

Phosphoric Acid Esters 0.05/a

Order No.

67 28461



ST-144-2001

Standard Measuring Range : 0.05 ppm Dichlorvos
Number of Strokes (n) : 10
Time for Measurement : app. 5 min
Standard Deviation : $\pm 30\%$
Colour Change : yellow \rightarrow red

Ambient Operating Conditions

Temperature : 10 to 40 °C
Absolute Humidity : 3 to 18 mg H₂O / L

Reaction Principle

- a) $(\text{CH}_3\text{O})_2\text{PO}_2\text{-CH=CCl}_2 + \text{Cholinesterase} \rightarrow$
inactive enzyme
b) Butyrylcholine iodide + H₂O \rightarrow Butyric acid
c) Butyric acid + Phenol red \rightarrow yellow reaction product

If phosphoric acid esters are present the enzyme is inactivated and butyric acid will not form, thus the weak alkali solution colours the indicating layer red and must be stable for 1 min.

If the enzyme remains active, phosphoric acid esters are not present, and the indicating layer remains yellow because of butyric acid formation.

Cross Sensitivity

Other phosphoric acid esters than dichlorvos are also indicated, but with different sensitivities.

Additional Information

After performing the required 10 pump strokes the reagent ampoule must be broken and the liquid transferred to the enzyme layer by gently tapping the side of the tube. The substrate layer must not become wetted! After waiting one (1) minute the liquid must be carefully drawn up to the marking line using the pump. Wait another minute before drawing the liquid onto the indication layer using the pump.