



SLOVENSKI STANDARD

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Nadomešča:

SIST EN 923:2006+A1:2008

Lepila - Izrazi in definicije

Adhesives - Terms and definitions

Klebstoffe - Benennungen und Definitionen

Adhésifs - Termes et définitions

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EUROPEAN STANDARD
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English Version

Adhesives - Terms and definitions

Adhésifs - Termes et définitions

Klebstoffe - Benennungen und Definitionen

This European Standard was approved by CEN on 16 November 2015.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 923:2015) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by AENOR.

This document supersedes EN 923:2005+A1:2008.

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of an identical text or by endorsement, at the latest by June 2016, and conflicting national standards shall be withdrawn at the latest by June 2016.

In comparison to EN 923:2005+A1:2008, several new terms have been added (3 terms to Section 2.1, 3 terms to Section 2.2, 7 terms to section 2.3, 3 terms to Section 2.4, 1 term to Section 2.5, 1 term to Section 2.6, 1 term to Section 2.7) and some definitions have been updated or corrected.

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

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom. (standards.iteh.ai)

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EN 923:2015 (E)**Introduction**

This European Standard comprises terms peculiar to, or in general use in, the adhesive and adhesive processing industry.

The terms defined have been classified so that, as far as possible, related concepts (adhesives, functional adhesive components, chemical base products, adherents, adhesives properties, bonding, and bond properties) are grouped together. All definitions are numbered and an alphabetical index which includes all terms is provided at the end of this European Standard.

The numbering of the individual definitions is the same in all three versions (English, French and German) of this European Standard. Consequently this European Standard can be used as a dictionary, combined with one or both of the other versions as an aid for translation of terms into French or German, as a source of information about related concepts in the adhesive industry or to provide a term for a concept.

In order to find:

- a) the definition of a term: look up the term in the alphabetical index at the end of this European Standard. The index will refer to the number in this European Standard. The definition, the term and any synonyms appear by the number;
- b) information about related terms: look up the term in the alphabetical index to find its number in this European Standard. When the term has been located in this European Standard, the related concepts can be found in the same subdivision;
- c) the translation of a term into the French or German language: look up the number of this term in this European Standard and locate the translation of the term and the definition under the same number in the standard of the foreign version.

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1 Scope

This European Standard defines terms used in the adhesive industry and terms relating to adhesives in those industries that use adhesives.

2 Terms and definitions

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

2.1 Adhesives

2.1.1

adhesive

non-metallic substance capable of joining materials by surface bonding (adhesion), and the bond possessing adequate internal strength (cohesion)

Note 1 to entry: Many adhesives names refer to their main functional components or the physical nature of the adhesive.

Table A.1 lists main binders, temperature and mode of setting of these adhesives and the number of parts that have to be mixed before use. Some other names refer to

— the method of application, or

— the mode of setting.

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Furthermore, adhesives are named according to points of less significance:

— field of application (e.g. footwear adhesive, construction adhesive, packaging adhesive),

— material to bond (e.g. paper adhesive, wood adhesive, wall paper adhesive, rubber adhesive),

— place of application (e.g. *in situ* adhesive),

— speed of setting (e.g. instant adhesive),

— bond properties (e.g. structural adhesive),

— shape (e.g. powder adhesive, pearl glue, table glue for solid glue, adhesive film for shaped adhesive, or stick adhesive for stick shaped adhesives), or

— aspect (e.g. white glue).

2.1.2

water-borne adhesive

aqueous adhesive

adhesive in which the solvent, or the continuous phase is water

2.1.3

glue

aqueous adhesive specifically designed for bonding of wood and other porous substrates

Note 1 to entry: A glue can be based on a natural product like protein or synthetic resins (UF, PF or PVAC, see 2.3.51, 2.3.52 and 2.3.30 respectively)

EN 923:2015 (E)**2.1.4****paste adhesive**

adhesive of a non-stringy, highly viscous nature

Note 1 to entry: Paste adhesives based on starch or cellulose ethers are usually applied for paper bonding (e.g. paper bags or wall paper).

2.1.5**dispersion adhesive**

adhesive consisting of a stable dispersion of a polymer in a liquid continuous phase, usually water

Note 1 to entry: Dispersion adhesives containing an elastomer as polymer conventionally are often termed "latex".

