SLOVENSKI STANDARD
oSIST prEN ISO 374-6:2023

01-julij-2023

Varovalne rokavice za zaščito pred nevarnimi kemikalijami in mikroorganizmi - 6. del: Zaščitne rokavice za frizerje (ISO/DIS 374-6:2023)

Protective gloves against dangerous chemicals and micro-organisms - Part 6: Protective gloves for hairdressers (ISO/DIS 374-6:2023)

Schutzhandschuhe gegen gefährliche Chemikalien und Mikroorganismen - Teil 6: Schutzhandschuhe für Friseure (ISO/DIS 374 6:2023)

Gants de protection contre les produits chimiques dangereux et les micro-organismes - Partie 6: Gants de protection pour les coiffeurs (ISO/DIS 374-6:2023)

Ta slovenski standard je istoveten z: **prEN ISO 374-6**

ICS:

13.340.40	Varovanje dlani in rok	Hand and arm protection

oSIST prEN ISO 374-6:2023 **en,fr,de**

DRAFT INTERNATIONAL STANDARD
ISO/DIS 374-6

ISO/TC **94**/SC **13**
Secretariat: **SNV**

Voting begins on:
2023-04-20

Voting terminates on:
2023-07-13

Protective gloves against dangerous chemicals and micro-organisms —

Part 6:
Protective gloves for hairdressers

Gants de protection contre les produits chimiques dangereux et les micro-organismes —

Partie 6: Gants de protection pour les coiffeurs

ICS: 13.340.40

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/DIS 374-6:2023(E)

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Published in Switzerland

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European foreword

This document (prEN ISO 374-6:2023) has been prepared by Technical Committee CEN/TC 162 “Protective clothing including hand and arm protection and lifejackets", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 94 "Personal safety - Protective clothing and equipment".

This document is currently submitted to the CEN Enquiry.

This document has been prepared under the Standardization Request M/571 given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of Regulation (EU) 2016/425.

For relationship with EU Regulation (EU) 2016/425, see Annex ZA, which is an integral part of this document.

Protective gloves against dangerous chemicals and micro-organisms —

Part 6:
Protective gloves for hairdressers

1 Scope

This standard specifies the requirements for protective gloves to protect the hairdressers especially the risk against micro-organisms and dangerous chemicals and defines terms to be used.

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.

EN ISO 374-1+A1:2018, *Protective gloves against chemicals and micro-organisms — Part 1 terminology and performance requirements for chemical risks*

EN ISO 374-2:2019, *Protective gloves against chemicals and micro-organisms — Part 2: Determination of resistance to penetration*

EN ISO 374-5:2016, *Protective gloves against dangerous chemicals and micro-organisms — terminology and performance requirements for micro-organisms risks*

EN ISO 6529:2013, *Protective clothing - Protection against chemicals - Determination of resistance of protective clothing materials to permeation by liquids and gases*

EN ISO 21171:2006, *Medical gloves - Determination of removable surface powder*

EN ISO 21420:2019, *Protective gloves - General requirements and test methods*

EN ISO 23529:2010, *Rubber - General procedures for preparing and conditioning test pieces for physical test methods*

EN 16523-1+A1:2018, *Determination of material resistance to permeation by chemicals - Part 1: Permeation by liquid chemical under conditions of continuous contact*

3 Terms and definitions

For the purposes of this document, the terms and definitions in EN 16523-1+A1:2018, EN ISO 374-1 and EN ISO 374-5 and the following apply.

3.1
gloves for hairdressers
gloves to protect the skin of the hairdresser during the handling of chemicals and the use of water during his/her work (coloring, discoloring, curling, washing…)

3.2
protective glove material
any material or combination of materials used in a protective glove for the purpose of isolating the hands or hands and arms from direct contact with a dangerous chemical

3.3
degradation
deleterious change in one or more properties of a *protective glove material* (3.2) due to contact with a chemical

Note 1 to entry: Indications of degradation may include flaking, swelling, disintegration, embrittlement, colour change, dimensional change, appearance, hardening, softening, etc.

3.4
permeation
process by which a chemical moves through a *protective glove material* (3.2) on a molecular level

Note 1 to entry: Permeation involves the following:

— absorption of molecules of the chemical into the contacted (outside) surface of a material,

— diffusion of the absorbed molecules in the material,

— desorption of the molecules from the opposite (inside) surface of the material.

