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KEMIKAALIKAITSEÜLIKONDADELE

Protective clothing against dangerous solid, liquid and  
gaseous chemicals, including liquid and solid aerosols -  
Part 1: Performance requirements for Type 1 (gas-tight)  
chemical protective suits

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 943-1:2015+A1:2019 sisaldab Euroopa standardi EN 943-1:2015+A1:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 943-1:2015+A1:2019 consists of the English text of the European standard EN 943-1:2015+A1:2019.
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English Version

Protective clothing against dangerous solid, liquid and gaseous chemicals, including liquid and solid aerosols -  
Part 1: Performance requirements for Type 1 (gas-tight) chemical protective suits

Vêtements de protection contre les produits chimiques dangereux solides, liquides et gazeux, y compris les aérosols liquides et les particules solides - Partie 1: Exigences de performance des combinaisons de protection chimique étanches aux gaz (type 1)

Schutzkleidung gegen gefährliche feste, flüssige und gasförmige Chemikalien, einschließlich Flüssigkeitsaerosole und feste Partikel - Teil 1: Leistungsanforderungen für Typ 1 (gasdichte) Chemikalienschutzkleidung

This European Standard was approved by CEN on 27 June 2015 and includes Amendment A1 approved by CEN on 24 October 2018.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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# Contents

Page

European foreword.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions .....	7
4 Performance requirements.....	9
4.1 General.....	9
4.2 Materials.....	9
4.3 Seams, joins, and assemblages .....	12
4.4 Strength of detachable joins.....	13
4.5 Permeation requirement for closure.....	14
4.6 Gloves .....	14
5 Requirements for the whole suit.....	14
5.1 General.....	14
5.2 Compatibility with other equipment .....	16
5.3 <b>[A1]</b> Simulation of extreme storage conditions <b>[A1]</b> .....	16
5.4 Leak tightness (static inflation test).....	16
5.5 Total inward leakage test.....	16
5.6 Visor .....	17
5.6.1 General.....	17
5.6.2 Distortion of vision.....	17
5.6.3 Distortion of vision after chemical exposure.....	17
5.6.4 Field of vision.....	18
5.6.5 Mechanical strength.....	18
5.7 Face piece for suits without integral visor.....	18
5.8 Pass-through.....	19
5.8.1 General.....	19
5.8.2 Strength of pass-through .....	19
5.8.3 Performance of pass-through providing breathing air .....	19
5.9 Airline supply system .....	19
5.9.1 General.....	19
5.9.2 Couplings.....	19
5.9.3 Connections.....	19
5.9.4 Connections strength.....	19
5.10 Exhaust assembly .....	20
5.11 Pressure in chemical protective suit.....	20
5.12 External ventilating hose .....	20
5.13 Air flow rate of breathing air and/or ventilating air supply .....	20
5.13.1 General.....	20
5.13.2 Continuous flow valve for Type 1c breathing air supply .....	20
5.13.3 Warning and measuring facilities .....	21
5.13.4 Compressed air supply tube.....	21
5.14 Carbon dioxide content of inhalation air.....	21
5.15 Noise associated with air supply to suit.....	21
5.16 Practical Performance.....	21
6 Test methods .....	22
6.1 Visual inspection .....	22
6.2 Practical performance test .....	22

6.2.1	General .....	22
6.2.2	Work simulation test .....	23
6.2.3	Information to be recorded .....	24
6.3	Suit pressure test .....	24
6.4	Pull test for joins and assemblages .....	24
6.5	Exhalation valves .....	25
6.5.1	Leak tightness test .....	25
6.5.2	Connection between exhalation valve (exhaust assembly) and chemical protective clothing material .....	25
6.6	Mechanical strength test for visor .....	26
6.7	Distortion of vision after chemical exposure .....	26
7	Marking .....	26
8	Information supplied by the manufacturer .....	27
Annex A (normative)	Total inward leakage test .....	30
A.1	Principle .....	30
A.2	Test subjects .....	30
A.3	Sodium chloride method .....	30
A.3.1	Aerosol generator .....	30
A.3.2	Test agent .....	30
A.3.3	Detection .....	31
A.3.4	Flame photometer .....	31
A.3.5	Sample pump .....	31
A.3.6	Sampling of chamber concentration .....	31
A.4	Sulphur hexafluoride method (SF <sub>6</sub> ) .....	32
A.4.1	Test agent .....	32
A.4.2	Detection .....	33
A.5	Sampling probe .....	34
A.6	Test chamber .....	34
A.7	Treadmill .....	34
A.8	Test procedure .....	34
A.8.1	Test subject .....	34
A.8.2	Test protocol .....	34
A.8.3	Assessment of results .....	34
Annex B (normative)	Material tests .....	36
B.1	General .....	36
B.2	Material tests - Resistance to ignition .....	36
Annex C (normative)	Ⓐ Distortion of vision Ⓐ .....	37
Annex D (informative)	Adapted test cell for testing closures (zipper) .....	38
Annex E (informative)	Significant technical changes between this document and the previous edition of this European Standard .....	39

<b>Annex ZA (informative)  Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment aimed to be covered  .....</b>	<b>41</b>
<b>Bibliography .....</b>	<b>43</b>

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## European foreword

This document (EN 943-1:2015+A1:2019) 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.

