

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Insulation Materials for Gas Carriers**with type designation(s)
CN Foam 40 a/b HFC

Issued to

**Jiangsu Changneng Energy-saving New Materials Science &
Technology CO.,LTD.
Zhangjiagang, China**is found to comply with
DNV GL rules for classification – Ships**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed
by DNV GL.**Issued at **Hamburg** on **2017-10-11**This Certificate is valid until **2022-10-10**.DNV GL local station: **Jiangyin**for **DNV GL**Approval Engineer: **Guido Michalek**

**Thorsten Lohmann
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

Two Component Cryogenic Polyurethane Insulation System

Approved variants

Component A: LSP278-02 (premixed polyol)

Component B: Methylene diphenyl diisocyanate (MDI)

Type Approval documentation

Material Properties

Raw materials

Properties	Standard	LSP278-02	MDI	Unit
Viscosity	ISO 3219	150 - 350	150 - 250	mPa·s
Density	ISO 1675	1.05 - 1.20	1.18 - 1.28	g/cm ³

Foam properties

Density: $\geq 40 \text{ kg/m}^3$ according to ISO 845

Thermal conductivity at RT: ≤ 0.024 according to ISO 8302

Flame retardance: B2 according to DIN 4102-1

Limitation

- Approved for LNG, LPG and LEG cargo tanks
- Application has to be carried out in accordance with the work instruction

Assesed production site

No. 18 Qinghai Road Yangtze River
International Chemical Industry Park
Zhangjiagang Jiangsu
P.R. China

Periodical assessment

A production site with a valid Approval of Manufacturer (AoM) certificate for material in question is exempted from the obligation concerning retention and renewal assessments.
For manufacturer without a valid AoM a periodical assessment after 2.5 years and at renewal after 5 years is required.

END OF CERTIFICATE