
**Equipment for crop protection —
Induction hoppers —**

**Part 1:
Test methods**

*Matériel de protection des cultures — Incorporateurs —
Partie 1: Méthodes d'essai*



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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.

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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 21278-1 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 6, *Equipment for crop protection*.

ISO 21278 consists of the following parts, under the general title *Equipment for crop protection — Induction hoppers*:

- *Part 1: Test methods*
- *Part 2: General requirements and performance limits*

Introduction

The sprayer main tank may be connected to an introduction hopper in order to prevent chemical cross-contamination, contamination of the operator and of the environment.

Currently two main different types of hopper are available on the market:

- introduction hoppers, which are able to transfer the chemical into the main tank of the sprayer;
- induction hoppers, which are able to transfer the chemical product into the sprayer and partially mix the chemical product, and are able to carry out self-cleaning.

ISO 21278 is applicable to induction hoppers for fertilizers and plant protection products for agricultural crop protection machines and is aimed at verifying their functionality.

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Equipment for crop protection — Induction hoppers —

Part 1: Test methods

1 Scope

This part of ISO 21278 specifies the test methods for the verification of the performance limits of induction hoppers, as specified in ISO 21278-2.

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 5681, *Equipment for crop protection — Vocabulary*

ISO 5682-2:1997, *Equipment for crop protection — Spraying equipment — Part 2: Test methods for hydraulic sprayers*

ISO 21278-2, *Equipment for crop protection — Induction hoppers — Part 2: General requirements and performance limits*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5681 and the following apply.

3.1

induction hopper

device having a bowl able to transfer and partially mix any kind of liquid or solid plant protection products or fertilizers inside the main tank of the sprayer, and able to self-clean

NOTE The device may be attached to the machine or free-standing, and able to be connected to the sprayer tank only for filling operations.

3.2

cleaning device for crop protection product cans

device for cleaning the inside of empty crop protection product cans