ETHIOPIAN STANDARD

ES 708-4:2021

Second edition
xx-xx-2021

Pesticides — Diazinon
Part 4:
Solutions — Specification

ICS: 65.100.10
Published by Ethiopian Standards Agency

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 Canceles and replaces of the Ethiopian Standard ES 708-4:2002 - *Pesticides - Diazinon Part 4: Solutions - 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 :

- AGP: CP 223:1988, FAO specification for plant protection products - Diazinon solutions FAO specification 15/OL/S (1988)

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

Pesticides— Diazinon
Part 4:
Solutions—Specification

1 Scope

This Ethiopian Standard specifies requirements for diazinon solutions (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 - Methods 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 - Guidelines for the disposal of bulk quantities of obsolete pesticides.*

ES 708-1*, Pesticides - Diazinon-part 1: Technical material (TC) - Specification.*

ES 720, *Pesticides - Determination of diazinon content (Reference method)*

ES 727, *Pesticides - Determination of diazinon content indiazinon technical.*

ES 736, *Pesticides - Determination of miscibility of pesticides with hydrocarbon oil.*

ES 749, *Pesticides - Determination of water content.*

ES 750, *Pesticides - Determination of free acidity or alkalinity.*

ES 752, *Pesticides - Determination of stability of liquid formulation at* $0^{O}C$

ES 753, *Pesticides - Determination of storage stability.*

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

WD[1)] *Pesticides - Determination of O,S-TEPP and S,S - TEPP content in diazinon.*

[1)] To be prepared

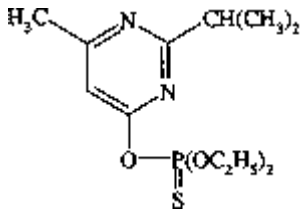
3 Definitions

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

4 General information

COMMON NAME: Diazinon (ISO)

STRACTURAL FORMULA:



EMPIRICAL FORMULA: C12H2lN203PS

RMM: 304.3

CAS REGISTRY NUMBER: [333-41-5]

CIPAC CODE NUMBER: 15

CHEMICAL NAMES:

0,0-diethyl-0-(2-isopropyl-6-methylpyrimidin-4-yl) phosphorothioate (IUPAC)

0,0-diethyl-0-[6-methyl-2-(1-methylethyl)-4-pyrimidinyl]phosphorothioate (CA)

CHEMICAL CATEGORY: Organophosphate

USE CATEGORY: Insecticide

WHO CLASS[2)]

5 Requirements

5.1 Description

The material shall consist of a solution technical diazinon complying with the requirements of ES 708-1 together with any necessary formulants. It shall be free from visible suspended matter and sediment.

5.2 Active ingredients

5.2.1 Identity tests

Where the identity of the active ingredient is in doubt, it shall be determined in accordance with ES 720 and the isolated active ingredient shall comply with at least one additional test.

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2) Based on the technical material

5.2.2 Diazinon

The diazinon content shall be declared in g/l at 20°C or g/kg(Note 1) and when determined in accordance with ES 720 or ES 727, the content obtained shall not differ from that declared by more than the following amounts:

Declared content	Permitted tolerance
Up to 200 g/l or g/kg	± 10% of the declared content
above 200 g/l or g/kg	± 20 g

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

5.3 Impurities

5.3.1 O, S-TEPP(Note 2)

When determined in accordance with WD[1)] the maximum content of O,S-TEPP shall be 0.22 X *x* mg/kg, where *x* is the diazinon content found under clause5.2.2 (Note 3).

NOTE 2 - The IUPAC name is 0,0,0',0'-tetraethyl-thiopyrophosphate; in C.A. usage: thiodiphosphoric acid ((HO)2 P(O) OP (S) (OH)2) tetraethyl ester [645-78-3].

NOTE 3 - On a diazinon content of 100 g/kg, the maximum permitted O,S-TEPP content would be 0.22 x 100 = 22 mg/kg in the material.

5.3.2 S,S-TEPP(Note 4)

When determined in accordance with WD[1)] the maximum content of S, S-TEPP shall be 2.8 X *x* mg/kg. where *x* is content found under clause 5.2.2 (Note 5).

NOTE 4 - The IUPAC name is 0,0,0',0'-tetraethyl dithiopyrophosphate, in CA usage: thiodiphosphoric acid ([(HO)2 P(S)]20) tetraethyl] ester.

NOTE 5 - On a diazinon content of 100 g/kg, the maximum permitted O,S-TEPP content would be 2.8 x 100 = 280 mg/kg in the material.

5.3.3 Water

'When determined in accordance with clause 4.1 of ES 749, the maximum water content shall be 2 g/kg.

5.4 Physical properties

5.4.1 Acidity

When determined in accordance with ES 750 the maximum acidity content shall be 0.5 g/kg, calculated as H_2SO_4. (Note 6).

NOTE 6 - The method ES 749, clause 6.1.3 or 6.2.3 have not been tested on this type of formulation but maybe used as a starting point for further development.

5.4.2 Flash point

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

NOTE 7 - Attention is drawn to the appropriate national and international regulations on handing and transport of flammable materials.

5.4.3 Miscibility with hydrocarbon oil

If required, it shall be determined in accordance with ES 736 and the product shall be miscible with the appropriate hydrocarbon oil (Note 8).

NOTE 8 - The concentration should not be higher than the highest concentration recommended in the instructions for use.

5.5 Storage stability

5.5.1 Stability at 0°C

After storage at (0± 1)^{0}C for 7 days, when determined in accordance with ES 752, the volume of solid and/or liquid which separates shall not be more than 0.3 ml.

5.5.2 Stability at 54°C

After storage at (54 ± 2)^{0}C for 14 days, when determined in accordance with ES 753, the product shall continue to comply with clause 5.2.2(except that the minimum permitted diazinon content shall be 85% of that found under clause 5.2.2), 5.3.1 ,5.3.2 and 5.4.1.

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.

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Ethiopian Standards Agency

Organization and Objectives

The Ethiopian Standards Agency (ESA) is the national standards body of Ethiopia established in 2010 based on regulation No. 193/2010.ESA is established due to the restructuring of Quality and Standards Authority of Ethiopia (QSAE) which was established in 1998.

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

The Ethiopian Standards are developed by national technical committees which are composed of different stakeholders consisting of educational Institutions, research institutes, government organizations, certification, inspection, and testing organizations, regulatory bodies, consumer association etc. The requirements and/ or recommendations contained in Ethiopian Standards are consensus based that reflects the interest of the TC representatives and also of comments received from the public and other sources. Ethiopian Standards are approved by the National Standardization Council and are kept under continuous review after publication and updated regularly to take account of latest scientific and technological changes. Orders for all Ethiopian Standards, International Standard and ASTM standards, including electronic versions, should be addressed to the Documentation and Publication Team at the Head office and Branch (Liaisons) offices. A catalogue of Ethiopian Standards is also available freely and can be accessed in from our website.

International Involvement

ESA, representing Ethiopia, is a member of the International Organization for Standardization (ISO), and Codex Alimentarius Commission (CODEX). It also maintains close working relations with the international Electro-technical Commission (IEC) and American Society for Testing and Materials (ASTM).It is a founding member of the African Regional Organization for standardization (ARSO).

<u>More Information</u>?
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