

BOILER SYSTEM & POLYMER TESTS

COMPONENTS (not Bill of Materials):

P/T Alkalinity

- ** 1 x 9198 Sample Tube, Graduated (25 mL) w/ cap, plastic
- ** 1 x R-0638-C Phenolphthalein Indicator, 2 oz, DB
- 1 x R-0645-C Total Alkalinity Indicator, 2 oz, DB
- 1 x R-0687-C Sulfuric Acid .12N, 2 oz, DB

Chloride

- ** 1 x 9198 Sample Tube, Graduated (25 mL) w/ cap, plastic
- 1 x R-0630-C Chromate Indicator, 2 oz, DB
- ** 1 x R-0638-C Phenolphthalein Indicator, 2 oz, DB
- 1 x R-0687-C Sulfuric Acid .12N, 2 oz, DB
- 1 x R-0706-C Silver Nitrate Reagent, 2 oz, DB

Total Hardness

- ** 1 x 9198 Sample Tube, Graduated (25 mL) w/ cap, plastic
- 1 x R-0619B-C Hardness Buffer, 2 oz w/ blue cap, DB
- * 1 x R-0620B-I Hardness Indicator Powder, 10 g w/ blue dot
- 1 x R-0683-C Hardness Reagent, 2 oz, DB

Total Hardness (trace)

- ** 1 x 9198 Sample Tube, Graduated (25 mL) w/ cap, plastic
- * 1 x R-0620B-I Hardness Indicator Powder, 10 g w/ blue dot
- 1 x R-0622-C Trace Hardness Buffer, 2 oz w/ blue cap, DB
- 1 x R-0623-C Trace Hardness Reagent, 2 oz, DB

Free Polymer

- 1 x 5190 Instruction/Turbidity Standards
- 1 x 5190A Instruction
- ** 1 x 9198 Sample Tube, Graduated (25 mL) w/ cap, plastic
- 1 x R-0830-C Free Polymer Reagent #1, 2 oz
- 1 x R-0831-C Free Polymer Reagent #2, 2 oz

Sodium Sulfite

- ** 1 x 9198 Sample Tube, Graduated (25 mL) w/ cap, plastic
- ** 1 x R-0638-C Phenolphthalein Indicator, 2 oz, DB
- 1 x R-0699-C Iodide Iodate Reagent, 2 oz, DB
- 1 x R-0725-I Acid Starch Indicator Powder, 10 g

Instr. #5872

Misc.

- 1 x 5860 Instruction (Syringe Filtration System)
- 1 x 5872 Instruction
- * Kit includes one.
- ** Kit includes two.

**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.

P/T Alkalinity Test

1. Rinse and fill 25 mL sample tube (#9198) to 25 mL mark with water to be tested.
2. Add 3 drops R-0638 Phenolphthalein Indicator. Swirl to mix. Sample will turn pink if P alkalinity is present—proceed to Step 3. If sample is colorless, proceed to Step 4.
3. Add R-0687 Sulfuric Acid .12N dropwise, swirling and counting after each drop, until color changes from pink to colorless. Record drops as P reading.
4. Add 3 drops R-0645 Total Alkalinity Indicator. Swirl to mix. Sample will turn green.
5. Continue adding R-0687 Sulfuric Acid .12N dropwise, swirling and counting after each drop, until color changes from green to red. Record total drops (Steps 3 & 5) as T reading.
6. Multiply P reading by 10. Record as parts per million (ppm) P alkalinity as calcium carbonate. Multiply T reading by 10. Record as ppm T alkalinity as calcium carbonate.

Chloride Test

NOTE: When sulfite content of sample water to be tested exceeds 10 ppm, the sulfite should be oxidized to prevent interference in test. A 25 mL water sample is first adjusted to the appropriate pH, then 1 mL (or 25 drops) of R-0649 Hydrogen Peroxide Solution (sold separately) is added and thoroughly mixed. Continue with the rest of the procedure.

(OVER)

1. Rinse and fill 25 mL sample tube (#9198) to 25 mL mark with water to be tested.
 2. Add 2 drops R-0638 Phenolphthalein Indicator. Swirl to mix. If sample turns pink, add R-0687 Sulfuric Acid .12N dropwise, swirling after each drop, until color changes from pink to colorless.
 3. Add 5 drops R-0630 Chromate Indicator. Swirl to mix. Sample will turn yellow.
 4. Add R-0706 Silver Nitrate Reagent dropwise, swirling and counting after each drop, until color changes from yellow to a milky salmon (brick) red.
- NOTE: Do not add enough R-0706 Silver Nitrate Reagent to give a brown color. First change from yellow to a milky salmon (brick) red is the endpoint.
5. Multiply drops of R-0706 Silver Nitrate Reagent by 10. Record as parts per million (ppm) chloride.

Total Hardness Test

1. Rinse and fill 25 mL sample tube (#9198) to 25 mL mark with water to be tested.
- NOTE: For results in grains per gallon (gpg), fill to 14.6 mL mark.
2. Add 5 drops R-06198B Hardness Buffer. Swirl to mix.
 3. Add 1 dipper R-0620B Hardness Indicator Powder. Swirl until dissolved. Sample will turn red if hardness is present—proceed to Step 4. Sample will turn blue if no hardness is present.
 4. Add R-0683 Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue.
 5. Multiply drops of R-0683 Hardness Reagent by 10. Record as parts per million (ppm) total hardness as calcium carbonate.
- NOTE: For 14.6 mL sample, record drops of R-0683 Hardness Reagent as grains per gallon (gpg) total hardness as calcium carbonate.

Total Hardness (trace) Test

1. Rinse and fill 25 mL sample tube (#9198) to 25 mL mark with water to be tested.
2. Add 5 drops R-0622 Trace Hardness Buffer. Swirl to mix.
3. Add 1 dipper R-0620B Hardness Indicator Powder. Swirl to mix. Sample will turn red if hardness is present—proceed to Step 4. Sample will turn blue if no hardness is present.
4. Add R-0623 Trace Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue.
5. Multiply drops of R-0623 Trace Hardness Reagent by 0.5. Record as parts per million (ppm) hardness as calcium carbonate.

Sodium Sulfite Test

1. Rinse and fill 25 mL sample tube (#9198) to 25 mL mark with cooled (room temperature) water to be tested.

NOTE: For results in grains per gallon (gpg), fill to 14.6 mL mark.

2. Add 1 drop R-0638 Phenolphthalein Indicator. Swirl to mix. Sample will turn pink.
3. Add R-0725 Acid Starch Indicator Powder a dipper at a time, swirling after each dipper, until color changes from pink to colorless. Add 2 more dippers. Swirl until dissolved.
4. Add R-0699 Iodide Iodate Reagent dropwise, swirling and counting after each drop, until sample changes from colorless to blue.
5. Multiply drops of R-0699 Iodide Iodate Reagent by 10. Record as parts per million (ppm) sodium sulfite.

NOTE: For 14.6 mL sample, record drops as grains per gallon (gpg) sodium sulfite.

1 R-0638-C	R-0645-C	R-0687-C	4 R-0830-C	R-0831-C	9198	6257 FILTER PAPER
2 R-0622-C	R-0623-C	R-0620B-I	R-0619B-C	R-0683-C	9198	
3 R-0630-C	R-0687-C	R-0706-C	R-0638-C	5 R-0699-C	R-0725-I	6249 FILTER HOLDER
6260 - 30 mL SYRINGE				6		

1 = Alkalinity - P/T

2 = Hardness - trace

3 = Chloride

4 = Polymer

5 = Hardness - total

6 = Sulfite (Sodium)



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