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**ANTI-ICING
ADDITIVE
TEST KIT**

**BULLETIN 145
(11-13)**

MODEL B/2HB™ ANTI-ICING ADDITIVE TEST KIT

This complete kit provides a quick, easy method for determining the volume percent (%v.) of anti-icing additive (FSII) in jet turbine engine fuels.

INEXPENSIVE TO OPERATE

Requires only:

- 200 ml sample of fuel to be tested
- An ounce of potable water
- One man's time for 12 minutes

CONVENIENT - LIGHTWEIGHT 9.3 lbs (4.2 kg)

Refractometers that were manufactured before July 2003 have two scales: one was for DiEGME, the other for EGME. The EGME scale has now been eliminated because that additive is no longer used in aviation fuels.

The basic optics have not been changed so the instrument does not need to be tested or recertified to retain its listing in ASTM Method D-5006.

PRINCIPLE OF OPERATION

A measured sample of water is added to a measured sample of fuel. The mixture is shaken to mix the water into the fuel so that the anti-icing additive will come into contact with the water. In other words, the water washes the additive out of the fuel sample. After shaking, the water/additive mixture quickly settles to the bottom where a special petcock can be opened to drain some of the water mixture. A few drops are placed on the prism of the refractometer. When you look through the refractometer eyepiece, a shadow line across a calibrated scale tells you the volume percent of additive that was in the fuel.



DIGITAL REFRACTOMETER



Using the same extraction apparatus and method. Operator error is minimized and the test is faster. Not only that, but the HB/2D is even less expensive. You can buy it separately or in a kit. [See Bulletin 167.](#)

Part Number [SC-B/2HB-2D](#)
Complete Kit [SC-B/2HB-CD](#)

NOTE: The graduated scale is labeled DiEGME and it reads the true volume percent directly. **No correction or mathematics needed.**

FAST ▪ SAFE ▪ SURE

Needs no battery or power source, no chemicals, no conversion charts. No supplies to buy - you need just 1 ounce of water and about 12 minutes for a successful test.

IMPORTANT INSTRUCTIONS

This test kit provides the necessary equipment for determining the volume percent (%v.) of anti-icing additive, known as AIA, FSII, PRIST[®], or DiEGME in turbine engine fuels.

TEST METHOD

- STEP 1** In a clean and dry container, procure a 200 ml sample of the fuel to be tested.
- STEP 2** Set up the ring stand as shown in Figure 1. Fill one of the aluminum dishes half full of water (tap water is satisfactory)
- STEP 3** Instructions for the digital refractometer are included with the unit. Open the cover of the refractometer window, make certain it is clean, and apply several drops of water to it from the aluminum dish. Use a clean toothpick or a pencil. Close the cover and look through the eyepiece to observe the location of the shadow line on the graduated scale. The eyepiece can be rotated for clarity. Remove the hex key from the instrument case and adjust the set screw (in the middle of the nameplate) so that the shadow line intersects the zero line of the scale. See Figure 2 for a typical condition of a correctly zeroed instrument. Clean the cover and window.
- CAUTION:** Do not turn the adjusting screw until you read and understand the instructions on Bulletin 145-1. Turning the adjusting screw improperly can damage the instrument and void the warranty.
- STEP 4** Using the graduated cylinder, transfer exactly 160 ml of the fuel to the separator funnel that you have placed in the ring stand.
- STEP 5** Using one of the piston pipettes, add exactly 2 ml of the same water to the separator funnel from the aluminum dish. Cap the funnel and shake vigorously for five minutes. Then place it in the ring stand to let the water settle to the bottom.
- STEP 6** When some water has collected at the bottom, carefully rotate the separator funnel drain cock so that a trickle of settled water can be taken in a clean, dry, aluminum dish.
- STEP 7** Using the same technique as in Step 3, transfer two or three drops from the aluminum dish to the refractometer prism; close the cover and observe the position of the shadow line. Figure 3 shows a typical test result for fuel containing 0.065% DiEGME.
- STEP 8** Properly dispose of the liquids. Wipe and dry all items. Treat the refractometer as an optical instrument and avoid damage to the lens and prism.



Figure 1

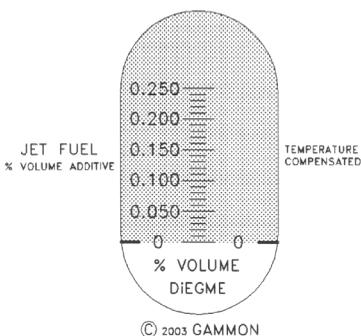


Figure 2

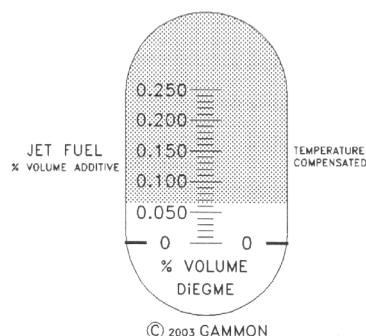


Figure 3

HOW TO ORDER

- [SC-B/2HB-C](#) Complete kit
[SC-B/2HB-C1](#) Refractometer only
[SC-B/2-F1](#) Replacement separator funnel

CALCULATING ADDITIONS OF DiEGME

If the user of this instrument intends to add DiEGME to fuel that contains insufficient additive, contact Gammon Technical Products, Inc. for detailed instructions. Ask for Instruction 6361.