NanoGels
ADVANCED MATERIALS

Efficient by Design | Green by Nature | Safe by Engineering

ADVANCED AEROGEL INSULATION SYSTEMS

HIGH PERFORMANCE. MAXIMUM EFFICIENCY.

NanoGels water-based, environmentally friendly manufacturing process enables high-performance aerogel insulation with a more sustainable production approach.



Our advanced aerogel insulation solutions deliver superior thermal performance, energy efficiency, and safety for the world's most critical applications.

DESIGNED FOR DEMANDING INDUSTRIES

ENERGY

OIL & GAS

SUPERIOR THERMAL PERFORMANCE

Up to 5x better insulation performance than conventional materials.

ENERGY EFFICIENCY

Reduce energy loss and operational costs significantly.

ENHANCED SAFETY

Lower surface temperatures for improved personnel protection and reliability.

LONG-TERM DURABILITY

Reliable performance in extreme conditions for longer asset life.



Welcome To NANOGELS Advanced Materials

NANOGELS is your dedicated strategic partner in the field of flexible aerogel materials for thermal and acoustic applications. NANOGELS provide integrated solutions and expertise in advanced aerogel materials designed primarily for the oil & gas and energy sectors to mitigate corrosion under insulation (CUI) and provide thermal insulation.

NANOGELS team has been working for 10 years on thermal insulation solutions for very high and very low temperatures for industrial applications including acoustic insulation. The company is fully equipped to offer aerogel solutions to any size project with unparalleled product support and customer service. NANOGELS continue to reinvest in innovation to ensure it is supplying customer the latest technologies with the most energy efficiency.

NANOGELS mission is to provide customers and end-users with high quality aerogel products, unparalleled customer services and professional technical advice. We have the ability to help our customers cope with the insulation challenges in a variety of applications within both industrial and construction sectors.

Health, Safety and Environment is built into everything we do!

NANOGELS prioritizes creating healthy and safety workspaces across all of our locations, ensuring the well-being of employees, and customers. Our commitment to quality, safety, and environment is reflected in our certifications including ISO 9001 QMS, 45001 OHSAS, and ISO 14001 EMS.



WHAT IS AEROGEL?

Aerogel, often called "frozen smoke" or “blue smoke,” is a synthetic, porous material derived from a gel where the liquid is replaced with a gas. It is 95-99% air, yet it is a solid. It is the lightest known solid material. Aerogel contains nano-sized porous structure, this structure gives it extraordinary properties like low density, low thermal conductivity, high porosity, and high surface area. Unlike traditional insulation products, silica aerogels have shown the unique characteristics that answers the world's toughest insulation needs.

In practical use, pure aerogel (which is fragile) is usually reinforced into a flexible, durable blanket using a fabric or fiber matrix. This "aerogel blanket" is the form used for most insulation requirements. Aerogel insulation blanket is a flexible, thin, and highly effective thermal insulation product. Its insulating power comes from this unique nanostructure: pores so tiny (nanometers wide) that air molecules cannot easily move through them, effectively eliminating heat transfer by convection. This gives aerogel the highest insulating value (R-value) per inch of any solid material—roughly 2-4 times better than fiberglass.



Section	1	2	3	4	5	6
Material	Mild Steel Pipe	NanoSolar Aerogel Insulation	Mineral Wool Insulation	Cellular Glass Insulation	Calcium Silicate Insulation	Perlite Insulation
Thickness	—	30 mm	80 mm	120 mm	120 mm	150 mm
Thermal Conductivity (at 25°C)	45 – 60 W/m·K	0.013 – 0.021 W/m·K	0.035 – 0.045 W/m·K	0.045 – 0.060 W/m·K	0.045 – 0.085 W/m·K	0.050 – 0.070 W/m·K
Max. Service Temperature	550°C+	650°C	650°C	430°C	1000°C	760°C

Note: Thicknesses are nominal. Thermal conductivity values are typical ranges.

WHERE IS AEROGEL INSULATION USED?

Unlike traditional insulation materials like fiberglass/mineral wool, aerogel is not an everyday insulation. It's a specialist solution for demanding applications where space, extreme temperatures, or performance are critical.

