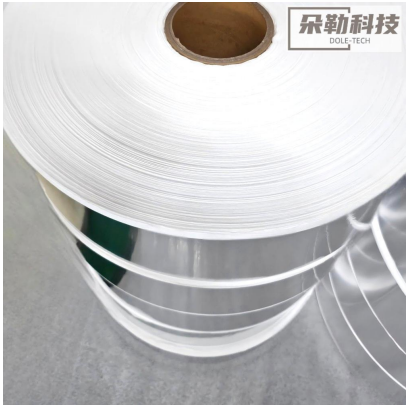


WHAT 'S THIS?



Multilayer insulation material (MLI)

MLI systems are engineered to minimize thermal radiation flux and deliver optimal thermal insulation performance through:

- Radiant barrier integration: Utilization of high-purity aluminum foil as the primary reflective layer
- Spacer material selection: Incorporation of Super Insulation Paper to establish continuous thermal breaks
- Layered composite architecture: Engineered void structure with multidirectional fiber alignment
- Material efficiency: Minimizes scrap generation through optimized layer nesting methodology
- Process optimization: Achieves 25% higher throughput compared to conventional composite assembly techniques

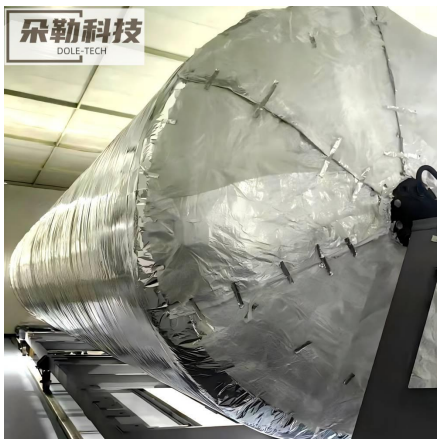
WHAT 'S THE PERFORMANCE?

Performance	Index
Thickness (mm) - Glass fiber paper	≤ 0.06
Thickness (mm) - Aluminum Foil	≤ 0.0065
Basic Weight (g/m2) - Glass fiber paper	11~13
Basic Weight (g/m2) - Aluminum Foil	16~ 18
Thermel Conductivity (W/m.k)	7.45*10 ⁻⁵
Tensile Strength (kN/m)	≥ 0.03
Moisture Content (%)	≤ 0.15
Outgassing Rate (Pa,m3/ (s.g)	8.6*10 ⁻⁹
Air permeability (mm/s)	≥120

WHAT 'S THE Application?



WHAT 'S THIS?



Cryogenic Insulation Blankets (CB)

The blankets are composed of Super Insulation Paper & High-purity aluminum foil .

These components are configured through CAD parametric modeling to meet customer-specified: Layer stacking sequences ,Geometric dimensions, Surface topography profiles.

- Direct conformal wrapping: Eliminates the need for specialized winding equipment
Enables seamless application onto cryogenic storage vessels (LNG tanks, dewars, etc.)
- No secondary processing: Maintains material integrity during installation, Reduces thermal bridging through optimized layer alignment
- Labor productivity improvement: Reduce assembly working hours by 30%, compared to traditional roll-wrapping processes
- Waste minimization: Adaptive nesting algorithms reduce material scrap by 15%

WHAT 'S THE PERFORMANCE?

Performance	Index
Thickness (mm) - Glass fiber paper	≤ 0.06
Thickness (mm) - Aluminum Foil	≤ 0.0065
Basic Weight (g/m ²) - Glass fiber paper	11~13
Basic Weight (g/m ²) - Aluminum Foil	16~ 18
Thermal Conductivity (W/m.k)	7.45×10^{-5}
Tensile Strength (kN/m)	≥ 0.03
Moisture Content (%)	≤ 0.15
Outgassing Rate (Pa.m ³ / (s.g)	8.6×10^{-9}
Air permeability (mm/s)	≥ 120

WHAT 'S THE Application?



WHAT 'S THIS?



