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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

MH/T 6116-2018

**Test method for flammability of oil burners of magnesium alloy
structure for aviation seats
(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 is under the jurisdiction of the China Academy of Civil Aviation Science and Technology.

Drafting organization of this standard. The Second Research Institute of Civil Aviation Administration of China.

1 Scope

This standard specifies the test method for testing the flammability of magnesium alloy structural materials for aviation seats using high-strength, open flames.

This standard applies to the assessment of the flammability of magnesium alloy structural materials for aviation seats.

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 Pieces. For undated references, the latest version (including all amendments) applies to this document.

CCAR-25-R4 Airworthiness Standard for Transport Aircraft

3 Terms and definitions

The following terms and definitions apply to this document.

Magnesium alloy

Based on magnesium, solid alloy composed of other elements (such as zinc) or rare earth elements (such as yttrium) is added, and the magnesium content in the alloy (The mass ratio) exceeds 10%.

Melting

The specimen is sufficiently relaxed to cause the main part to break freely and fall to the tray.

Note: Bending, twisting or unilateral sagging is not considered as melting.

Ignition

When the sample is burned by flame, it is the first time to observe the appearance of the

sample which can be distinguished from the yellow-orange flame produced by the surrounding burner.

A very bright and intense blue-white flame.

Burning

The sample starts to ignite and lasts for more than 10 s.

Note: Does not include the interruption of combustion and reignition.

The percentage weight loss the difference between the weight of the sample before the test and the total weight of the sample and drips after the test, as a percentage of the weight of the sample before the test.

4.1 Sonic burner

See Appendix A for the structure of the sonic burner.

4.2 Fuel type

Aviation kerosene that meets the requirements of GB 6537 and other fuels that can meet the flame temperature should be used.

4.3 Sample device

The schematic diagram of the sample device is shown in Figure 1 and Figure 2. The sample device should be able to move and position the sample to the designated position at the front of the burner.

4.4 Pallet

The test device should be equipped with a tray of appropriate size, with a layer of dry talc on the bottom of the tray to prevent the molten magnesium alloy from splashing back. The thickness of the stone powder is 6 mm. The size of the tray is at least 410 mm (length) x 200 mm (width) x 38 mm (depth), and the sample can be directly installed on the tray both sides of the plate.

4.5 Talc

The composition of talc is magnesium silicon-based salt. Before each test, the talc powder should be kept dry and stored in a sealed plastic bag to avoid moisture absorption.

4.6 Specimen fixture

The sample holder should make the sample horizontally installed and stable, and the designated position in front of the burner, see Figure 3.

4.7.1 Thermocouple

Seven thermocouples should be used to calibrate the flame temperature of the burner. The thermocouple diameter is 3.2 mm (0.125 in), ceramic encapsulated, 310 not Stainless steel sheath, type K (nickel-chromium-nickel aluminum), grounded with 24 American standard wire gauge (AWG) wire or equivalent wire. Fix seven thermocouples in one A thermocouple rake is formed on the steel mounting plate to verify the consistency of the flame. The length from the end of the thermocouple to the mounting plate is at least 102 mm, See Figure 5.

Figure 5 Schematic diagram of thermocouple installation (top view and side view)

4.7.2 Data collector

Use a recorder or computer data acquisition system with a suitable range and calibrated to measure and record the output of the thermocouple.

4.7.3 Timer

A stopwatch or other timer with an allowable error of ± 1 s/h should be used to measure the burning time of the burner, the ignition time of the sample and the self-extinguishing time.

4.7.4 Anemometer

Use a portable impeller or hot wire anemometer to measure wind speed.

4.7.5 Digital display electronic scale

An electronic scale with a suitable range should be used to weigh the weight of the sample before and after the test, as well as the molten or solidified material that drops into the tray the weight of. The resolution of the digital display electronic scale is at least 0.01 kg, and the accuracy is at least 0.01 kg.

4.7.6 Laboratory

The laboratory shall have measures to reduce or eliminate the influence of test fluctuations caused by air disturbance. The area of the laboratory is at least 305 cmx305 cm.

4.7.7 Ventilation hood

The test room should be equipped with a ventilating hood to remove the exhaust gas generated by the combustion of the sample during the test.

5.1 Sample configuration

The sample should be made of the same material as the actual magnesium alloy structure of the aviation seat, and its material can represent the main seat frame components (such