

Surface Treatment



TARTARIC SULPHURIC ACID ANODIZING (TSA)

Airbus has developed a chrome free and therefore REACH-conform alternative to chromic acid anodizing for protection of aluminum parts: Tartaric Sulphuric Acid anodizing (TSA).

Just as the well known process of chromic acid anodizing, TSA is a type of anodizing that results in a thin oxide layer with optimal adhesion properties and a good corrosion resistance. Like all types of anodizing, aluminum is converted into aluminum oxide, as a result of which optimal adhesion is guaranteed. TSA is applied if strict requirements are imposed on corrosion resistance and sulphuric anodizing is not an option due to the negative effects on the fatigue strength.

The TSA-process is mainly applied to aerospace components.

A large number of fine pores occur in the oxide layer during the treatment which are normally not sealed after anodizing, because most of the time TSA is used as a pre-treatment before paint application.

Applications

Aerospace industry – mainly Airbus related products

Characteristics

- The fatigue strength of the base material is hardly affected.
- High corrosion resistance.
- As a result of the excellent adhesion characteristics, TSA is a suitable pretreatment for further coating processes.
- Small layer thickness (2 to 7 μm), as a result of which dimensional impact is negligible.

TSA anodizing advantages compared to chromic acid anodizing

- Less environmental impact.
- Chrome free process, REACH-conform alternative process.

Specifications

AIPS 02-01-003

MIL-A-8625, Type IC

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