

ASABE/ISO 21191:2021 MAR2023

Equipment for crop protection — Closed transfer systems (CTS) — Performance specification



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Approved March 2023 as an American National Standard

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This standard was reviewed and approved for adoption by the ASABE Machinery Systems subcommittee for Application systems, Liquid Application, and the US TAG TC 23/SC 6. Adopted by ASABE and approved as an American National Standard March 2023.

Keywords: application equipment, closed transfer system, CTS, single transfer operation

0 Foreword

0.1 ASABE/ISO 21191:2021 MAR2023 is an adoption without modification of the identically titled ISO standard ISO 21191:2021 Equipment for crop protection — Closed transfer systems (CTS) — Performance specification.

0.2 ASABE/ISO 21191:2021 MAR2023 specifies operator and environment-related safety requirements and the means of their verification for the design and construction of closed transfer systems (CTS) for liquid formulations of plant protection products (PPP) in 1 l to 20 l containers.

In addition, it specifies the type of information on safe working practices including information about residual risks to be provided by the CTS manufacturer and specifies the maximum potential contamination during any single transfer operation.

0.3 Six normative references are listed in ISO 21191:2021. These references have been reviewed and accepted as part of the adoption of the ISO document in ASABE/ISO 21191:2021 MAR2023.

0.3.1 Please note that Normative Reference ISO 3767-1, Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols, has been identically adopted by ASABE. ASABE adoption number is ASABE/ISO 3767-1:2016 APR2017 (R2022).

0.3.2 Please note that Normative Reference ISO 3767-2, Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 2: Symbols for agricultural tractors and machinery, has been identically adopted by ASABE. ASABE adoption number is ASABE/ISO 3767-2:2016 APR2017 (R2022).

0.4 This standard has been approved as an American National standard by ANSI (American National Standard Institute). The original content of ISO 21191:2021 was not based on ASABE content or developed material. Royalty payments to ANSI are due upon all sales.

Text of ISO 21191:2021, Equipment for crop protection — Closed transfer systems (CTS) — Performance specification, follows.

1 Scope

This document specifies operator and environment-related safety requirements and the means of their verification for the design and construction of closed transfer systems (CTS) for liquid formulations of plant protection products (PPP) in 1 l to 20 l containers.

In addition, it specifies the type of information on safe working practices including information about residual risks to be provided by the CTS manufacturer and specifies the maximum potential contamination during any single transfer operation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3600, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Operator's manuals — Content and format*

ISO 3767-1, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 3767-2, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 2: Symbols for agricultural tractors and machinery*

ISO 5681, *Equipment for crop protection — Vocabulary*

ISO 21278-1:2008, *Equipment for crop protection — Induction hoppers — Part 1: Test methods*

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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

application equipment

device or assembly of components to mix and apply plant protection products and other compatible chemicals to the target

[SOURCE: ISO 5681:2020, 3.1.16]

3.2

closed transfer system

CTS

device or assembly of components, including the container to *application equipment* (3.1) interface, intended to totally and partially transfer plant protection products or other compatible liquids from their original containers into application or mixing equipment by direct coupling or other engineering means of enclosure that reduces the exposure of the operator and environment

[SOURCE: ISO 5681:2020, 3.2.9.6]