
**Pesticides — Profenofos
Part 3:
Ultra low volume liquids (ULV) —
Specification**

ICS: 65.100.10

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Foreword

This Ethiopian Standard has been prepared under the direction of the Technical Committee for Pesticides (TC 19) and published by the Ethiopian Standards Agency (ESA).

The standard is Cancels and replaces of the Ethiopian Standard ES 711-3:2002 "*Pesticides - Profenofos Part 3: Ultra low volume liquids (ULV) - Specification*", with some editorial changes without altering the technical contents in the former text.

In preparing this Ethiopian Standard reference has been made to the following:

- AGPCP/359:1998,FAO Specification for plant protection products, profenofos ultra low volume liquids specification 461/UL/S/F (1997), published by the Food and Agriculture Organization of the United Nations (FAO), Rome.

Acknowledgement is made for the use of information from the above publication.

Pesticides — Profenofos

Part 3: Ultra low volume liquids (ULV) — Specification

1 Scope

This Ethiopian Standard specifies requirements for ultra low volume liquids of profenofos (for plant protection purpose).

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.

ES 693, *Pesticides – Terminology*.

ES 694, *Pesticides – Method of sampling*.

ES 695, *Pesticides – Packaging*.

ES 696, *Pesticides – Guideline on good labelling practice*.

ES 697, *Pesticides – Guideline for retail distribution, storage and handling*.

ES 700, *Pesticides – Guideline for the disposal of bulk quantities of obsolete pesticides*.

ES 711-1, *Pesticides – Profenofos – Part 1: Technical material (TC) – Specification*.

ES 748, *Petroleum products – Determination of viscosity*.

ES 752, *Pesticides – Determination of stability of liquid formulations at 0°C*.

ES 753, *Pesticides – Determination of accelerated storage stability*.

ES 757, *Pesticides – Determination of p^H values*.

ES 760, *Petroleum products and other liquids – Determination of flash point*.

ES 765, *Pesticides – Determination of profenofos content*.

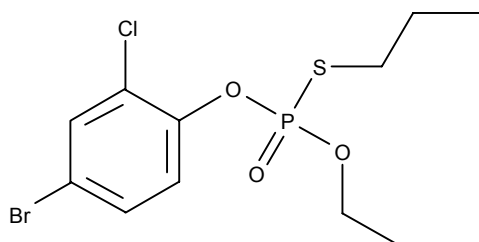
3 Definition

For the purpose of this Ethiopian Standard, terms defined in ES 693 shall apply.

4 General information

COMMON NAME: profenofos (ISO)

STRUCTURAL FORMULA:



EMPIRICAL FORMULA: $C_{11}H_{15}BrClO_3PS$

RMM:373.6

CAS REGISTRY NUMBER:41198-08-7

CIPAC CODE NUMBER:461

CHEMICAL NAMES:

O-4-bromo-2-chlorophenyl O-ethyl S-propyl phosphorothioate (IUPAC).

O-(4-bromo-2-chlorophenyl) O-ethyl S-n-propyl phosphorothioate (CA).

CHEMICAL GROUP: Organophosphate

USE CATEGORY: Insecticide

WHO CLASS¹⁾

5 Requirements

5.1 Description

The material shall consist of technical profenofos, complying with the requirements of ES 711-1 together with any other necessary formulants. It shall be in the form of a stable liquid, free from visible suspended matter and sediment. The solution is ready for use through ULV equipment.

5.2 Active ingredient

5.2.1 Identity tests

An identity test is required if the active ingredient is doubtful (example IR-spectrum) and shall be determined in accordance with ES 765.

¹⁾ Based on the technical material

5.2.2 Profenofos

The profenofos content shall be declared in g/kg or g/l at $20 \pm 0.5^\circ\text{C}$ and, when determined in accordance with ES 765, the content obtained shall not differ from that declared by more than the following amounts:

<u>Declared content</u>	<u>Permitted tolerance</u>
Above 100 up to 250 g/kg or g/l	$\pm 6\%$ of the declared content
Above 250 up to 500 g/kg or g/l	$\pm 5\%$ of the declared content

NOTE 1-If the buyer requires both g/kg and g/l at 20°C , then in case of dispute the analytical result shall be calculated as g/kg.

5.3 Physical properties

5.3.1 pH range

When determined in accordance with clause 6.2 of ES 757, the pH range shall be 3.0 to 7.0.

5.3.2 Flash point

When determined in accordance with ES 760 the flash point of the product shall not be lower than the minimum declared flash point(a closed cup method shall be also used).

NOTE 2-Attention is drawn to the appropriate national and international regulations on handling and transport of flammable materials.

5.3.3 Kinematic viscosity range

It shall be determined in accordance with ES 748 and the viscosity range shall be specified and the viscosity measurement shall be carried out with a U-tube-viscometer.

NOTE 3-Viscosity in itself is not a quality criteria of the product. However, if the formulation is applied through ground equipment, in which the flow rate depends on viscosity, a viscosity range shall be specified, e.g. 5 to 10 mm^2/s or 10 to 16 mm^2/s at $30 \pm 2^\circ\text{C}$. ($1 \text{ mm}^2/\text{s} = 1 \text{ cSt}$).

5.4 Storage stability

5.4.1 Stability at 0°C

After storage at $(0 \pm 1)^\circ\text{C}$ for 7 days, when determined in accordance with clause 6.1 of ES 752, no solid or liquid shall separate.

5.4.2 Stability at 54°C

After storage at $(54 \pm 2)^\circ\text{C}$ for 14 days, when determined in accordance with clause 6.1.3 of ES 753, the determined average active ingredient content must not be lower than 96% relative to the determined average content found under clause 5.2.2 and the product shall continue to comply with clause 5.3.1.

NOTE 4- Samples of the product taken before and after the storage stability test should be analyzed together after the test to reduce the analytical error.

6 Handling

Pesticides shall be handled in accordance with ES 697.

7 Sampling

Samples shall be taken in accordance with ES 694.

8 Packaging

Pesticides shall be packed in accordance with ES 695.

9 Labeling

Pesticides labeling shall be in accordance with ES 696.

10 Disposal

Disposal of bulk quantities of obsolete pesticides shall be in accordance with ES 700.

11 Marking

Packages manufactured with the requirements of this Ethiopian Standard shall bear the Quality Mark upon approval by the responsible authority.

Organization and Objectives

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ESA's objectives are:-

- ❖ Develop Ethiopian standards and establish a system that enable to check whether goods and services are in compliance with the required standards,
- ❖ Facilitate the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.

Ethiopian Standards

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More Information?

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