Silver-exchanged zeolite

HKL-AG400 is a A synthetic alumina-silicate zeolite modified with silver cations, designed for:

1. Removing hydrogen from cryogenic vacuum systems
 2. Selectively removing halogens from gas streams
 3. Catalyzing hydrogen-oxygen recombination reactions
- Inorganic framework: Aluminum-silicate lattice with optimized composition
 - Uniformly dispersed silver ions (Ag^+)
 - Large uniformly sized internal cavities and macroscopic pores for efficient contaminant trapping
 - Exceptional contaminant adsorption capacity
 - Thermal stability in extreme environments
 - Meets industry standards for vacuum getters and catalysts

WHAT 'S THE PERFORMANCE?

Item		Index
Appearance		Grayish white Spherical particle
size (mm)		1.0-1.5
Static water adsorption [(35±1)°C, saturated salt water, 24h]/%≥		10%
crush-resistant	Average radial crush resistance force/N≥	1.2
	Relative standard deviation of crush resistance ≤	0.3
Loose packing bulk density (g/mL)≥		0.8
Vibrational bulk density/(g/mL)≥		0.83
Binder (acid resistance) content wt%≤		20%
Thermal stability/°C≤		500
Heat of adsorption/(kJ/kg.H2O)≤		3000
Silver content wt%≥		41
Combustibility		Non-flammable
Water content of packaged goods [(160±10)°C,1h] wt%≤		4%
Abrasion rate wt%≤		0.3
Static hydrogen absorption capacity (adsorption temperature ± 1) (Pa.L/g)		2.07*10 ³

WHAT 'S THIS?



Molecular Sieve 5A

Molecular Sieve 5A, a crystalline aluminosilicate, features 5 Å (0.5 nm) pores. This size selectively adsorbs molecules with kinetic diameters below 5 Å, enabling efficient separation and purification.

Its structure comprises a 3D network of SiO₄ and AlO₄ tetrahedra, with calcium ions balancing the negative charge from aluminum, defining its pore size and adsorption traits.

Molecular Formula: 3/4CaO·1/4Na₂O·Al₂O₃·2SiO₂·9/2H₂O SiO₂/Al₂O₃ ≈ 2

CAS: 1318 - 02 - 1

Pore size: About 5Å (1Å = 0.1nm)

Standard: CE and GB/T13550 - 2015

WHAT 'S THE PERFORMANCE?

Item	Unit	Pellet	
Appearance	Beige, faint yellow, No mechanical impurities		
Diameter	mm	1.8 - 2.5	3.0 - 5.0
Bulk density	g/ml	≥0.70	≥0.68
Granularity	%	≥98.00	≥98.00
CO ₂ Adsorption	ml/g	≥14.5	≥14.5
Static H ₂ O Adsorption	%	≥22	≥22
Crush strength	N	≥35.00	≥80.00
Static hexane Adsorption	wt%	≥12.5	≥12.5
Abrasion Rate	wt%	≤0.1	≤0.1
Moisture content	%	≤1.5	≤1.5

WHAT 'S THIS?



Molecular Sieve 13X

Molecular Sieve 13X, also known as sodium X - type molecular sieve, is a highly crystalline alkali - metal aluminosilicate. Its well - defined three - dimensional framework structure, composed of interconnected SiO₄ and AlO₄ tetrahedra, endows it with unique and outstanding properties. The 9Å pore size is a critical feature, enabling it to selectively adsorb a wide range of molecules based on their kinetic diameters.

Formula: Na₂O·Al₂O₃·(2.8 ± 0.2)SiO₂·(6 - 7)H₂OSiO₂/Al₂O₃≈2.6 - 3.0

CAS: 1318 - 02 - 1

Pore size: about 9Å (1Å = 0.1nm)

Standard: CE and HG/T2690 - 2012

WHAT 'S THE PERFORMANCE?

Item	Unit	Pellet	
Appearance	Beige, faint yellow, No mechanical impurities		
Diameter	mm	1.8 - 2.5	3.0 - 5.0
Bulk density	g/ml	≥0.67	≥0.65
Granularity	%	≥98.00	≥98.00
CO ₂ Adsorption	ml/g	≥26.5	≥26.5
Static H ₂ O Adsorption	%	≥22	≥22
Crush strength	N	≥35.00	≥80.00
Static hexane Adsorption	wt%	≥17.5	≥17.5
Abrasion Rate	wt%	≤0.2	≤0.2
Moisture content	%	≤1.5	≤1.5