SLOVENSKI STANDARD
SIST EN 3792:2022

01-julij-2022

Aeronavtika - Anaerobne polimerizirajoče zmesi - Tehnična specifikacija

Aerospace series - Anaerobic polymerisable compounds - Technical specification

Luft- und Raumfahrt - Anaerobe polymerisierbare Klebstoffe - Technische Lieferbedingungen

Série aérospatiale - Composés polymérisables anaérobies - Spécification technique

Ta slovenski standard je istoveten z: **EN 3792:2022**

ICS:

49.025.99	Drugi materiali	Other materials

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EUROPEAN STANDARD
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EN 3792

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ICS

English Version

Aerospace series - Anaerobic polymerisable compounds - Technical specification

Série aérospatiale - Composés polymérisables anaérobies - Spécification technique

Luft- und Raumfahrt - Anaerobe polymerisierbare Klebstoffe - Technische Lieferbedingungen

This European Standard was approved by CEN on 26 August 2019.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 3792:2022) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2022, and conflicting national standards shall be withdrawn at the latest by November 2022.

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1 Scope

This document specifies the requirements for a range of one part anaerobic polymerisable compounds which polymerises upon the exclusion of oxygen and activation by a metal surface.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 3793, *Aerospace series — Anaerobic polymerisable compounds — Test method — Determination of static shear strength* 1)

EN 3794, *Aerospace series — Anaerobic polymerisable compounds — Test method — Determination of torque strength on threaded fasteners* 1)

EN 3795, *Aerospace series — Anaerobic polymerisable compounds — Test method — Determination of freedom from excessive cure rate* 1)

EN 3796, *Aerospace series — Anaerobic polymerisable compounds — Test method — Determination of ability of anaerobic polymerisable compounds to set on metal surfaces* 1)

ISO 3104, *Aerospace series — Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity*

ASTM-D 2196, *Standard Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational Viscometer* 2)

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at http://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

3.1
activator
substance used in small proportions to increase the reaction rate of chemical systems

3.2
anaerobic polymerisable compound
polymerisable composition which polymerises upon the exclusion of oxygen and activation by a metal surface

1) Published as ASD-STAN Standard at the date of publication of this standard by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), http://www.asd-stan.org/

2) Published by: ASTM National (US) American Society for Testing and Materials http://www.astm.org/

3.3
batch
quantity of homogeneous compound prepared ready for use from the same processing operation with traceability to its individual constituent components

3.4
curing
increasing the cohesive strength by chemical change

3.5
fluorescence
property of absorbing of one wavelength and emitting light of another wavelength

Note 1 to entry: The phenomenon ceases when the source of light is cut off.

3.6
shear strength
force necessary to bring the cured compound to the point of failure by means of forces applied in a shear mode

3.7
thixotropy
decrease of the apparent viscosity under shear stress followed by a gradual recovery when the stress is removed

Note 1 to entry: The effect is time-dependent.

3.8
thixotropic index
ratio of the viscosity measured at one shear rate to that at another shear rate

Note 1 to entry: The shear rates by convention, differ by a factor of 10; this is achieved by changing the rotational speed of the viscometer by a factor of 10.

3.9
torque strength
force necessary to rotate a nut on a bolt where engaged threads are coated with cured compound

3.10
viscosity
property of a material to resist flow in shear

4 Requirements

4.1 Composition

The compounds shall consist essentially of acrylic esters of a polyhydroxy compound. They shall be either of the following:

a) generally clear homogenous liquids free from particulate solids;

b) materials containing solids in suspension.

4.2 Colour and visual appearance

4.2.1 When tested in accordance with Annex A, the compounds shall be substantially uniform in colour and free from contamination and foreign matter.

4.2.2 When fluorescence is a requirement of the material standard, the compounds shall be tested in accordance with Annex B and shall be seen to fluoresce.

4.3 Viscosity

4.3.1 When tested in accordance with ISO 3104 and Annex C, the viscosity of the components shall comply with the material standard.