1. Industrial & Energy

Oil & Gas Pipelines:

Insulating complex pipelines, valves, and flanges to prevent heat loss and maintain stable insulation performance at temperatures up to 650°C.

Refineries & Petrochemical assets:

Insulating high-temperature steam pipes in crowded spaces where thick fiberglass/mineral wool won't fit.

LNG & FPSOs:

Insulating pipes and tanks that hold liquid gas at -162°C.

Power Plants:

Insulating turbines and steam lines to enhance efficiency.

Marine:

Used for lightweight, high-performance thermal insulation for bulkheads and engine rooms in ships and navy vessels.

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2. Building & Construction

High-Performance buildings:

Achieving extreme energy efficiency in limited wall, or roof cavities.

Curtain Wall Systems:

Insulating behind glass and metal panels in skyscrapers where space is tight.

Thermally Broken Window Frames:

Achieving extreme energy efficiency in limited wall, or roof cavities.

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3. Aerospace & Transportation

Spacecraft:

Used for over 20 years to protect sensitive electronics and astronauts from the -270°C vacuum of space.

Automotive:

Insulating battery packs in electric vehicles (EVs) for thermal runaway protection (preventing fire spread between cells) and for reducing heat loss from exhaust systems in cars.

4. Apparel & Consumer Goods

Extreme-Weather Jackets:

Used by mountaineers as a thin, incredibly warm mid-layer.

Footwear:

Insulating pipes and tanks that hold liquid gas at -162°C.

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5. Special Applications

Cold Chain Logistics: :

Lightweight shipping containers for medicines and perishable food in hot climates, reducing the need for active refrigeration.

Fireproof Safes & Storage:

Linings for safes to protect documents and electronics from high heat.

ADVANTAGES AND KEY CHARACTERISTICS



Superior Hydrophobicity



Space and Weight Saving



Corrosion Under Insulation (CUI) Mitigation



Non – Combustible & Fire resistant

Environmentally Safe and Reusable

Exceptional Thermal Insulation at High Temperatures

Ease of Installation

Mechanical Durability and Dimensional Stability



WHY CHOOSE NANOGELS?

Choosing the right insulation for an oil & gas asset is critical—it directly impacts your operating costs, project timeline, asset integrity, and safety. For a customer, choosing NanoGels means choosing a solution that lowers total ownership cost, accelerates project delivery, and mitigates major operational risks like CUI and unplanned downtime.

Schedule overruns kill project ROI. NanoGels aerogel blankets are extremely low powder shredding rate, flexible, easy to cut, wrap around complex fittings, and install without specialized tools.

CUI is a pervasive, expensive problem in refineries and petrochemical plants. Traditional insulation products absorb and trap moisture against pipe surfaces, accelerating corrosion. NanoGels aerogel products are hydrophobic (water-repelling) yet breathable (water vapor escape).

NanoGels ever-growing portfolio of groundbreaking products and end-to-end solutions is backed by unparalleled quality service. With an extensive distribution and sales network operating for more than 10 years across the MENA Region, our dedicated teams provide local expertise and high levels of support in finding the right solutions for your needs. For EPC contractors, specifying NanoGels eliminates "material failure" warranty risk. The products have been battle-tested in the harshest environments—deepwater tropical, hot and humidity, and refinery process units.

PRODUCTS

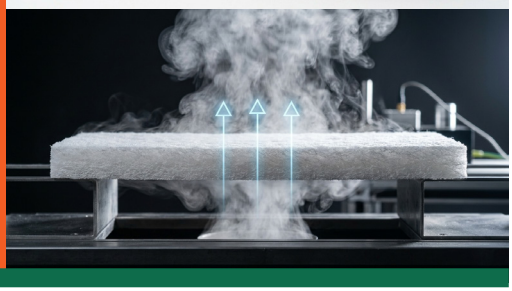
The company's comprehensive and advanced aerogel insulation product range consists of aerogel blankets, and pre-insulated pipes for hot pipelines. With an operating temperature of -200 °C to +650 °C, two main product lines **NanoSolar** and **NanoPolar** can be used in different industrial and construction sectors. The two core product lines are engineered to solve the world's most demanding thermal insulation challenges.