2.1.6**emulsion adhesive**

adhesive consisting of a stable emulsion of a liquid hydrophobic resin in water

2.1.7**solvent-borne adhesive**

solution adhesive

solvent-based adhesive

adhesive in which the binder is dissolved in a volatile organic solvent

2.1.8**solvent free adhesive**

adhesive that is substantially free from organic solvents (see 2.1.7)

Note 1 to entry: "Substantially free" means that organic solvents have neither been added in the basic elements of an adhesive nor during its process of manufacture out of these basic elements. "Low solvent adhesives" contain at most 5 % of solvents based on total weight of the adhesive.

2.1.9**plastisol adhesive**

paste or liquid adhesive material comprising a dispersion of a polymer resin in a plasticizer that when partially heated, gels as the plasticizer is incorporated into the swollen polymer to form a solid system

Note 1 to entry: The plastisol will be converted into a solid plastic simply by heating to fully fuse.

2.1.10**toughened adhesive**

adhesive which by virtue of its physical structure discourages propagation of cracks

Note 1 to entry: The toughening can be achieved, for example, by the creation of a discrete elastomeric phase within the adhesive matrix.

2.1.11**spray adhesive**

adhesive that is projected in small particles by means of a pressure medium

2.1.12**gap-filling adhesive**

adhesive designed for filling wider gaps between uneven surfaces

Note 1 to entry: For high strength load-bearing purposes, e.g. in the car industry, the adhesive will provide satisfactory bond strength in bond-lines up to 1 mm in thickness. For the construction industry, high solid adhesives designed for use between uneven surfaces and to bond satisfactorily in gaps up to 6 mm are used.

2.1.13**sealant**

adhesive material, used to fill gaps where movement can occur in service and which, when set, can accommodate movement

Note 1 to entry: The term "sealant" is also used for a material filling a void against the ingress or egress of a fluid, gaseous substance or airborne particles under pressure.

2.1.14**film adhesive**

adhesive in film form, with or without a carrier

Note 1 to entry: Film adhesives set usually by means of heat under pressure.

2.1.15**foaming adhesive**

adhesive designed to foam in situ, after application, in order to provide extensive gap-filling properties

2.1.16**unsupported film adhesive**

adhesive supplied in sheet, film or web form, without an incorporated carrier

2.1.17**supported film adhesive**

adhesive supplied in sheet or film form with an incorporated carrier in sheet, film, fabric or web form that is coated with adhesives on one or both sides and that remains in the bond when the adhesive is applied and used

Note 1 to entry: The carrier can be woven or non-woven material consisting of organic or inorganic fibres, as well as foams, plastic or metal films, etc.

2.1.18**adhesive tape**

flexible backing or carrier coated with a pressure-sensitive, remoistenable, or heat activated adhesive

2.1.19**transfer tape**

carrier coated with a pressure-sensitive adhesive which, when detached from the substrate, permits the carrier to be removed leaving only the adhesive

2.1.20**double coated adhesive tape**

double sided adhesive tape

tape where the adhesive is applied on both sides of the carrier

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EN 923:2015 (E)**2.1.21****multiple-layer adhesive**

film adhesive, usually supported with a different adhesive composition on each side

Note 1 to entry: Multiple-layer adhesives are designed to bond dissimilar materials.

2.1.22**encapsulated adhesive**

adhesive in which particles or droplets of the adhesive or an adhesive component are enclosed in a protective film (microcapsules) usually to prevent cross-linking until the film is destroyed by suitable means

2.1.23**one-way stick adhesive**

adhesive that is applied to only one of the adherends

2.1.24**separate application adhesive**

adhesive consisting of different components which are applied separately to adherends

Note 1 to entry: Pressing together the components initiates a chemical reaction curing the bond-line.

2.1.25**two way stick adhesive**

double spread adhesive

adhesive that is applied to both adherends

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2.1.26**one-component adhesive**

one-part adhesive

adhesive ready for use

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Note 1 to entry: A one-part adhesive may require external influences such as heat, humidity, radiation, oxygen firing or the evaporation of solvents for setting.

2.1.27**two-component adhesive**

two-part adhesive

adhesive that consists of two separate reactive components that are mixed before use

2.1.28**multi-component adhesive**

multi-part adhesive

adhesive that consists of two or more separate reactive components that are mixed before use

Note 1 to entry: With some multi-part adhesives, the reactive components are applied separated onto both adherends. The curing is going to start after the assembly.

