DETERMINATION OF THE CORROSIVENESS OF PETROLEUM DISTILLATE FUEL

1. OUTLINE OF METHOD

1.01 A cleaned strip of steel is exposed to a mixture of fuel and water and examined periodically for corrosion.

1.02 When this Appendix is reissued, the reason for reissue will be listed in this paragraph.

2. APPLICABILITY

2.01 This method is applicable to all petroleum distillate fuels.

3. APPARATUS AND MATERIALS

3.01 ***List of Apparatus and Materials:***

(1) ***Metal Panel:*** The panel is a cold rolled steel strip 1 by 5 by 0.0625 inches (25 by 127 by 1.6 millimeters) in accordance with WE Material Specification 57612, CR No. 3T or ASTM A 109, Temper No. 2. The panel shall have a 35-microinch finish. Suitable material is available from the Metaspec Company, PO Box 28125, San Antonio, Texas, 78228.

(2) ***Glass Jar and Cover:*** A glass jar large enough to accommodate the metal panel is required. A 16-ounce (473 ml) French square jar with cover and seal, available from Arthur H. Thomas Company, PO Box 779, Philadelphia, Pennsylvania, 19105, as their 220-8-C has been found suitable.

4. PROCEDURE

4.01 Run the test in duplicate. Prepare the test panels as follows: after removing the excess oil by wiping with a clean cloth, vapor degrease in xylene followed by immersion in methylethyl ketone. Store in a desiccator until ready for use. Handle the cleaned panels with tongs or use clean cotton gloves.

4.02 Pour 200 milliliters of the sample to be tested into each of two 16-ounce (473 ml) glass jars. Insert a steel panel into each jar, cover, and shake thoroughly to wet the entire test panel. Remove covers and allow to stand 15 minutes at room temperature (approximately 23°C).

4.03 Add 20 milliliters of synthetic sea water prepared in accordance with ASTM D 665 to each jar, cover, and shake thoroughly. Remove covers and allow to stand at room temperature for 3 hours. Remove the test panels and examine the air, solution, and water level areas on the surface of the test panels for corrosion. Corrosion should be a red oxide coating. Fine localized pitting (incipient corrosion) shall not be cause for rejection. (See Table B.)

4.04 Do not flush the sample fuel or specimen solution into the sewer system; retain in a safety can for noncontaminating disposal.