

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Polyester Resins**with type designation(s)
2157BQT and 2157BQTNS

Issued to

Yong Shun Chemical Co., Ltd.
Taoyuan City, Taiwan

is found to comply with

DNV GL class programme DNVGL-CP-0083 – Type approval – Polyester resin, vinylester resin, gelcoat and topcoat
DNV GL rules for classification – High speed and light craft
DNV GL standard DNVGL-ST-0342 – Craft**Application :****Grade 1 resin for use in marine vessels according to stated Rules/Standards.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2017-04-24**This Certificate is valid until **2022-04-23**.for **DNV GL**DNV GL local station: **Kaohsiung**Approval Engineer: **Gisle Hersvik**

Martin Strande
Head of Section

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.



Product description

2157BQT and 2157BQTNS; Isophtahlic polyester resins. For hand lay-up and spray-up moulding.

The only difference between 2157BQT and 2157BQTNS is that 2157BQT contains parafin.

The following properties have been verified by Type Testing of cured resin:

Property	Test Method	2157BQT / 2157BQTNS		
Fracture Elongation	ISO 527	4,0	%	mean
Tensile Strength	ISO 527	60,4	MPa	mean
Water Absorption	ASTM D570	27,2	mg	mean
HDT	ISO 75	73	°C	mean
Barcol Hardness	ASTM D2583	38,5	-	mean
Density	ISO 1675	1,18	g/cm ³	mean
Curing procedure used for Type Testing		88 hrs at room temperature		

Type Approval documentation

Tests carried out

Type Testing carried out according to **Type Approval documentation**.

Marking of product

Product shall be marked with *manufacturer's name*; **Yong Shun Chemical Co., Ltd., Taoyuan, Taiwan** and *type designation*; **2157BQT** or **2157BQTNS**.

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 GL 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 Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and DNV GL Type Approval Certificate.

END OF CERTIFICATE