2.1.29**contact adhesive**

adhesive that is applied to both adherends and when allowed to become apparently dry will instantly develop a firm bond when a firm but not sustained pressure is applied

Note 1 to entry: “apparently dry” means that the adhesive coats are “dry to touch” at some stage in the evaporation of volatile constituents.

2.1.30**hot melt adhesive**

adhesive that is applied in the molten state and forms a bond on cooling to a solid state

Note 1 to entry: A “reactive hot melt adhesive” is a hot melt adhesive that after solidifying undergoes further crosslinking reaction e.g. by moisture or ultraviolet radiation

2.1.31**heat activated adhesive**

adhesive pre-applied to the adherends that is rendered tacky prior to use by application of heat and forms a bond on cooling under pressure

2.1.32**heat sealing adhesive**

adhesive pre-applied to one or both adherends that is activated by the application of heat and forms a bond on cooling

Note 1 to entry: Heat-sealing adhesives are commonly used in the packaging industry.

2.1.33**solvent activated adhesive**

adhesive pre-applied to an adherend that is rendered tacky immediately prior to use by the application of solvent

2.1.34**pressure sensitive adhesive (standards.iteh.ai)**

adhesive which in a dry state is permanently tacky at room temperature and adheres readily to surfaces under light and brief pressure

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Note 1 to entry: Pressure-sensitive adhesives are used for instance for the manufacture of pressure sensitive/self adhesives tapes, labels or foils.

2.1.35**cold setting adhesive**

cold glue (deprecated)

adhesive that sets without the application of heat

2.1.36**hot setting adhesive**

adhesive that sets only with the application of heat

2.1.37**reaction adhesive**

reactive adhesive

adhesive that sets by a chemical reaction of its components and/or the action of external agents

Note 1 to entry: Chemical setting or hardening sometimes is called “curing” (deprecated).

2.1.38**cold hardening adhesive**

cold curing adhesive (deprecated, see 2.1.37, Note 1 to entry)

adhesive that hardens without the application of heat

EN 923:2015 (E)**2.1.39****hot hardening adhesive**

hot curing adhesive (deprecated, see 2.1.37, Note 1 to entry)

adhesive that hardens only with the application of heat

2.1.40**combined hardening**

combined curing (deprecated)

hardening that can be obtained by more than one process (e.g. by radiation and by moisture)

2.1.41**anaerobic adhesive**

adhesive that cures (hardens) in absence of oxygen, curing (hardening) being inhibited by the presence of oxygen and catalysed by metal ions

2.1.42**moisture hardening adhesive**

moisture curing adhesive (deprecated, see 2.1.37, Note 1 to entry)

adhesive that hardens by reaction with water from the air or from an adherend

2.1.43**conductive adhesive**

adhesive especially designed to either avoid the accumulation of an electrical charge or to conduct an electrical current

2.1.44**adhesive batch**

quantity of a particular adhesive (or component of an adhesive) manufactured in a single location at a defined, limited time under defined conditions and considered to have uniform properties

Note 1 to entry: Adhesive "lot" is a commonly used commercial term for adhesive batch. A lot can consist of less or more than one batch

2.1.45**hybrid adhesive**

adhesive which is made of different binding agents such as for example polyurethane-epoxy, cement-polymer dispersion

2.1.46**radiation crosslinking adhesive**

radiation curing adhesive (deprecated)

adhesive which hardens under the influence of electromagnetic radiation (usually UV or VIS radiation)

2.1.47**adhesive lot**

quantity of a particular adhesive (or component of an adhesive) considered to have uniform properties

Note 1 to entry: Adhesive lot may consist of less or more than one adhesive batch – see 2.1.44.

2.2 Functional adhesive components**2.2.1****binder**

component of an adhesive that is primarily responsible for the adhesion and cohesion

2.2.2**monomer**

chemical compound, usually of low molecular mass, that can be converted into a polymer by combining with itself or with other chemical compounds

2.2.3**polymer**

substance composed of molecules characterized by the multiple repetition of one or more species of atoms or groups of atoms (constitutional units) linked to each other in amounts sufficient to provide a set of properties that do not markedly vary with the addition or removal of one or a few of the constitutional units

Note 1 to entry: The nature of these constitutional units, their order and the average number per molecule influence the physical and mechanical properties of the polymer.