NanoSolar

NanoSolar is a high-performance fibre reinforced silica aerogel blanket insulation engineered for high-temperature applications in industrial and construction sectors.
The superior hydrophobicity of the product mitigates corrosion under insulation (CUI) and maintains R-value. NanoSolar is fully compliant with ASTM C1728 Type III, Grade 1A (Standard Specification for Flexible Aerogel Insulation).
Ideal for insulating piping, equipment, and exhaust ductwork to reduce heat loss, prevent corrosion, enhance energy efficiency, and sound control in industrial, offshore, building & construction facilities.

- Superior Thermal Performance
- Thin And Space-saving
- Hydrophobicity & High Vapor Permeability
- Ease Of Installation
- High-temperature Stability
- Non-combustible
- Extremely Low Powder Shredding Rate
- Acoustic Performance





NanoPolar

NanoPolar is an exceptional insulation blanket made from silica aerogel combined with a glass fibre needled blanket. The product is specifically designed for cryogenic LNG systems and sub-ambient applications in the oil and gas industry and other industrial applications. NanoPolar is ASTM C1728 compliant, specifically adhering to Type I, Grade 1B requirements.

- Superior Thermal Performance
- Thin And Space-saving
- Hydrophobicity
- Ease Of Installation
- Stable At Low Temperatures
- Acoustic Performance
- Integrated Vapor Barrier
- Extremely Low Powder Shredding Rate



OUR CREDENTIALS

At NanoGels, we are dedicated to helping our clients achieve maximum operational efficiency by delivering robust, high-performance, trusted, and latest tested solutions.



Certificate of Registration

GCPL hereby certifies that

Reg. No.: AB30II162024618

NANOGELS ADVANCED INSULATING MATERIALS - L.L.C

P.O. Box 91485, ICAD - 3, Abu Dhabi, United Arab Emirates.

has been independently assessed and is compliant with the requirement of

ISO 9001:2015 Quality Management System

This certificate is applicable to the following product or service ranges:

WHOLESALE OF INSULATING MATERIAL TRADING.

Initial Issue Date : 03. Mar. 2026 — Current Issue Date : 03. Mar. 2026
1st Surveillance Date : 02. Mar. 2027 — 2nd Surveillance Date : 02. Mar. 2028
Expiry Date : 02. Mar. 2027 — Valid Period : 03. Mar. 2026 ~ 02. Mar. 2029

*(Certificate validity is subject to clearing successful surveillance audit. Next surveillance audit is due on or before 02/Mar/2027).

Globus is accredited by United Accreditation Foundation Inc., Status of certificate can be verified on www.gcert.co

CB-MS-1713

Signed for and on behalf of GCPL
Dated: 03/Mar/2026

Accreditation Board: United Accreditation Foundation Inc, 400 North Center Dr Ste 202 Norfolk, VA 23502, USA
Certification Body: Globus Certifications Private Limited - www.gcert.co | operations@gcert.co

Surveillance audits shall be conducted at least once a calendar year, except in re-certifition years. This is to certify that the Management Systems of this company has been found to confirm to the above. If the certified client does not allow surveillance, re-certification audits, certificate should be returned to GCPL. This certificate remains the property of GCPL and this certificate is recognized by GCPL and must be returned on the request. For surveillance audit please visit at www.gcert.co or write to operations@gcert.co The CIN no. of the Globus Certifications Private Limited is U74900DL2008PTC179537.

Globus Certificate of Registration — QUALITY SYSTEM CERTIFICATE



SGS

TEST REPORT

No.: SHIN2601000266CM07_EN Issue Date: 2026-03-30 Page: 1 of 3

CUSTOMER NAME: NANOGELS ADVANCED INSULATING MATERIALS LLC
ADDRESS: P.O BOX 91485, ABU DHABI, U.A.E

Sample Name : NANOPOLAR
Product Specification : ASTM C1728-25
Material : Flexible Aerogel Insulation Blanket