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 September 2019, and conflicting national standards shall be withdrawn at the latest by September 2019.

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

This document includes Amendment 1 approved by CEN on 2018-10-24.

This document supersedes A1 EN 943-1:2015 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

For details of the significant changes made since EN 943-1:2002 please refer to Annex E.

EN 943 consists of the following parts:

EN 943-1, *Protective clothing against solid, liquid and gaseous chemicals, including liquid and solid aerosols — Part 1: Performance requirements for Type 1 (gas-tight) chemical protective suits*

EN 943-2, *Protective clothing against solid, liquid and gaseous chemicals, including aerosols — Part 2: Performance requirements for Type 1 gas-tight chemical protective suits for emergency teams (ET)*

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard specifies the minimum requirements, test methods, marking and information supplied by the manufacturer for ventilated and non-ventilated gas-tight chemical protective suits.

It specifies full body personal protective ensembles to be worn for protection against solid, liquid and gaseous chemicals, including liquid and solid aerosols.

**A1** This standard does not establish minimum criteria for protection for non-chemical hazards, e.g. radiological, fire, heat, explosive hazards, infective agents. **A1** This type of equipment is not intended for total immersion in liquids.

**A1** The seams, joins and assemblages attaching the accessories are included within the scope of this standard. The basic performance criteria for the components such as gloves, boots or respiratory protective equipment are given in other Standards, supplementary requirements are provided in this standard. **A1**

Particulate protection is limited to physical penetration of the particulates only.

**A1** Chemicals such as violently air sensitive reagents, unstable explosives and cryogenic liquids have not been considered since protection against these additional hazards is beyond the scope of this standard. **A1**

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 132, *Respiratory protective devices — Definitions of terms and pictograms*

EN 136:1998, *Respiratory protective devices — Full face masks — Requirements, testing, marking*

EN 388, *Protective gloves against mechanical risks*

**A1** EN 1073-1:2016+A1:2018, *Protective clothing against solid airborne particles including radioactive contamination — Part 1: Requirements and test methods for compressed air line ventilated protective clothing, protecting the body and the respiratory tract* **A1**

EN 1073-2, *Protective clothing against radioactive contamination — Part 2: Requirements and test methods for non-ventilated protective clothing against particulate radioactive contamination*

EN 12021, *Respiratory equipment — Compressed gases for breathing apparatus*

EN 13274-4:2001, *Respiratory protective devices — Methods of test — Part 4: Flame tests*

EN 14593-1:2005, *Respiratory protective devices — Compressed air line breathing apparatus with demand valve — Part 1: Apparatus with a full face mask — Requirements, testing, marking*

EN 14594:2005, *Respiratory protective devices — Continuous flow compressed air line breathing apparatus — Requirements, testing, marking*

**A1** EN 14325:2018 **A1**, *Protective clothing against chemicals — Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages*

CEN ISO/TR 11610, *Protective clothing — Vocabulary (ISO/TR 11610)*



EN ISO 13688:2013, *Protective clothing — General requirements (ISO 13688:2013)*

**A1** deleted text **A1**

EN ISO 17491-3, *Protective clothing — Test methods for clothing providing protection against chemicals — Part 3: Determination of resistance to penetration by a jet of liquid (jet test) (ISO 17491-3:2008)*

EN ISO 20345:2011, *Personal protective equipment — Safety footwear (ISO 20345:2011)*

ISO 17491-1:2012, *Protective clothing — Test methods for clothing providing protection against chemicals — Part 1: Determination of resistance to outward leakage of gases (internal pressure test)*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN ISO/TR 11610 and EN 132 together with the following apply.

#### 3.1

##### **assemblage**

permanent fastening between two or more different garments, or between the protective clothing and accessories obtained for example by sewing, welding, vulcanizing, gluing

[SOURCE: EN 1073-1:1998]

#### 3.2

##### **join**

non-permanent fastening between two different garments, or between protective clothing and accessories

#### 3.3

##### **bootees**

sock like gastight extension of the suit leg that encapsulates the entire foot

Note 1 to entry: Intended to be worn inside separate (i.e. not attached) protective boots or protective shoes.

#### 3.4

##### **cleaning**

removal of contamination or soiling

Note 1 to entry: There are several separate types of cleaning that may be applicable to chemical protective clothing. The purpose of each type of cleaning is distinct, though the same operation may, under some circumstances, fulfil the requirements of more than one type of cleaning.

##### 3.4.1

##### **hygienic cleaning**

operation to remove soiling that originates from the body of the wearer of the suit

Note 1 to entry: The purpose of this type of cleaning is to render the inside of the suit sufficiently clean that another wearer can then safely and comfortably wear it. Hygienic cleaning can consist of rinsing or wiping the inside of the suit with a disinfectant solution.

Note 2 to entry: An example of soiling intended to be removed by hygienic cleaning is perspiration.