



Food and Agriculture Organization  
of the United Nations

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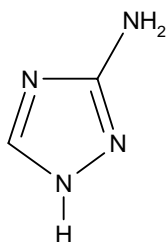
## **AMITROLE**

*1H*-1,2,4-triazol-3-ylamine

## INFORMATION

**COMMON NAME:** amitrole (ISO)

**STRUCTURAL FORMULA:**



**EMPIRICAL FORMULA:** C<sub>2</sub>H<sub>4</sub>N<sub>4</sub>

**RMM:** 84.1

**CAS REGISTRY NUMBER:** 61-82-5

**CIPAC CODE NUMBER:** 90

**EEC NUMBER:** 200-521-5

**CHEMICAL NAMES:** 1*H*-1,2,4-triazol-3-ylamine (IUPAC)

1*H*-1,2,4-triazol-3-amine (CA)

**AMITROLE TECHNICAL**  
FAO Specifications 90/TC/S/P

**.1 DESCRIPTION**

The material shall consist, essentially, of amitrole in the form of white to grey or yellowish crystals or flakes. It shall be free from extraneous materials or added modifying agents.

**.2 ACTIVE INGREDIENT**

.2.1 Identity ( CIPAC 1B, p. 1720)

An identity test is required if the identity of the active ingredient is in doubt..

.2.2 Amitrole (CIPAC J, p.4)

The amitrole content shall be declared ( not less than 900 g/kg ) and, when determined, the content obtained shall not differ from that declared by more than  $\pm 25$  g/kg.

.2.3 Freezing point range ( MT 1, CIPAC F, p.3),

145 to 157 °C

### **.3 IMPURITIES**

.3.1 Water ( MT 30.1, CIPAC F, p.91)

Maximum : 20 g/kg

.3.2 Water insolubles (MT 10.2, CIPAC F, p.27) (Note 1).

Maximum : 5 g/kg

#### *NOTES*

*1. This method must be superseded (or completed ) by HPLC and infrared spectrometry.*

## AMITROLE WATER SOLUBLE CONCENTRATES

FAO Specification 90/SL/S/P

### .1 DESCRIPTION

The material shall consist of technical amitrole, complying with the requirements of FAO specification 90/TC/S/P in a form of a solution, based on amitrole as the only active ingredient, together with any necessary formulants. The solution shall be in a form of a clear or opalescent liquid, free from visible suspended matter and sediment, to be applied as a true solution of the active ingredient in water (Note 1).

### .2 ACTIVE INGREDIENT

#### .2.1 Identity (CIPAC 1B, p.1722)

An identity test is required if the identity of the active ingredient is in doubt..

#### .2.2 Amitrole (CIPAC 1B, p.1723)

The amitrole content shall be declared (g/kg and/or g/l at 20 °C) (Note 2) and, when determined, the content obtained shall not differ from that declared by more than the following amounts :

<u>Declared content</u>	<u>Permitted tolerance</u>
above 25 up to 100 g/kg or g/l	± 10 % of the declared content
above 100 up to 250 g/kg or g/l	± 6 %
above 250 up to 500 g/kg or g/l	± 5 %
above 500 g/kg or g/l	± 25 g/kg or g/l

### **.3 PHYSICAL PROPERTIES**

#### **.3.1 Miscibility in water (MT 41, CIPAC F, p.131)**

The product, after dilution with CIPAC standard water D shall give a clear or faint turbid solution at  $20 \pm 2^{\circ}\text{C}$ . After standing for one hour, the solution should pass through a  $75 \mu\text{m}$  test sieve without any visible particles retained on the sieve.

#### **.3.2 Flash point (MT 12, CIPAC F p.31)**

The flash point of the product shall not be lower than the minimum declared flash point (Note 3). The procedure used shall be stated (e.g. Abel method).

### **.4 STORAGE STABILITY**

#### **.4.1 Stability at $0^{\circ}\text{C}$ (MT 39.2, CIPAC F, p.128)**

After storage at a temperature of  $0 \pm 1^{\circ}\text{C}$  (Note 4) for 7 days, the volume of the solid or liquid which separates shall not be more than 0.3%.

