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## Equipment for crop protection – Agricultural sprayers – Determination of the volume of total residual

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Telefon: 08 - 610 30 00. Telefax: 08 - 30 77 57

Upplysningar om **sakinnehållet** i standarden lämnas av MMS.  
Telefon: 08 - 459 56 00. Telefax: 08 - 667 85 42  
E-post: [info@sms-standard.se](mailto:info@sms-standard.se)  
Prisgrupp K

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## ISO 13440:1996(E)

### Foreword

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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.

International Standard ISO 13440 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, subcommittee SC 6, *Equipment for crop protection*.

Annex A forms an integral part of this International Standard.

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International Organization for Standardization  
Case postale 56 • CH-1211 Genève 20 • Switzerland  
Internet: [central@isocs.iso.ch](mailto:central@isocs.iso.ch)  
X.400: c=ch; a=400net; p=iso; o=isocs; s=central

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# Equipment for crop protection – Agricultural sprayers – Determination of the volume of total residual

## 1 Scope

This International Standard specifies the test method for the determination of the volume of total residual for mounted, trailed and self-propelled agricultural sprayers used for crop protection and fertilization.

## 2 Definitions

For the purposes of this International Standard, the following definitions apply :

### 2.1 volume of total residual

Volume of the spray mixture remaining in the sprayer which cannot be delivered with the intended application rate and/or pressure, equal to the sum of the volume of residual tank and the dead volume.

### 2.2 volume of residual in the tank; dilutable volume

Part of the total residual that remains in the tank or that can flow back to the tank during normal sprayer operation.

### 2.3 dead volume; non dilutable volume

Part of the total residual that cannot flow back to the tank during normal operation of the sprayer.

### 2.4 horizontal position

Normal operating position of the sprayer on level ground.

## 3 General

**3.1** The test shall be carried out with the sprayer secured in a stationary and horizontal position. The pump shall be driven at nominal speed. The spray boom including liquid lines and nozzles shall be in working position. The boom shall be equipped with one size of nozzles recommended by the manufacturer.

**3.2** The pressure shall be set such that the average liquid output of the nozzles is :

- a) 1 l/min for pneumatic sprayers;
- b) 2 l/min for field crop sprayers and vineyard sprayers;
- c) 4 l/min for orchard sprayers;
- d) 6 l/min for hop plantation sprayers.

NOTE — The output values given are for the normal case but other values can be used for particular cases.

The liquid output of each nozzle shall be adjusted with an accuracy of  $\pm 0,1$  l/min.

The spray tank shall be half full or contain, at most, 500 l. The liquid used shall be water.