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Protective clothing — Performance requirements for protective clothing worn by operators applying liquid pesticides

Vêtements de protection — Exigences de performance pour les vêtements de protection portés par les opérateurs appliquant des pesticides liquides



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 27065 was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 13, *Protective clothing*.

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Introduction

This International Standard addresses the performance requirements for protective clothing worn by operators applying liquid pesticide products diluted with water. These products are also known as crop protection and plant protection products in certain countries. Registration of pesticide products, such as insecticides, herbicides and fungicides, involves the assessment of operator exposure and risk, factors which determine the need for personal protective equipment. Protection needs to correspond to the identified risks in order to avoid loss of comfort due to over-protection. Actual field trials are used to determine the operator risk while spraying pesticides under different scenarios. For the performance specification, data from field studies are used to categorize the garment performance and determine the minimum performance limits for the different levels. Laboratory tests, including accelerated tests, are used to determine whether the garment met the minimum requirements for that level. The minimum penetration requirements, evaluated by laboratory tests, are based on extensive studies comparing field study data with laboratory data. Laboratory data are often derived from accelerated tests to differentiate between different levels of performance; therefore, laboratory data cannot be used for direct comparison with field data or acceptable mitigation factors.

This International Standard defines performance requirements for three levels of protective clothing with specified resistance to penetration by pesticide products. It is up to the manufacturer of a specific pesticide product to indicate on the label the recommended level of protection (no protective clothing, Levels 1a, 1b, 2, 3) for the respective exposure conditions. A brief description of the different levels is given below.

Level 1 garments are suitable when the potential risk of contamination is relatively low. The performance requirements for Level 1a garments have been developed in view of low spray drift landing on the operator, e.g. from tractor boom sprayers. The performance requirements for Level 1b garments have been developed based on the performance of cotton and polyester/cotton garments, which are widely used for operator exposure studies.

Level 2 garments are suitable when the potential risk of contamination is higher but not so high as to require the use of liquid-tight materials.

Level 3 garments are suitable for use when the potential risk of contamination requires use of garments made with liquid-tight materials. This level is suitable for high-exposure scenarios where it has been determined that garments that prevent liquids from penetrating/permeating provide adequate protection.

This International Standard is intended for fabric and garment manufacturers, for manufacturers of pesticide products, trainers, regulators and other individuals or organizations that make decisions regarding protective clothing for protection against pesticide products.