2.2.4**copolymer**

polymer derived from more than one species of monomer

2.2.5**elastomer**

macromolecular material which returns rapidly to approximately its initial dimensions and shape after substantial deformation by a weak stress and release of the stress at room temperature

2.2.6**resin**

solid, semi solid or pseudosolid organic material that has an indefinite and often high relative molecular mass, exhibits a tendency to flow when subjected to stress, usually has a softening or melting range, and usually fractures conchoidally

Note 1 to entry: In a broader sense, the term is used to designate any polymer that is basic material for plastics. Bitumen, pitches and waxes are excluded by convention.

Note 2 to entry: Some resins may be part of a reaction adhesive (see 2.1.37).

2.2.7**synthetic resin**

resin derived from a synthetic monomer

2.2.8**thermoplastic resin**

thermoplast

polymer or copolymer capable of being softened by heating and hardened by cooling

Note 1 to entry: Softening and hardening are repeatable. Many thermoplastic materials can become thermoset by appropriate treatment to induce crosslinking, e.g. by the addition of a suitable chemical crosslinking agent or by irradiation.

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2.2.9

thermosetting resin

thermoset

monomer, polymer or copolymer, which when cured, changes into a substantially infusible and insoluble product

Note 1 to entry: The setting of a thermosetting resin undergoes three different stages: the "A-stage" at which the material is still fusible and still soluble. The intermediate pseudo-stable "B-stage" at which it is fusible and partially soluble. The "B-stage" is converted to the final crosslinked, insoluble and infusible "C-stage" by application of heat and, usually, pressure.

2.2.10

crosslinking agent

substance that causes, promotes or regulates the formation of intermolecular, covalent or ionic bonds between polymer chains resulting in a three dimensional molecular network

Note 1 to entry: Crosslinking can occur either between polymer chains or by reaction of simple functional molecules (e.g. two-component polyurethane or epoxy adhesives). Crosslinking can also be produced by radiation or oxidation. The terms "hardener" and "curing agent" (deprecated) are often used synonymously with crosslinking agent.

2.2.11

adhesion promotor

coupling agent

substance used in small proportions to increase the adhesion to specific substrates

2.2.12

accelerator

substance used in small proportions to increase the reaction rate of a chemical system (reactants, plus additives)

2.2.13

catalyst

substance used in small proportion, that augments the rate of a chemical reaction, and in theory remains unchanged chemically at the end of the reaction

2.2.14

inhibitor

substance used in small proportions to suppress a chemical reaction

2.2.15

retarder

substance used in small proportions to reduce the reaction rate of a chemical system

2.2.16

antioxidant

substance used to retard deterioration caused by oxidation

Note 1 to entry: Antioxidants are sometimes referred to as anti-aging agents.

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2.2.17**flexibilizer**

internal plasticizer

co-reactant which, when incorporated into a polymer confers improved flexibility and resilience to the polymer

Note 1 to entry: A flexibilizer provides to the adhesive film a greater extension at break, a lower modulus and a lower temperature at which it becomes brittle. A flexibilizer is not extractable and will not migrate from the adhesive film.

2.2.18**plasticizer**

external plasticizer

non-reactive substance incorporated into an adhesive to improve flexibility and resilience of its bond

Note 1 to entry: A plasticizer provides to the adhesive film a greater extension at break, a lower modulus and a lower temperature at which it becomes brittle. A plasticizer can be soluble and can migrate from the adhesive film.

2.2.19**solvent**

liquid or mixture of liquids that are used in the manufacture of adhesives to dissolve or to dilute the binder without chemical change

Note 1 to entry: Solvents are used to control the consistency and character of the adhesive and can regulate application properties.

2.2.20**diluent**

thinner (deprecated)

liquid whose sole function is to reduce the concentration of solids and viscosity of an adhesive

2.2.21**reactive diluent**

low-viscosity liquid added to a high-viscosity solvent-free adhesive which reacts chemically with the adhesive during setting

Note 1 to entry: A reactive diluent is usually mono-functional and reduces the viscosity of the adhesive with acceptable changes in other properties.

2.2.22**filler**

relatively inert solid material added to a plastic or an adhesive to modify strength, permanence, working properties or other quality

Note 1 to entry: Two classes of fillers are used:

- chemically inert fillers, e.g. china clay or wood flour;
- “reinforcing fillers” like silicates, carbon black, fibrous materials or aluminium powder that markedly enhance the performance of a polymer.

2.2.23**matrix**

part of an adhesive that surrounds or engulfs embedded filler or reinforcing particles and filaments