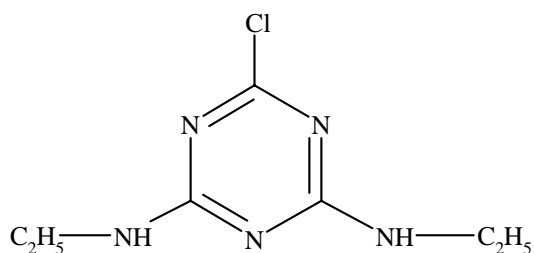


SIMAZINE
22



<i>ISO common name</i>	Simazine
<i>Chemical name</i>	2-Chloro-4,6-bis(ethylamino)-1,3,5-triazine (IUPAC); 6-chloro- <i>N,N'</i> -diethyl)-1,3,5-triazine-2,4-diamine (CA; 122-34-9)
<i>Empirical formula</i>	C ₆ H ₁₂ ClN ₅
<i>RMM</i>	201.7
<i>m.p</i>	229 °C
<i>v.p.</i>	0.8 × 10 ⁻⁶ Pa at 20 °C
<i>Solubility</i>	In water: 5 mg/l at 20 °C; methanol: 200 mg/l; chloroform: 0.9 g/l; petroleum spirit: 2 mg/l; diethyl ether, dioxane and ethylcellosolve: 300 mg/l at 25° C
<i>Description</i>	White crystalline solid
<i>Stability</i>	Stable under neutral or slightly acid or basic conditions; hydrolysed by stronger acids and bases at higher temperatures
<i>Formulations</i>	Wettable powders, water dispersible granules and suspension concentrates and granules

SIMAZINE TECHNICAL

*22/TC/M/-

1 Sampling. Take at least 100 g.

2 Identity tests

2.1 Infrared. Prepare potassium bromide discs from the sample and from simazine standard. Scan the discs from 400-4000 cm^{-1} . The spectrum obtained from the sample should not differ significantly from that of the standard.

2.2 GLC. Use the GLC method below. The relative retention time of simazine with respect to the internal standard for the sample solution should not deviate by more than 1% from that for the calibration solution.

3 Simazine

OUTLINE OF METHOD Simazine is determined by gas chromatography on a Carbowax 20M column using flame ionisation detection and internal standardisation.

REAGENTS

Simazine standard of known purity

Di(2-ethylhexyl) phthalate internal standard, purity at least 980 g/kg; should not contain impurities that elute at the simazine retention time

Dimethylformamide (DMF)

Internal standard solution. Weigh into a volumetric flask (1 l) 3.0 ± 0.1 g of di(2-ethylhexyl) phthalate. Dissolve in DMF (200 ml) and fill to the mark with DMF.

Calibration solution. Weigh (to the nearest 0.1 mg) into a ground-glass stoppered round bottomed flask (100 ml) about 150 mg (*s* mg) simazine standard. Add by pipette internal standard solution (50.0 ml), stopper, and shake mechanically for 30 min.

APPARATUS

Gas chromatograph fitted with a flame ionisation detector

Column glass, 1.8 m \times 4 mm (i.d.) packed with 3% Carbowax 20 M on 80 to 100 mesh Gas Chrom Q. Condition the column at 240 °C for 24 h using carrier gas at about 40 ml/min.

Electronic integrator or data system

Mechanical shaker

* AOAC-CIPAC method 1974.

PROCEDURE

(a) Operating conditions (typical):

<i>Oven temperature</i>	210 ± 5 °C
<i>Injection port temperature</i>	250 °C
<i>Detector temperature</i>	250 °C
<i>Injection volume</i>	3 µl
<i>Number of theoretical plates</i>	at least 2000
<i>Flow rate carrier gas</i>	nitrogen or helium, 80 to 100 ml/min
<i>Flow rates other gases</i>	as recommended for the particular detector
<i>Retention times</i>	simazine: 6 to 8 min internal standard: 10 to 14 min

(b) Preparation of sample. Weigh (to the nearest 0.1 mg) into a ground-glass stoppered round bottomed flask (100 ml) enough sample to contain about 150 mg simazine (*w* mg). Add by pipette internal standard solution (50.0 ml), stopper and shake mechanically for 30 min. Allow any insoluble material to settle, or centrifuge a portion of the solution to obtain a clear solution.

(c) Determination. Inject into the gas chromatograph 3 µl portions of the calibration solution until the peak height ratio of simazine: dieldrin varies by less than 1 % for successive injections. Then make duplicate 3 µl injections of the sample solution followed by duplicate injections of the calibration solution. Peak height ratios must be within 1 % of the first accepted standard values or repeat the the series of injections. Repeat for additional samples. Calculate the peak height ratios for both duplicate injections preceding and following the sample injections. Average the four values (*R'*). Calculate the average peak height ratios for the two sample injections (*R*).

(d) Calculation

$$\text{Simazine content} = \frac{R \times s \times P}{R' \times w} \text{ 1g/kg}$$

where:

- R* = simazine to internal standard peak height ratio for the sample solution
- R'* = simazine to internal standard peak height ratio for the calibration solution
- s* = mass of simazine in the calibration solution (mg)
- w* = mass of simazine in the sample solution (mg)
- P* = purity of the simazine standard (g/kg)

SIMAZINE WETTABLE POWDERS***22/WP/M/-****1 Sampling.** Take at least 500 g.**2 Identity tests****2.1 Infrared.** Extract the sample with chloroform, filter and evaporate the solvent in a stream of clean, dry air. Continue as for **22/TC/M/2.1**.**2.3 GLC.** As for simazine technical **22/TC/M/2.2**.**3 Simazine.** As for simazine technical for **22/TC/M/3**.**4 Suspensibility***(a) Preparation of suspension.* MT 15.1 (i).*(b) Determination of sedimentation.* MT 15.1 (ii).*(c) Determination of simazine in the bottom 25 ml of suspension.* After removal of the top 225 ml transfer the bottom 25 ml of suspension to a large evaporating dish, remove the water by heating in an oven at 100 °C and determine the mass (*Q* g) of simazine in the residue by **22/TC/M/3**.*(d) Calculation*

$$\text{Suspensibility} = \frac{111 (c - Q)}{c} 2\%$$

where:

c = mass of active ingredient in sample taken for the preparation of the suspension (g)*Q* = mass of active ingredient in the 25 ml remaining in the cylinder (g)

* AOAC-CIPAC method 1974.

SIMAZINE GRANULES
*** 22/GR/M/-**

1 Sampling. Take at least 1 kg.

2 Identity tests

2.1 Infrared. Extract the sample with chloroform, filter and evaporate the solvent in a stream of clean dry air. Continue as for **22/TC/M/2.1**.

2.3 GLC. As for simazine technical **22/TC/M/2.2**.

3 Simazine. As for simazine technical for **22/TC/M/3**.

* AOAC-CIPAC method 1974