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**INDUSTRY STANDARD OF THE
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**Operating procedure for adding static dissipator additive of
commercial aviation fuel
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the Aircraft Airworthiness Certification Department of the Civil Aviation Administration of China.

This standard was approved by the Aircraft Airworthiness Certification Department of the Civil Aviation Administration of China.

This standard is under the jurisdiction of the China Academy of Civil Aviation Science and Technology.

Drafting organization of this standard. China National Aviation Fuel Corporation.

1 Scope

This standard specifies the technical requirements for the addition of antistatic agents to civil aviation jet fuel, the determination of the dosage, the method of addition, and the inspection after the addition.

Certification and personal protection requirements.

This standard is applicable to the operations of adding antistatic agents in the storage and transfer of civil aviation jet fuel.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article. For undated references, the latest version (including all amendments) applies to this document.

GB/T 4756 Manual sampling method for petroleum liquids GB 6537 No. 3 jet fuel GB/T 6539 Determination of electrical conductivity of aviation fuel and distillate fuel ASTM D 1655 Aviation Turbine Fuel ASTM D 2624 Standard Test Method for Electrical Conductivity of Aviation Fuels and Distillate Fuels ASTM D 4057 Standard Practice for Manual Sampling of Petroleum and Petroleum Products ASTM D 4306 Standard Method for Aviation Fuel Sample Containers for Testing Influenced by Trace Contaminants DEF STAN 91-91 Jet A-1 Aviation Kerosene Turbine Fuel JIG AFQRJOS Joint Inspection Group Joint Venture System Aviation Fuel Quality Requirements

3 Technical requirements

3.1

It should be confirmed that the added antistatic agent is compatible with the original antistatic agent in the jet fuel, and the same antistatic agent should be used.

3.2

In order to ensure that when jet fuel is added to the aircraft fuel tank, its conductivity meets GB 6537, DEF STAN 91-91, JIG AFQRJOS or the requirements of ASTM D 1655 should comprehensively consider the attenuation of conductivity during storage, transfer, and filling.

To ensure safety, the conductivity of the upstream oil product should not be less than 50 pS/m during the transportation process. Conductivity before the delivery of oil at the airport oil depot the rate should not be less than 70 pS/m.

Note: The above conductivity values are all measured results at the temperature required by the product standard.

3.3

The initial addition amount of antistatic agent should not exceed 3.0 mg/L, and the cumulative addition amount should not exceed 5.0 mg/L.

4.1 Sample deployment

See Appendix A for sample deployment.

4.2 Calculation

4.2.1

The concentration of dosing agent is calculated according to formula (1).

5.1 Add antistatic agent online

5.1.1

The process flow chart of online dosing is shown in Figure 1.

Figure 1 Process flow chart of online dosing

5.1.2

The online dosing operation can only be started after the pipeline oil receiving and dispatching operation has reached a stable state.

5.1.3

Set the dosing concentration in the control unit.

5.1.4

The control unit starts the dosing pump, and controls the adjustment unit according to the instantaneous flow of jet fuel and the concentration of the dosing agent to uniformly distribute the antistatic agent.

Injection pipeline.

5.2 Add antistatic agent in the oil tank

5.2.1

The following methods should be used to add antistatic agents to the tank.

- Through the bottom sampler;
- Pass the quality inspection tank;
- Negative pressure suction.

5.2.2

The antistatic agent should not be added from the top of the oil tank by means of open flow.

6 Verification after addition

6.1

After the oil in the tank has settled, the upper, middle, and lower oil samples of the tank should be taken to test the conductivity to confirm the uniformity after addition.

6.2

If the conductivity values of the various oil samples differ greatly, the tank should be circulated until the conductivity of each part is uniform.

6.3

After the conductivity of the oil in the tank is uniform, take a mixed sample for conductivity test.

6.4

The conductivity, water separation index, etc. of the oil after the addition should conform to GB 6537, DEF STAN 91-91, JIG AFQRJOS or ASTM D 1655 Requirements.

7 Personal protection

Dosing operations should use personal protective equipment according to Table 1.

Appendix A

(Normative appendix) Sample deployment the sample deployment steps are as follows.

- a) Take a representative sample of oil according to the operating method of GB/T 4756 or ASTM D 4057. The sample container should meet the requirements of ASTM D 4306;
- b) Before sample preparation, confirm that the water separation index complies with GB 6537, DEF STAN 91-91, JIG AFQRJOS or ASTM D 1655 Claim;
- c) Use this batch of samples to accurately dilute the antistatic agent into a mother liquor with a concentration (C) of 1.00 g/L for the sample test;
- d) Measure 1 000 ml (accurate to 10 ml) sample (L2), and measure the sample electricity in the measuring cup according to GB/T 6539 or ASTM D 2624 Conductivity and temperature;
- e) Use a micropipette to accurately pipette the mother liquor and add it to the 1 000 ml sample. The amount of mother liquor is based on the sample upstream dosage and conductivity the expected value is selected, the initial addition amount should not be greater than 1.0 ml, and the conductivity and temperature are measured after fully stirring. Dosing every 10 min After the sample conducts conductivity and temperature measurement until the sample conductivity is stable, the sample conductivity and temperature at this time are used as the additive result;
- f) If the conductivity does not meet the requirements, you can gradually increase the amount of mother liquor, and then press d) ~ f) to operate until it meets the requirements;
- g) Confirm whether the water separation index of the sample after preparation conforms to GB 6537, DEF STAN 91-91, JIG AFQRJOS or ASTM D 1655 Requirements. If it does not meet the requirements, you can reduce the amount of mother liquor one by one, and then press d) ~ g) to operate until it meets the requirements;