3.5
test chemical
chemical substance, or mixture of chemical substances, potentially hazardous to the health that is used under laboratory test conditions to determine the breakthrough time

3.6
single use glove
glove that is to be used on one individual during a single procedure (one task on one client only) and for a maximum time of 60min

4 Performance requirement

4.1 General requirements

All tests required in this standard shall be performed on unused gloves unless otherwise specified.

Hairdresser's protective gloves shall meet all the applicable requirements of EN ISO 21420:2020.

Special additional requirements are defined in this document (e.g., minimum length of the gloves).

The gloves for hairdressers are single use gloves and they shall not include seams or be welded.

Dexterity test is not required for hairdresser’s protective gloves, as they are thin single use gloves, they will always satisfy this property.

The gloves for hairdressers shall be conform to the requirement defined in clause 4.2, 4.3, 4.4 and 4.5.

The gloves shall be powder-free. For powder-free gloves the total quantity of powder residues determined according to the test method in ISO 21171: 2006, clauses 7 and 9 shall not exceed 2 mg per glove. Any glove containing more than 2 mg powder is a powdered glove.

4.2 Glove's length

The glove length shall be measured according to EN ISO 21420:2020, 6.1.

The minimum length of the glove depends on the claimed protection area.

For type 240, hand protection only, minimum glove length is 240 mm.

For type 300, hand and forearm protection only, minimum glove length is 300 mm.

4.3 Mechanical strength

The glove shall have a sufficient robustness. Different glove materials require different force at break requirements to ensure an acceptable performance. Absolute force at break values do not directly correlate with the in-use performance. Selection of appropriate glove materials for the intended application shall be part of the risk management process.

When tested according to 5.2, the gloves for hairdressers shall have a force at break in accordance with the value given in table 1.

Table 1 — Force at break requirements

	For all gloves except gloves made from thermoplastic materials (e.g., nitrile, neoprene, natural rubber...)	For all gloves made from thermoplastic materials (e.g., polyvinylchloride, polyurethane...)
Median value of the force at break in Newton	greater or equal to 6.0	greater or equal to 3.6

4.4 Resistance to microorganisms

Protective gloves shall fulfil one of the 2 requirements (bacteria-fungi or bacteria fungi virus) given in EN ISO 374-5:2016, 5.4, Table 1.

4.5 Permeation

Table 2 defines the list of the chemicals applicable and their concentration for the assessment of hairdresser's gloves to permeation.

When tested according to clause 5.3, for each chemical, the 3 test specimens shall not show a breakthrough (1µg/cm^2 min) before 60 minutes.

If one measurement fails on the 3 tests, perform the test again with 3 new test specimens. If the 3 new results pass, the test is considered as pass, if at least one of the 3 tests fails then the gloves fail the test definitively.

If after the permeation test, the glove material presents significant degradation (swelling, hardening...) that can affect the use of the glove, the test is considered as failed.

Table 2 — List of test chemicals

RAW CHEMICAL	CAS NUMBER	Concentration in water for testing	Remarks
Paraphenylen diamine	106-50-3	4%	Hair dye (oxidative) Strong allergen, frequent cause of allergy in hairdressers
Ammonium persulfate	7727-54-0	10%	Bleach- oxidizer May cause allergic contact dermatitis

RAW CHEMICAL	CAS NUMBER	Concentration in water for testing	Remarks
Ammonium thioglycolate	5421-46-5	20%	Hair waving or straightening Known allergen in hairdressers to max 16.9% calculated as thioglycolic acid, which corresponds to 20% ATG
Ethanol	64-17-5	10%	Primary alcohol may affect glove resistance.

Safety precautions: Person using this standard shall be familiar with normal laboratory practice. This document does not purport to address all the safety problems, if any, associated with its use. It is the responsibility of the user to apply established Health and Safety practices and to ensure compliance with European or national regulatory conditions.

5 Test methods

5.1 Mechanical strength

5.1.1 Conditioning

Before testing, specimens shall be conditioned in the following conditioning atmosphere:

— temperature (23 ± 2) °C and relative humidity (50 ± 5) %;

— the period of conditioning is at least 24 h before testing.

The following conditioning could be used, and shall be reported in the test report:

— temperature (20 ± 2) °C and relative Humidity (65 ± 5) %;

— the period of conditioning is at least 24 h before testing.

5.1.2 Sampling

Obtain one dumb-bell test piece from each of 13 gloves using a press knife as specified in Figure 1 from the palm or the back of the hand of each glove in the test sample, avoiding textured areas if possible and taking the test pieces in the direction of the longitudinal axis of the glove.

If the glove has different sizes, at least one size shall be tested.