#### **.4.2 Stability at $54^{\circ}\text{C}$ (MT 46.1.3, CIPAC F, p.150)**

After storage at  $54 \pm 2^{\circ}\text{C}$  for 14 days, the product shall continue to comply with 2.2 and 3.1

### **.5 CONTAINERS**

Containers shall be lined, where necessary, with a suitable material, or the interior surfaces shall be treated to prevent corrosion and/or deterioration of the contents. (Note 3)

## *NOTES*

*1. During storage a faint turbidity may occur in relation with water insoluble impurities of amitrole.*

*2. If the customer requires both g/kg and g/l at 20 °C, then, in cases of dispute, the analytical results shall be expressed as g/kg.*

*3 Attention is drawn to the appropriate national and international regulations concerning handling and transport of flammable materials.*

*4 A test temperature of 0 °C may not be suitable for products intended for use in cold climates and, in such cases, an alternative test temperature may be specified.*

## AMITROLE WATER SOLUBLE POWDERS

FAO Specification 90/SP/(S)/2P:

### .1 DESCRIPTION

The material shall consist of a homogeneous mixture of technical amitrole as the only active ingredient complying with the requirement of FAO specification 90/TC/S/P, in a form of a powder together with carriers and any other necessary formulants. The product shall be a fine powder, free from visible extraneous matters and hard lumps, and shall be white to greyish of yellowish colour, to be applied as a true solution of the active ingredient after dissolution in water, but which may contain insoluble inert ingredients.

### .2 ACTIVE INGREDIENT

#### .2.1 Identity (CIPAC 1B, p.1722)

The active ingredient shall comply with an identity test and, where the identity remains in doubt, shall comply with at least one additional test.

#### .2.2 Amitrole (CIPAC J, p.4)

The amitrole content shall be declared and, when determined, the content obtained shall not differ from that declared by more than the following amounts:

<u>Declared content</u>	<u>Permitted tolerance</u>
above 25 up to 100 g/kg	± 10 % of the declared content
above 100 up to 250 g/kg	± 6 %
above 250 up to 500 g/kg	± 5 %
above 500 g/kg	± 25 g/kg

### .3 IMPURITIES

#### .3.1 Water ( MT 30, CIPAC F, p.91)

Maximum : 20 g/kg

### .4 PHYSICAL PROPERTIES



.4.1 Persistent foam (MT 47.1, CIPAC F, p.152. Note 1)

Maximum : 25 ml of foam after 1 min

.4.2 Solid material insoluble in water (MT 46.1.3, CIPAC F, p.150)

The content of solid material insoluble in water shall be declared.

.4.3 Wet sieve test (MT 59.3, CIPAC F, p.179)

Minimum: Not less than 98% of the product shall pass through a 75 µm test sieve.

.4.4 Rate of solution (MT 60, CIPAC F, p.182)

All the product, other than the insoluble matter declared, shall dissolve in water within 3 min at  $20 \pm 1$  °C at 1% concentration.

## **.5 STORAGE STABILITY**

.5.1 Stability at 54°C (MT 46.1.2, CIPAC F, p.149. Note 2 )

After storage at  $54 \pm 2$  °C for 14 days Note 3), the product shall continue to comply with .2.2, .4.3 and .4.4.

## **.6 CONTAINERS**

Containers shall be lined, where necessary, with a suitable material, or the interior surfaces shall be treated to prevent corrosion and / or deterioration of the contents. (Note 4)

## *NOTES*

- 1. The product should be tested at the highest and lowest rates of use recommended by the supplier, provided this is consistent with the conditions given in the method.*
- 2. Samples of the product taken before and after the storage stability test should be analysed together after the test to reduce the analytical error.*
- 3. Unless other temperatures and/or times are specified.*
- 4. Attention is drawn to the appropriate national and international regulations concerning handling and transport.*