
**Pesticides — Diazinon
Part 5:
Emulsifiable concentrates (EC) —
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 708-5:2002 - *Pesticides - Diazinon Part 5: Emulsification concentrates(EC) - Specification*, with some editorial changes without altering the technical contents in the former text.

In preparing this standard reference has been made to the following:

- AGP: CP 223:1988, FAO specification for plant protection products- Diazinon technical (with stablizer) FAO specification 15/TC/S (1988), 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 — Diazinon

Part 5: Emulsifiable concentrates (EC) — Specification

1 Scope

This Ethiopian Standard specifies requirements for diazinon emulsifiable concentrate 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 – Guideline 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.*

ES 727, *Pesticides – Determination of diazinon content in diazinon technical.*

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

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

ES 751, *Pesticides – Determination of characteristics of EC.*

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

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

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

WD¹⁾ *Pesticides – Determination of O, S-TEPP and S, S-TEPP content in diazinon.*

¹⁾under preparation

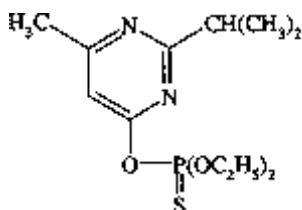
3 Definition

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

4 General information

COMMON NAME: Diazinon (ISO)

STRUCTURAL FORMULA:



EMPIRICAL FORMULA: C₁₂H₂₁N₂O₃PS

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 CLASS²⁾

5 Requirements

5.1 Description

The material shall consist of technical diazinon complying with the requirements of ES 720 dissolved in suitable solvents and with other necessary formulants. It shall be in the form of a stable liquid free from suspended matter and sediment.

²⁾ Based on the technical material

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 clause 8.1.1 of ES 720, and the isolated active ingredient shall comply with at least one additional test.

5.2.2 Diazinon

The diazinon content shall be declared in g/l at 20°C or g/kg 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:

<u>Declared content</u>	<u>Permitted tolerance</u>
Up to 500 g/l or g/kg	± 5% of the declared content
above 500 g/l or g/kg	± 25 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 WD¹⁾, the maximum content of O,S-TEPP shall be $0.22 \times x$ mg/kg, where x is the diazinon content found under clause 5.2.2 (Note 3).

NOTE2-The IUPAC name is 0,0,0',0'- tetraethyl thiopyrophosphate; In CA usage:thiodiphosphoric acid ((HO)2P(O)OP(S)(OH)2)tetraethyl ester [645-78-3]

NOTE 3 - On a diazinon content of 400 g/kg, the maximum permitted O,S-TEPP content would be $0.22 \times 400 = 88$ mg/kg in the material.

5.3.2 S,S-TEPP(Note 4)

When determined in accordance with WD¹⁾, the maximum content of S, S-TEPP shall be $2.8 \times x$ 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) 2P(S)] 2O) tetraethyl ester [3689-24-5].

NOTE 5 - On a diazinon content of 400 g/kg, the maximum permitted S,S-TEPP content would be $2.8 \times 400 = 1.120$ 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 clause 6.2.5 of ES 750, the maximum acidity content shall be 0.5 g/kg, calculated as H₂SO₄.

5.4.2 Emulsion stability and re-emulsification

After the heat stability test, when the product is diluted at 30°C and determined with standard water A and C in accordance with clause 6.1.1 of ES 751 (Note 6), it shall comply with the following:

<u>Time after dilution</u>	<u>Limits of Stability</u>
0h	Initial emulsification, complete
0.5 h	Cream, maximum 1 ml
2 h	Cream, maximum 4 ml
	Free oil, nil
24 h (note 7)	Re-emulsification, complete
24.5 h (note 7)	Cream, maximum 4 ml
	Free oil, maximum 2 ml

NOTE 6 - Unless another temperature is specified.

NOTE 7-These tests need only be carried out in case of doubt as to the emulsion stability result of the 2 hour test.

In special cases, a test using standard water A and C before the heat stability test may be necessary.

Alternatively, if the buyer requires other standard waters to be used, then this shall be specified when ordering.

5.4.3 Flash point

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

NOTE 8 - Attention is drawn to the appropriate national and international regulations on handling and transport of flammable material.

5.5 Storage stability

5.5.1 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, the volume of solid and/or liquid which separates shall be not more than 0.3 ml.

5.5.2 Stability at 54°C

After storage at $(54 \pm 2)^{\circ}\text{C}$ for 14 days in a closed container, when determined in accordance with clause 6.1.3 of ES 753, the product shall continue to comply with clauses 5.2.2 (except that the minimum permitted diazinon content shall be 90% of that found under clause 5.2.2mmnmnmn, 5.3.1 ,5.3.2 and 5.4.1.

6 Handling

Pesticides shall be handled, stored and distributed 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.

DRAFT

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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?

Contact us at the following address.

The Head Office of ESA is at Addis Ababa.

☎ 011- 646 06 85, 011- 646 05 65

☎ 011-646 08 80

✉ 2310 Addis Ababa, Ethiopia

E-mail: info@ethiostandards.org,

Website: www.ethiostandards.org



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