



SLOVENSKI STANDARD
oSIST prEN ISO 18889:2017
01-september-2017

Varovalne rokavice za uporabnike pesticidov - Zahtevane lastnosti (ISO/DIS 18889:2017)

Protective gloves for pesticide operators - Performance requirements (ISO/DIS 18889:2017)

Schutzhandschuhe für Anwender von Pflanzenschutzmitteln — Leistungsanforderungen (ISO/DIS 18889:2017)

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Gant de protection pour les opérateurs manipulateurs des pesticides -exigences de performance (ISO/DIS 18889:2017)

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13.340.40 Varovanje dlani in rok Hand and arm protection

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en

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Protective gloves for pesticide operators — Performance requirements

Gant de protection pour les opérateurs manipulant des pesticides — exigences de performance

ICS: 13.340.40

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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ISO/DIS 18889:2017(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

ISO 18889 was prepared by Technical Committee ISO/TC 94, Personal safety - Protective clothing and equipment, Subcommittee SC 13, Protective clothing and by Technical Committee CEN/TC 162, Protective clothing including hand and arm protection and lifejackets in collaboration.

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Introduction

This document addresses the performance requirements for gloves worn by operators when mixing and loading, applying pesticide, as well as handling pesticide for other tasks. Pesticide products are known as plant protection products (PPP) in certain countries/regions of the world.

Since active ingredient of pesticide is typically a chemical with low vapour pressure and/or low solubility in collection media, EN 16523-1:2015 cannot be used to measure permeation of active ingredient in most pesticide products. Therefore, ISO/DIS 19918 is used to measure cumulative permeation of active ingredient in pesticide products. Requirements other than the ISO/DIS 19918 test are similar to those for other chemical resistant gloves.

This document defines performance requirements for two levels of gloves with specified resistance to permeation by pesticide products. A brief description of the levels is given below:

Level G1 glove is suitable when the potential risk is relatively low. Level G1 gloves are not suitable for use with concentrated pesticide formulations.

Level G2 gloves are suitable when the potential risk is higher. Level G2 gloves are suitable for use with diluted as well as concentrated pesticides.

Personal Protective Equipment (PPE) is often used for risk mitigation. See [Annex A](#) for information on risk assessment and use of PPE for risk mitigation. Since protective gloves can be contaminated in various ways (e.g., fine spray, contact with wet surface, contact with pesticide product sprayed under pressure, contact between the protective gloves and a contaminated surface), in this standard laboratory tests methods are used to rate materials rather than simulate field conditions.

Registration of pesticide products, such as insecticides, herbicides, and fungicides, involves the assessment of operator exposure and risk, which determines the need for personal protective equipment. Protection should correspond to the identified risks in order to avoid loss of comfort due to overprotection. Actual field trials are used to determine the operator risk while spraying pesticides under different scenarios. Laboratory data often are derived from accelerated tests to differentiate among different levels of performance; therefore, laboratory data cannot be used for direct comparison with field data for determining acceptable mitigation factors.

This document is intended for glove manufacturers, pesticide product manufacturers, trainers, regulators, and other individuals or organizations that make decisions regarding PPE for protection against pesticide products.

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Protective gloves for pesticide operators — Performance requirements

1 Scope

This document establishes minimum performance, classification, and labelling requirements for gloves worn by operators handling pesticide products. Gloves covered by this International Standard include gloves made with elastomeric and other air impermeable materials. This standard does not address protection against fumigants.

This document should be used in conjunction with EN 420.

2 Normative references

The following referenced documents are indispensable for the application 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 374-1:2016, *Protective gloves against dangerous chemicals and micro-organisms — Part 1: Terminology and performance requirements for chemical risks*

ISO 3696:1995, *Water for analytical laboratory use. Specification and test methods*

ISO/DIS 19918:2016, *Protective clothing — Protection against liquid chemicals — Measurement of cumulative permeation of chemicals with low vapour pressure through protective clothing, footwear and glove materials* <https://standards.iteh.ai/catalog/standards/sist/67eda37d-3514-404e-9bc2-1246636575b1/osist-pren-iso-18889-2017>

EN 374-2:2014, *Protective gloves against chemicals and micro-organisms — Part 2: Determination of resistance to penetration*

EN 388:2016, *Protective gloves for pesticide operators — Performance requirements against mechanical risks*

EN 420:2003, *Protective gloves — General requirements and test methods*

Note EN 420 shall be replaced by ISO 21420 once published

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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>

3.1 active ingredient

component of a pesticide formulation, which is an active substance present in sufficient quantity that relates to an intended phytosanitarian purpose

ISO/DIS 18889:2017(E)**3.2****decontamination**

removal of a contaminant or contaminants from the surface or matrix, or both, of chemical protective materials to the extent necessary for its next intended use

Note 1 to entry: For this standard materials are limited to those used for chemical resistant gloves.

3.3**degradation**

a deleterious change in one or more mechanical properties of a material due to contact with a chemical or heat

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

3.4**fumigant**

pesticide in the form of gas

3.5**penetration**

the process by which a chemical moves through porous materials, seams, pinholes, or other imperfections in a material on a non-molecular level

3.6**permeation**

the process by which a chemical moves through a material on a molecular level, involving

- sorption of the molecules of the chemical into the contacted (outside) surface of a material;
- diffusion of the absorbed molecules in the material; and
- desorption of the molecules from the opposite (inner) surface of the material.

3.7**pesticide**

substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest or weeds

Note 1 to entry: Pesticides (plant protection products) approved for use in one country may not be approved in another country.

3.8**pesticide operator**

a person handling pesticides in agricultural settings, green spaces, roadsides, etc.

Note 1 to entry: Handling includes tasks such as mixing, loading, transferring, or applying pesticides; cleaning, adjusting, or repairing the parts of mixing, loading, or application equipment that may contain pesticide residues; assisting with the application of pesticides; and disposing of pesticides or pesticide containers.

Note 2 to entry: Farm, forest, nursery, and greenhouse are examples of agricultural settings.

3.9**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

3.10**test chemical**

liquid that is used to challenge the specimen of glove material