4.3.2 When tested in accordance with Method B of ASTM-D 2196 and Annex C, the thixotropic index shall comply with the material standard.

4.4 Torque strength

4.4.1 When tested in accordance with EN 3794, the torque strength at (23 ± 2) °C shall comply with the material standard.

4.4.2 When tested in accordance with Annex D, the torque strength after 1 000 h at 100 °C and 150 °C shall comply with the material standard.

4.4.3 When tested in accordance with Annex E, the torque strength after 168 h in boiling water shall comply with the material standard.

4.4.4 When tested in accordance with Annex F, the torque strength after 2 h at (- 55 ± 2) °C shall comply with the material standard.

4.5 Static shear strength

4.5.1 When tested in accordance with EN 3793, the static shear strength at (23 ± 2) °C shall comply with the material standard.

4.5.2 When tested in accordance with Annex G, the static shear strength after 1 000 h at 100 °C and at 150 °C shall comply with the material standard.

4.6 Stability

The compounds shall remain stable (not polymerise) at 100 °C for a minimum time as stated in the material standard. The stability at 100 °C shall be determined in accordance with Annex H of this specification.

4.7 Freedom from excessive cure rate

When tested in accordance with EN 3795, the period for which the compound is free from excessive cure shall comply with the material standard.

4.8 Ability to set on a zinc surface

The compounds shall have the ability to set on a zinc surface within a time as specified in the material standard. The method of determination shall be in accordance with EN 3796.

4.9 Shelf life

4.9.1 When stored at a temperature of less than 25 °C in the original unopened containers, the shelf life of the compound, measured from the date of dispatch by the manufacturer, shall be at least 12 months.

4.9.2 At any time during the shelf life, the compounds shall comply with the property requirements of the material standard.

5 Quality assurance

5.1 Manufacturer approval

See EN 9100.

5.2 Product qualification

See EN 9133.

5.2.1 In addition to the requirements of EN 9133, the manufacturer or supplier wishing to have his product(s) qualified shall submit them to a mandated body as designated by ASD-CERT:

a) samples of the anaerobic polymerisable compound(s) for which qualification is sought;

b) test results for the properties listed in the material standards for the same batch of material from which the submitted samples have been obtained;

c) full instructions for use of the compounds.

5.2.2 All the tests listed in the specification for which qualification is sought shall be carried out on the samples provided to the mandated body by the manufacturer.

5.3 Inspection and test requirements

An anaerobic polymerisable compound shall be tested as applicable in accordance with the requirements given in column Q, Table 1, and shall comply with the properties of the material standard.

6 Acceptance

6.1 Manufacturing responsibility

The manufacturer shall be responsible for the quality and relevant procedures for all inspection and test requirements as specified in 6.3.

6.2 Product acceptance

Each batch of material released by the manufacturer shall be deemed to comply with this specification and the material standard.

6.3 Inspection and test requirements

6.3.1 Every batch of material shall be inspected and tested to the requirements of column A Table 1.

6.3.2 If the sample test fails to meet any of the requirements of the material standard, then 2 (two) further samples may be tested from that batch. Batch samples shall comply with all the requirements in 6.3.1 before the batch can be released as conforming to the requirements of the material standard.

7 Packaging

7.1 The compound shall be packed in sound, clean and dry containers which, after packing, shall hold an agreed quantity.

7.2 The nature of the container and the ullage after packing shall be such as to prevent premature solidification of the material during storage.

8 Marking

Each container and its matching carton shall be legibly and durably marked with the following details:

a) container:

- material standard number;
- manufacturers name or trade mark;
- batch number.

b) carton:

- product description;
- material standard number;
- batch number;
- name or trade mark of manufacturer;
- dates by which the material should be used;
- manufacturer's reference for appropriate accelerator;
- where the material contains a suspension instructions for shaking of the container shall be included.

NOTE Attention is drawn to statutory regulations relating to the marking of anaerobic polymerisable compounds.

9 Certificate of conformity

All material supplied shall be accompanied by a certificate of conformity referring to the appropriate material standard.