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Superabsorbent polymer — Sodium polyacrylate resin for absorbing blood —

Part 2: Specifications

Résines super-absorbantes — Polyacrylate de sodium pour l'absorption du sang —
Partie 2: Spécifications

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Foreword

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products.*

A list of all parts in the ISO 19699 series can be found on the ISO website.

Introduction

The property requirements described in this document have been practically used by relevant production enterprises for several years. They have proven to be reliable with respect to common criteria of quality of superabsorbent polymer of sodium polyacrylate resin used in hygiene products (such as sanitary towels and pads) and medical products (such as tourniquets and surgery coats).

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the property requirements of residual monomers, volatile content, pH, particle size distribution, density, blood absorption capacity and blood absorption rate given in Clause 4.

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Superabsorbent polymer — Sodium polyacrylate resin for absorbing blood —

Part 2: Specifications

1 Scope

This document specifies the requirements for properties, marking and packaging of superabsorbent polymer (SAP) made from sodium polyacrylate resin for absorbing blood.

This document applies to sodium polyacrylate resin, as raw material, and applies to SAP for the final products used for absorbing blood.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 17190-1, *Urine-absorbing aids for incontinence — Test methods for characterizing polymer-based absorbent materials — Part 1: Determination of pH*

ISO 17190-2, *Urine-absorbing aids for incontinence — Test methods for characterizing polymer-based absorbent materials — Part 2: Determination of amount of residual monomers*

ISO 17190-3, *Urine-absorbing aids for incontinence — Test methods for characterizing polymer-based absorbent materials — Part 3: Determination of particle size distribution by sieve fractionation*

ISO 17190-4, *Urine-absorbing aids for incontinence — Test methods for characterizing polymer-based absorbent materials — Part 4: Determination of moisture content by mass loss upon heating*

ISO 17190-9, *Urine-absorbing aids for incontinence — Test methods for characterizing polymer-based absorbent materials — Part 9: Gravimetric determination of density*

ISO 19699-1:2017, *Plastics — Superabsorbent polymer — Sodium polyacrylate resin for absorbing blood — Part 1: Test methods*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 19699-1 apply.

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

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

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

3.2 Abbreviated terms

SAP-B SAP for absorption of blood

4 Requirements

The properties of SAP resin for absorption of blood shall comply with the requirements given in Table 1.

In terms of physical appearance, sodium polyacrylate resin is white solid.

Table 1 — Requirements for properties

Property	Unit	Requirement		Test method
		Class I	Class II	
Amount of residual monomers	mg/kg	≤1 500	≤1 500	ISO 17190-2
Amount of volatile content	%	≤10,0	≤10,0	ISO 17190-4
pH	—	≥5,0 but ≤8,0	≥5,0 but ≤8,0	ISO 17190-1
Particle size distribution	%	≤5 (for particle size <150 µm)	≤5 (for particle size <106 µm)	ISO 17190-3
		≤1 (for particle size <106 µm)	≤1 (for particle size <45 µm)	
Bulk density	g/cm³	≥0,65 but ≤0,80	≥0,30 but ≤0,90	ISO 17190-9
Simulated blood absorption capacity	g/g	≥15,0	≥15,0	ISO 19699-1:2017, 4.8
Simulated blood absorption rate	s	≤50	≥50	ISO 19699-1:2017, 4.9
Whiteness	%	≥70	≥70	ISO 19699-1:2017, 4.7

For the purposes of safety concerns, the manufacturer's safety data sheet (SDS) shall be referred to.

5 Marking (optional)

The marking for the identification of sodium polyacrylate polymer for absorbing blood shall include the following information:

a) a reference to this document, i.e. ISO 19699-2;

b) the class of SAP-B: SAP-B, Class I or SAP-B, Class II;

c) the manufacturer's name, trade mark or identification mark;

d) the net weight of the resin in kilograms;

e) the date of manufacture, the date of expiration, the lot number;

f) the mark of waterproof and moisture-proof.

6 Packaging

6.1 Appearance

The packaging bag shall be smooth and without tear fracture.

Markings shall be clearly visible and readable.

6.2 Performance characteristics

The packaging should maintain the integrity of the raw material during transportation, storage and handling.