INTERNATIONAL STANDARD

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Coating powders —

Part 14: Terminology

Poudres pour revêtement —

Partie 14: Terminologie

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Foreword

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ISO 8130-14 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

ISO 8130 consists of the following parts, under the general title *Coating powders*:

— *Part 1: Determination of particle size distribution by sieving*

— *Part 2: Determination of density by gas comparison pyknometer (referee method)*

— *Part 3: Determination of density by liquid displacement pyknometer*

— *Part 4: Calculation of lower explosion limit*

— *Part 5: Determination of flow properties of a powder/air mixture*

— *Part 6: Determination of gel time of thermosetting coating powders at a given temperature*

— *Part 7: Determination of loss of mass on stoving*

— *Part 8: Assessment of the storage stability of thermosetting powders*

— *Part 9: Sampling*

— *Part 10: Determination of deposition efficiency*

— *Part 11: Inclined-plane flow test*

— *Part 12: Determination of compatibility*

— *Part 13: Particle size analysis by laser diffraction*

— *Part 14: Terminology*

Coating powders —

Part 14: Terminology

1 Scope

This part of ISO 8130 defines special terms used in the field of coating powders.

Other terms and definitions related to paints and varnishes are given in ISO 4618, *Paints and varnishes — Terms and definitions for coating materials*.

2 Terms and definitions

2.1
agglomeration
condition in which individual particles become joined together into larger assemblies

2.2
back ionization
electrostatic rejection
electrostatic repulsion
dielectric breakdown in an electrostatically deposited powder caused by an excess accumulation of charge

NOTE The phenomenon is associated with the disruption of the layer, leading to surface defects and to the eventual disintegration of the coating.

2.3
charge-to-mass ratio
ratio of the electric charge on a powder sample to its mass

NOTE A ratio of at least 10^{-4} $C \cdot kg^{-1}$ is normally required for acceptable coating performance.

2.4
classification
division of a powder sample into two fractions, one above, the other below a predetermined particle size

2.5
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

2.6
compaction
agglomeration of particles under pressure

2.7
deposition efficiency
proportion of the mass of powder deposited on a substrate compared to the mass of powder sprayed

2.8
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 The charged powder forms a cloud above the bed and will deposit on an earthed article brought in contact with it.

2.9
electrostatic rejection
electrostatic repulsion
See 2.2 back ionization

2.10
electrostatic spraying
powder application process in which the powder particles are given an electric charge resulting in their attraction to an earthed workpiece

2.11
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

2.12
fines
particles having a size below an accepted minimum value

NOTE The fines are often regarded as the reject portion from a grinding process.

2.13
gelation
conversion of a molten coating powder into a non-flowing state

NOTE Gelation will occur at the instant the curing process changes the material into a three-dimensional structure.

2.14
gel time
time taken for a specified volume of coating powder to become non-deformable, under specified conditions, after melting

2.15
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

2.16
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

2.17
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

2.18
incompatibility
tendency of the mixing of two different coating powders to result in the deterioration of the surface quality of the final coating

2.19
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 The lower explosion limit is expressed in $g \cdot m^{-3}$.

2.20
melt flow
gravimetric movement of material liquified by heat

2.21
obscuration
percentage or fraction of incident light that is attenuated due to extinction (scattering and/or absorption) by the particles during a laser diffraction measurement

2.22
oversize
particles having a size above a stated maximum value

NOTE The oversize is often regarded as a reject portion from the grinding process.

2.23
particle size
linear dimensions of particles of coating powders

NOTE 1 The particle size is usually quoted as a mean value.

NOTE 2 Coating powder particles are irregular in shape and, consequently, size data will only have any value if qualified by reference to the specific method of measurement.

2.24
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

2.25
powder blocking
agglomeration of coating powder so as to render it unsuitable for application

2.26
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

2.27
powder flow
pourability
ability of a dry powder to flow or to be poured

2.28
powder flow rate
mass of powder flowing in a given time across a given boundary

NOTE For example, this may be through a tube of known diameter or through a given opening in a vessel.

2.29
reclaimed powder
powder which has been sprayed but not deposited and, subsequently, captured for reuse

2.30
storage stability
ability of coating powders to maintain satisfactory physical and chemical properties when stored for a specific time under appropriate conditions

2.31
tribo-charging
means of applying an electric charge to a coating powder by friction rather than by the use of an electrostatic generator