

Taylor's Neutralizing Amines Test Kit

INTRODUCTION

Taylor's K-1682 is appropriate for measuring six neutralizing amines in high-purity steam and condensate. Neutralizing amines will **prevent carbon dioxide corrosion** in steam condensate systems. **Morpholine, cyclohexylamine, diethylethanolamine, and triethanolamine** are among the neutralizing amines used to elevate condensate pH.

Levels are determined with an **acid-base titration**. Note: This test is not specific to neutralizing amines. Rather, it is a sensitive alkalinity test. For this reason, carbonates or other alkaline materials from boiler carryover or leaks in a condenser or heat exchanger can interfere. Likewise, do not use this product to detect neutralizing amines outside a condensate system.

NEUTRALIZING AMINES KIT

K-1682

Drop test (acid-base titration);
1 drop = 2.5 ppm monoethanolamine (MEA);
1 drop = 3.8 ppm methoxypropylamine (MOPA);
1 drop = 3.8 ppm morpholine (MOR);
1 drop = 4 ppm cyclohexylamine (CHA);
1 drop = 5 ppm diethylaminoethanol (DEAE)/
diethylethanolamine (DEEA);
1 drop = 6 ppm triethanolamine (TEA)

USER BENEFITS

- Titrations do not require the ability to match colors, only the ability to see the **permanent color change** at the end-point of the reaction.
- Test kits **come complete** with all necessary reagents and equipment.
- This test kit is practical for both **on- and off-site** testing.
- **Waterproof instructions** are printed on plastic-impregnated paper that resists fading and tearing.
- Custom-molded, durable plastic cases provide **safe storage** for all tests.
- **Proven chemistries** are based on *Standard Methods for the Examination of Water and Wastewater*, APHA, Washington, DC, and/or *American Society for Testing and Materials*, ASTM, Philadelphia, PA. Some methods use proprietary chemistry developed by Taylor Technologies.



Taylor's K-1682 is useful for determining concentrations of six popular corrosion inhibitors, including morpholine.

ALSO AVAILABLE

- A wide array of single- and multiparameter kits featuring color-matching and/or drop-count tests.
- Taylor's TTI® Colorimeter (M-3000); test 30+ parameters commonly encountered in commercial and industrial settings and transfer results to a PC database.
- Myron L Company portable instruments and calibration solutions (sold separately in reagent packs).
- Testing supplies and kit replacement parts (e.g., burets, flasks, test tubes, and test cells).
- Toll-free technical assistance at **800-TEST KIT**.



the most trusted name in water testing

Taylor Technologies, Inc.
410-472-4340
800-TEST KIT (837-8548)
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ISO 9001:2008 Certified

REPRESENTATIVE TEST PROCEDURE

Reproduced from K-1682 instruction:

DROP TEST

NEUTRALIZING AMINE EQUIVALENCE (PPM) CHA (4); DEAE/DEEA (5); MOPA (3.8); MEA (2.5); MOR (3.8); TEA (6)

COMPONENTS:

1 x 5072	Instruction
1 x 9198	Sample Tube, Graduated (25 mL) w/ cap, plastic
1 x R-0645	Total Alkalinity Indicator, DB
1 x R-0869	Neutralizing Amine Titrating Solution, DB

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

IMPORTANT: This is an alkalinity test designed for use on pristine steam condensate, where the only alkalinity present comes from the neutralizing amine treatment itself. If carbonates or other alkaline materials enter into the condensate from boiler carryover or leaks in a condenser or heat exchanger, these substances also will be titrated as alkalinity, resulting in a false amine reading. Additionally, this test cannot be used to detect the presence of neutralizing amines outside a condensate system.

If the test suddenly reads higher than normal levels of neutralizing amine, or if there is a significant reading when the operator knows no amine has been added to the system, it is evidence of either boiler carryover or a cooling water leak introducing contaminants into the condensate.

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.

Neutralizing Amine Test

1. Rinse and fill 25 mL sample tube (#9198) to 25 mL mark with water to be tested.
2. Add 5 drops R-0645 Total Alkalinity Indicator. Swirl to mix. Sample will turn green.

Instr. #5072

3. Add R-0869 Neutralizing Amine Titrating Solution dropwise, swirling and counting after each drop, until color changes from green to red.

4. Subtract 2 from the number of drops of R-0869 Neutralizing Amine Titrating Solution used and multiply the result by appropriate conversion factor (see CONVERSION FACTORS). Record as parts per million (ppm) neutralizing amine or ppm product.

CONVERSION FACTORS:

To express neutralizing amine as:	Multiply drops by:
Cyclohexylamine (CHA)	4
Diethylaminoethanol (DEAE)/ Diethylethanolamine (DEEA)	5
Methoxypropylamine (MOPA)	3.8
Monoethanolamine (MEA)	2.5
Morpholine (MOR)	3.8
Triethanolamine (TEA)	6



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