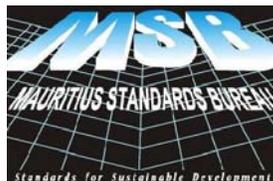

Protective clothing — Performance requirements for protective clothing worn by operators applying liquid pesticides

ICS 13.340.10



**Mauritius Standards Bureau
Moka**

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National Foreword

This Mauritian Standard is identical with the International Standard **ISO 27065:2011**, published by the International Organization for Standardization (ISO). It was adopted by the Mauritius Standards Bureau on the recommendation of the **Textile, Paper and Footwear Standards Committee** and approval of the **Standards Council** on **26 March 2014**. It was notified in the Government Gazette on **03 May 2014***.

For the purposes of this standard the following change should be made:

The words “International Standard” should be replaced by “Mauritian Standard”.

The following Mauritian Standard is identical to the International Standard, which is referenced in the adopted standard:

International Standard

ISO 13688, *Protective clothing — General requirements*

Corresponding Mauritian Standard

MS ISO 13688, *Protective clothing — General requirements*

General notice no 1157 of 2014



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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*.

PREVIEW

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.

PREVIEW

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

1 Scope

This International Standard establishes minimum performance, classification, and labelling requirements for protective clothing worn by operators applying liquid pesticide products diluted in water. Protective clothing covered by this International Standard includes, but is not limited to, shirts, jackets, trousers, coveralls, and spray-tight or liquid-tight garments. This International Standard addresses protection provided by protective accessories, with the exception of those used for the protection of the head, hands, and feet. This International Standard does not address protection against biocides, fumigants or highly volatile liquids.

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 6330:2000, *Textiles — Domestic washing and drying procedures for textile testing*

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

ISO 9073-4, *Textiles — Test methods for nonwovens — Part 4: Determination of tear resistance*

ISO 13688, *Protective clothing — General requirements*

ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method*

ISO 13935-2, *Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 2: Determination of maximum force to seam rupture using the grab method*

ISO 13994, *Clothing for protection against liquid chemicals — Determination of the resistance of protective clothing materials to penetration by liquids under pressure*

ISO 17491-4, *Protective clothing — Test methods for clothing providing protection against chemicals — Part 4: Determination of resistance to penetration by a spray of liquid (spray test)*

ISO 22608, *Protective clothing — Protection against liquid chemicals — Measurement of repellency, retention, and penetration of liquid pesticide formulations through protective clothing materials*

EN 14786, *Protective clothing — Determination of resistance to penetration by sprayed liquid chemicals, emulsions and dispersions — Atomizer test*