffraction*