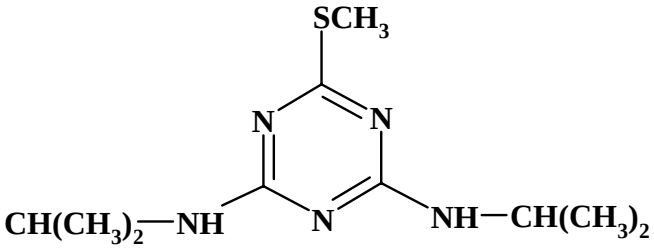
PROMETRYN
93



ISO common name	Prometryn
Chemical name	2,4-bis(Isopropylamino)-6-methylthio-1,3,5-triazine (IUPAC); *N*,*N*′-bis(1-methylethyl)-6-methylthio-1,3,5-triazine-2,4-diamine (CA; *7287-19-6*)
Empirical formula	$C_9H_{16}ClN_5$
RMM	241.4
m.p	128 - 120 °C
v.p.	1.3×10^{-4} Pa at 20 °C
Solubility	In water: 48 mg/l at 20 °C; readily soluble in organic solvents
Description	White crystalline solid
Stability	Stable under neutral or slightly acid or alkaline conditions; but hydrolyses under acid or alkaline conditions at higher temperatures
Formulations	Wettable powders and suspension concentrates

PROMETRYN TECHNICAL
*93/TC/M/-

1 Sampling. Take at least 100 g.

2 Identity tests

2.1 Infrared. Prepare potassium bromide discs from the sample and from prometryn 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 prometryn with respect to the internal standard for the sample solution should not deviate by more than 1% from that for the calibration solution.

3 Prometryn

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

REAGENTS

Prometryn standard of known purity
Dieldrin internal standard
Chloroform
Internal standard solution. Weigh into a volumetric flask (500 ml) 4.0 ± 0.02 g of dieldrin. Dissolve in and fill to the mark with chloroform.
Calibration solution. Weigh (to the nearest 0.1 mg) into a ground-glass stoppered round bottomed flask (100 ml) about 250 mg (*s* mg) prometryn 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 × 4 mm (i.d.) packed with 3% Carbowax 20M 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 1973.

PROCEDURE

(a) Operating conditions (typical):

Oven temperature	200 ± 10 °C
Injection port temperature	240 °C
Detector temperature	240 °C
Injection volume	3 µl
Number of theoretical plates	at least 2000
Flow rate carrier gas	nitrogen or helium, 80 to 100 ml/min
Flow rates other gases	as recommended for the particular detector
Retention times	prometryn: 6 to 8 min internal standard: 9 to 12 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 250 mg prometryn (*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 prometryn: 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 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

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

where:

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

PROMETRYN WETTABLE POWDERS
*93/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 **93**/TC/M/2.1.
2.3 GLC. As for prometryn technical **93**/TC/M/2.2.

3 Prometryn. As for prometryn technical for **93**/TC/M/3.

4 Suspensibilty

(a) Preparation of suspension. MT 15.1 *(i)*.

(b) Determination of sedimentation. MT 15.1 *(ii)*.

(c) Determination of prometryn 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 prometryn in the residue by **93**/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 1973.