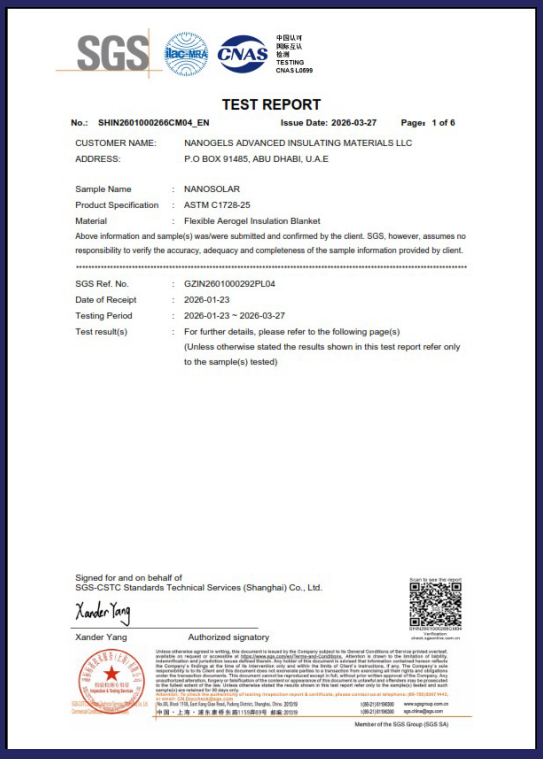
Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

SGS Ref. No. : GZIN2601000292PL07
Date of Receipt : 2026-01-23
Testing Period : 2026-01-23 ~ 2026-03-30
Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Xander Yang — Authorized signatory

Member of the SGS Group (SGS SA)



SGS

TEST REPORT

No.: SHIN2601000266CM04_EN Issue Date: 2026-03-27 Page: 1 of 6

CUSTOMER NAME: NANOGELS ADVANCED INSULATING MATERIALS LLC
ADDRESS: P.O BOX 91485, ABU DHABI, U.A.E

Sample Name : NANOSOLAR
Product Specification : ASTM C1728-25
Material : Flexible Aerogel Insulation Blanket

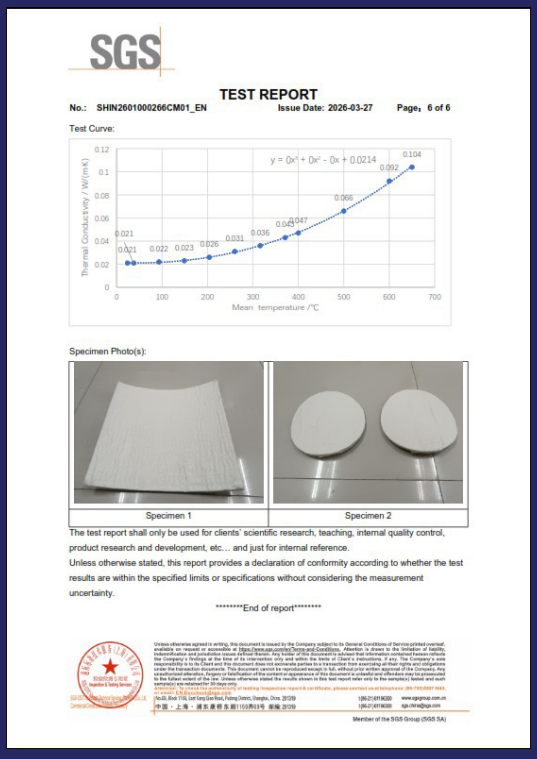
Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

SGS Ref. No. : GZIN2601000292PL04
Date of Receipt : 2026-01-23
Testing Period : 2026-01-23 ~ 2026-03-27
Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Xander Yang — Authorized signatory

Member of the SGS Group (SGS SA)



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TEST REPORT

No.: SHIN2601000266CM01_EN Issue Date: 2026-03-27 Page: 6 of 6

Test Curve:

Specimen Photo(s):

Specimen 1 | Specimen 2

The test report shall only be used for clients' scientific research, teaching, internal quality control, product research and development, etc... and just for internal reference.

Unless otherwise stated, this report provides a declaration of conformity according to whether the test results are within the specified limits or specifications without considering the measurement uncertainty.

********End of report********

Member of the SGS Group (SGS SA)

NanoGels ADVANCED MATERIALS

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