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**Equipment for crop protection - Knapsack sprayers -
Part 1: Safety and environmental requirements (ISO
19932-1:2013)**

EESTI STANDARDI EESSÕNA

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English Version

Equipment for crop protection - Knapsack sprayers - Part 1:
Safety and environmental requirements (ISO 19932-1:2013)

Matériel de protection des cultures - Pulvérisateurs à dos -
Partie 1: Exigences environnementales et de sécurité (ISO
19932-1:2013)

Pflanzenschutzgeräte - Tragbare Geräte - Teil 1:
Sicherheitstechnische und umweltrelevante Anforderungen
(ISO 19932-1:2013)

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN ISO 19932-1:2013) has been prepared by Technical Committee ISO/TC 23 "Tractors and machinery for agriculture and forestry" in collaboration with Technical Committee CEN/TC 144 "Tractors and machinery for agriculture and forestry" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by December 2013, and conflicting national standards shall be withdrawn at the latest by December 2013.

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

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.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 19932-1:2013 has been approved by CEN as EN ISO 19932-1:2013 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC on machinery and Directive 2009/127/EC amending Directive 2006/42/EC with regard to machinery for pesticide application

This European Standard has been prepared [under a mandate given to CEN] by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC on machinery and Directive 2009/127/EC amending Directive 2006/42/EC with regard to machinery for pesticide application.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of Directives 2006/42/EC and 2009/127/EC and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

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Introduction

The application of plant protection products with knapsack sprayers should take into consideration biological, economic, environmental and operator issues.

The aim of this part of ISO 19932 is to specify safety and environmental requirements for equipment.

Implementation of this part of ISO 19932 should achieve an appropriate level of operator safety and avoid unnecessary dispersal of plant protection products into the environment.

- This document is a type-C standard as stated in ISO 12100.
- The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

Equipment for crop protection — Knapsack sprayers —

Part 1: Safety and environmental requirements

1 Scope

This part of ISO 19932 specifies the safety and environmental requirements and their means of verification for the design and construction of knapsack sprayers carried on the back or shoulder of the operator for use with plant protection products. In addition, it specifies the type of information on safe working practices (including residual risks) to be provided by the manufacturer.

It is applicable to lever-operated knapsack sprayers, knapsack compression sprayers and knapsack sprayers driven by an engine or electric motor using hydraulic pressure atomisation of the spray liquid, with a nominal volume of more than 3 l, for their intended use primarily in agriculture and horticulture.

It does not apply to knapsack mistblowers according to ISO 28139.

This part of ISO 19932 deals with all significant hazards, hazardous situations and hazardous events relevant to knapsack sprayers when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see [Annex A](#)), excepting the hazards arising from:

- static electricity;
- explosion or fire from chemicals for spraying; and
- insufficient structural integrity.

This document is not applicable to knapsack sprayers which are manufactured before the date of publication of this document.

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.

ISO 1401:1999, *Rubber hoses for agricultural spraying*

ISO 3767-5:1992, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 5: Symbols for manual portable forestry machinery*

ISO 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 5681:1992, *Equipment for crop protection — Vocabulary*

ISO 5682-1:1996, *Equipment for crop protection — Spraying equipment — Part 1: Test methods for sprayer nozzles*

ISO 6385:2004, *Ergonomic principles in the design of work systems*

ISO 8169:1984, *Equipment for crop protection — Sprayers — Connecting dimensions for nozzles and manometers*

ISO 8893:1997, *Forestry machinery — Portable brush-cutters and grass-trimmers — Engine performance and fuel consumption*