

## **Kaitsekindad ioniseeriva kiirguse ja radioaktiivse saaste eest**

Protective gloves against ionizing radiation and  
radioactive contamination

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 421:1999 sisaldab Euroopa standardi EN 421:1994 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 421:1999 consists of the English text of the European standard EN 421:1994.</p> <p>This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This Standard specifies requirements and test methods for gloves to protect against ionizing radiation and radioactive contamination. The standard is applicable to gloves offering protection to the hand and various parts of the arm and shoulder. It also applies to gloves to be mounted in permanent containment enclosures.</p>	<p><b>Scope:</b></p> <p>This Standard specifies requirements and test methods for gloves to protect against ionizing radiation and radioactive contamination. The standard is applicable to gloves offering protection to the hand and various parts of the arm and shoulder. It also applies to gloves to be mounted in permanent containment enclosures.</p>
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**Võtmesõnad:**

UDC 614.896.2:687.17:62-777

Descriptors: Personal protective equipment, work clothing, protective clothing, gloves, radiation protection, ionizing radiation, contamination, irradiation, characteristics, testing.

**English version**

**Protective gloves against ionizing radiation  
and radioactive contamination**

Gants de protection contre les rayonne-  
ments ionisants et la contamination  
radioactive

Schutzhandschuhe gegen ionisierende  
Strahlen und radioaktive Kontamination

This European Standard was approved by CEN on 1994-04-01.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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## Foreword

This European Standard has been prepared by CEN/TC 162 'Protective clothing including hand and arm protection and lifejackets' the Secretariat of which is held by DIN.

It has been prepared under a mandate given to CEN by the Commission of the European Communities and the European Free Trade Association, and supports essential requirements of relevant EC Directive(s).

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by October 1994 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## 1 Scope

This standard specifies requirements and test methods for gloves to protect against ionizing radiation and radioactive contamination. The standard is applicable to gloves offering protection to the hand and various parts of the arm and shoulder. It also applies to gloves to be mounted in permanent containment enclosures.

## 2 Normative references

This European Standard incorporates, by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 374-1	Protective gloves against chemicals and micro organisms. Part 1: Terminology and performance requirements
EN 374-2	Protective gloves against chemicals and micro organisms. Part 2: Determination of resistance to penetration
EN 374-3	Protective gloves against chemicals and micro organisms. Part 3: Determination of resistance to permeation by chemicals
EN 388	Protective gloves against mechanical risks
EN 420	General requirements for gloves
ISO 1431-1:1989	Rubber, vulcanized or thermoplastic; resistance to ozone cracking; static strain test
ISO 4648:1991	Rubber, vulcanized or thermoplastic; determination of dimensions of test pieces and products for test purposes

## 3 Definitions

For the purposes of this standard, the following definitions apply:

**3.1 irradiation:** Exposure of a living being or matter to ionizing radiation by external sources (X-, Alpha-, Beta-, Gamma- or neutron radiations).

**3.2 radioactive contamination:** Presence of radioactive substances in or on a material or in a place where they are undesirable or could be harmful.

**3.3 water vapour permeability:** Mass of water vapour, in grammes, transmitted through a material per square metre within 24 hours, per millimetre thickness, under specified conditions of temperature and humidity ( $\text{g} \cdot \text{m}^{-2} \cdot \text{d}^{-1} \cdot \text{mm}^{-1}$ ).

## 4 Design principles

### 4.1 General principles

The general principles given in EN 421 apply, with the following specific additions.

### 4.2 Protective glove material

Any material or combination of materials used in a glove for the purpose of isolating the user from direct contact with the irradiation or radioactive contamination.

NOTE: For choice of material, see references contained in annex C.

### 4.3 Construction of glove

The glove may be constructed from a single or a number of material layers, the choice of material being defined by the end user requirements.

In the case of protection against external ionizing radiation, the glove may contain lead ( $\text{PbO}$ ,  $\text{Pb}_3\text{O}_4$ ) or other heavy