Certificate no.:
TAK00002KF

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Polyester Resins

with type designation(s)
AROPOL® K 530 Series Isophthalic Polyester Resin

issued to
ALTA Performance Materials Oy
Kulloo, **Finland**

is found to comply with
DNV class programme DNV-CP-0083 – Type approval – Polyester resin, vinylester resin, gelcoat and topcoat

Application:

Grade 1 resin for use in marine vessels.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Hamburg** on **2025-10-17**
This Certificate is valid until **2030-10-16**.
DNV local unit: **Finland CMC**

Approval Engineer: **Gisle Hersvik**

for **DNV**

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This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

AROPOL® K 530 Series Isophthalic Polyester Resin

Approved Variants

AROPOL® K 530 XXXXXXXX Pre-accelerated, Thixotropic
AROPOL® K 530 XXXXXXXX Pre-accelerated
AROPOL® K 530 XXXXXXXX Thixotropic
where XXXXXXXX refers to colour, gel time, viscosity modification.

The following properties have been verified by type testing of cured resin:

Property	Test Method	AROPOL® K 530 H	unit	
Tensile Strength	ISO 527	72.7	MPa	mean
Fracture Elongation	ISO 527	2.3	%	mean
Barcol Hardness	ASTM D2583	42.8	-	mean
HDT	ISO 75 (Method A)	79.3	ºC	mean
Water Absorption	ISO 62	88.1	mg	mean
Density (cured)	ISO 1183-1	1.19	g/cm^3	mean
Curing procedure used for Type Testing		24 hrs at room temperature, 24 hrs at 60ºC		

mean = mean value of test results

Manufactured by

ALTA Performance Materials Hispania S.L., Partida Povet 37, 12580 Benicarlo, Spain

DNV local station: Barcelona

ALTA Performance Materials Finland Oy, Muovitie 35, FI-06850 Kulloo, Finland

DNV local station: Helsinki

ALTA Performance Materials France SAS, ZI NORD 8 rue des Fontangues, 55400 Etain, France

DNV local station: Paris

Responsibility

The Company (stated on the front page of this Certificate) takes the responsibility that both design and production are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

Application/Limitation

The resin complies with the applicable requirements of DNV and is compatible to the fibres, adhesives and core materials, as relevant.

The resin properties do not fully meet ISO 12215-1 Type A / DNV Grade 1 requirements, but will be accepted for use where Grade 1 resin normally will be specified, with the following remarks for consideration:

- fracture elongation by testing is reported slightly less than 2.5% (i.e. 2.3%, average), and
- water absorption is reported higher than 80 mg (i.e. 88.1 mg, average), and
- the product has been used in the manufacture of marine vessels for decades with proven track record.

Any significant changes in design and / or quality of the material will render the approval invalid.

Type Approval documentation

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

Product/package shall be marked with *manufacturer's name:* **ALTA Performance Materials**, *place of production, type designation* and *date of production/batch number*.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical assessments (for Certificate Retention / Certificate Renewal) shall be performed according to DNV-CP-0338.

A production site with a valid Approval of Manufacturer (AoM) certificate in accordance with DNV-CP-0425 for material in question may be exempted from the obligation concerning periodical and renewal assessments.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE