DROP TEST
ACIDITY
(Sulfuric, Phosphoric, or Sulfamic Acid) (1 drop = 1 g/100mL)

COMPONENTS:

1 x 4029	**Pipet, Calibrated (0.5 & 1.0 mL), plastic**
1 x 5401	**Instruction**
1 x 9198	**Sample Tube, Graduated (25 mL) w/ cap, plastic**
1 x R-0645-C	**Total Alkalinity Indicator, 2 oz, DB**
1 x R-0740-C	**Sodium Hydroxide Reagent, 2 oz, DB**

TO ORDER REPLACEMENT PARTS AND REAGENTS CALL TOLL-FREE 800-TEST KIT (800-837-8548).

PROCEDURE:

CAREFULLY READ AND FOLLOW PRECAUTIONS ON REAGENT LABELS. KEEP REAGENTS AWAY FROM CHILDREN.

NOTE: When dispensing reagents from dropper bottles, **always** hold bottle in a vertical position.

Acidity Test

1. Using 1.0 mL pipet (#4029), add 0.5 mL acid solution to be tested to 25 mL sample tube (#9198).

NOTE: For phosphoric or sulfamic acid, add 1.0 mL acid solution to be tested to 25 mL sample tube.

2. Dilute to approximately 1/3 full with tap water.

3. Add 5 drops R-0645 Total Alkalinity Indicator. Swirl to mix. Sample will turn red.

4. Add R-0740 Sodium Hydroxide Reagent dropwise, swirling and counting after each drop, until color changes from red to green.

5. Record drops of R-0740 Sodium Hydroxide Reagent as grams per 100 mL (g/100 mL), which is almost the same as percent.

NOTE: At higher concentrations of sulfuric and phosphoric acid, the difference between grams per hundred milliliters and percent can be considerable. Consult the following tables for corrections to be applied. (Sulfamic acid is a solid not likely to be above 15% in solution.)

SULFURIC ACID (H_2SO_4)

grams per 100 mL	percent
10	9.4
20	17.8
30	25.4
40	32.3
50	38.7
60	44.6
70	50.1
80	55.25
90	60.0
100	64.6
110	68.9
120	74.0
130	76.9
140	80.7
150	84.5
160	89.6
170	93.0
180	99.0

(OVER)

PHOSPHORIC ACID (H_3PO_4)

grams per 100 mL	percent
10	9.5
20	18.0
30	26.0
40	33.2
50	39.9
60	46.1
70	51.8
80	57.1
90	62.1
100	66.9
110	71.4
120	75.7
130	79.8
140	83.6
150	87.4
160	91.0
170	94.5
180	97.8
187	100.0

SULFURIC ACID (H_2SO_4)

NOTE: Drop equivalence can be changed by adjusting the sample size in Step 1. In strong acid solutions (above 1%) dilution can be made by using tap water. In weaker acid solutions, deionized or distilled water should be used for dilution.

Sample Size Used	Drop Equivalence for Sulfuric Acid
0.5 mL	1 drop= 1.0 g/100 mL (%)
1.0 mL	1 drop = 0.5 g/100 mL (%)
10.0 mL	1 drop = 0.05 g/100 mL (500 ppm)
20.0 mL	1 drop = 0.025 g/100 mL (250 ppm)
25.0 mL	1 drop = 0.02 g/100 mL (200 ppm)

Sample Sized Used	Drop Equivalence for Phosphoric Acid or Sulfamic Acid
0.5 mL	1 drop = 2.0 g/100 mL (%)
1.0 mL	1 drop = 1.0 g/100 mL (%)
10.0 mL	1 drop = 0.1 g/100 mL (1000 ppm)
20.0 mL	1 drop = 0.05 g/100 mL (500 ppm)
25.0 mL	1 drop = 0.04 g/100 mL (400 ppm)

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