



## High Performance SOLIMIDE® Polyimide Foam Insulation



*Evonik Foams' aviation, marine and industrial products offer major benefits in design, outfitting and retrofit applications worldwide.*

### Properties include:

- Light weight
- Superior fire resistance
- Virtually no smoke or toxic gas production
- Outstanding thermal and acoustic insulation
- Environmentally friendly
- Proven durability
- Easy installation
- Wide operating temperature range



Achieve the total performance required in demanding environments by specifying SOLIMIDE polyimide foams. They're the solution for your tough design problems.



**SOLIMIDE®**  
POLYIMIDE FOAMS

**Work to the Extreme**

# SOLIMIDE Polyimide Foam Characteristics

*SOLIMIDE polyimide foams have an unrivaled advantage over traditional insulation materials, making them the products of choice for solving tough problems aboard marine vessels and aircraft and in industries worldwide.*

## FLAME RESISTANT

Inherently fire resistant, SOLIMIDE foams emit virtually no smoke or incapacitating toxic byproducts when exposed to open flame.

## LIGHT WEIGHT

SOLIMIDE polyimide foams are extremely lightweight. This translates into fuel savings and extra payload capacity.

## WIDE TEMPERATURE OPERATING RANGE

SOLIMIDE polyimide foams remain functional when exposed to extremes of cold and heat that would degrade competitive polymer foams. The foams maintain their flexibility even at cryogenic temperatures.

## ENVIRONMENTALLY FRIENDLY

This non-fibrous insulation requires no special handling. No halogens, heavy metals, formaldehyde or ozone-depleting chemicals are used in the manufacture of SOLIMIDE polyimide foams.

## ACOUSTIC/THERMAL PERFORMANCE

SOLIMIDE polyimide foams offer excellent acoustic absorption and good thermal insulation properties.

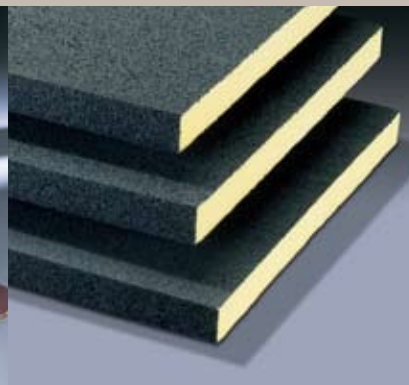
## PRODUCTIVITY

SOLIMIDE foam products are more cost effective to handle and install than fibrous insulation. They are light, easy to cut and fit, and readily adapt to fabrication with other materials.

## DURABLE

SOLIMIDE foams show significantly greater resistance to damage than traditional insulation products. They maintain their integrity after long-term usage in a vibrating environment and when exposed to extremes of cold and heat that would degrade other products. Polyimide foams also have a high degree of chemical stability and are resistant to hydrocarbons, alcohols and non-concentrated acids.

## Selected Applications



### Thermal/Acoustic Insulation

SOLIMIDE polyimide foams are combined with a variety of vapor barriers, coatings and facings to provide long-lasting, lightweight thermal/acoustic insulation packages with superior fire resistance. Pressure sensitive adhesive backings are also available.

### Noise Transmission Loss Blanket

Glass cloth or other facings, laminated to the surface of SOLIMIDE polyimide foams, are used in combination with a variety of septum materials to treat noise transmission problems. These systems also offer outstanding acoustic absorption properties, superior fire resistance, easy installation and can be designed to be fiber-free.

### Duct Insulation

SOLIMIDE foams are laminated to reinforced aluminum/polyester or elastomeric vapor barrier film and shaped for easy installation as external duct wrapping. They also come sealed in a thermoplastic film or laminated to other facings, such as aluminum foil or ceramic glass cloth.

### Duct Liner

For commercial applications, SOLCOUSTIC® duct liner is specifically designed as fiber-free acoustic and thermal lining for sheet metal plenums and ducts in HVAC systems with service temperatures up to 250°F (121°C).

# We Have the Right Products for Your Insulation Needs

## MARINE

SOLIMIDE foam is used as thermal and acoustic insulation onboard military naval and commercial vessels around the world. Literally tons of topside weight is saved when lightweight SOLIMIDE foams replace heavier fibrous glass insulation in bulkhead, overhead, duct and piping applications. End users also choose SOLIMIDE foam for its excellent fire, smoke and toxicity performance in a fire scenario. SOLIMIDE® HT-340 foam is certified as a Fire-Restricting Material in accordance with the International Maritime Organization (IMO) High Speed Craft code. Over 15 navies and many commercial operators worldwide have chosen SOLIMIDE® foam as the marine insulation solution for their vessels.

## AIRCRAFT/AEROSPACE

SOLIMIDE aircraft foam products are the ideal insulation to meet the stringent requirements of the aircraft/aerospace industries. They provide excellent acoustic and thermal insulation at extremely low weight. Their superior fire resistance meets FAR25.856(a) Radiant Panel Flame Propagation Rule; toxic gas, smoke generation and offgassing are virtually non-existent. With a proven in-service durability record in hot, humid environments, they outperform traditional fiberglass insulation by retaining insulating properties far longer. SOLIMIDE foams are self-supporting and non-fibrous – making them easy to handle, quick to install and requiring fewer fasteners. They can be found in Airbus, Boeing, Canadair, Embraer, business jets, military aircraft and helicopters, as well as in demanding aerospace applications, including the International Space Station, Mars Rover, solar shields and cryogenic fuel tanks.

## RAIL

SOLIMIDE foam offers a lightweight, non-fibrous solution for thermal and acoustic insulation in the rail industry. It is especially useful in areas that see humid conditions, high temperatures, or where loose fibers are a concern. SOLIMIDE foam meets the U.S. FRA and FTA (Docket 90-A) Recommendations for Flammability and Smoke Emission Characteristics. Typical applications include sidewall and roof insulation, HVAC systems, and packing or seals around doors and windows.

## CRYOGENIC

SOLIMIDE foam's ability to maintain its flexibility at liquid nitrogen gas (LNG) temperatures makes it a superior choice for cryogenic expansion joints, designed to absorb expansion/contraction stresses caused by thermal cycling of rigid insulation materials. The foam is used as joints and pipe shoes for pipelines at olefin production and petrochemical facilities. Other cryogenic applications using SOLIMIDE foam include medical storage/transport units, cryogenic fuel tanks and wind tunnels.

## INDUSTRY

SOLIMIDE foam's unique combination of properties makes it an ideal choice for many industrial applications. Because of its +300°C continuous use temperature and inherent fire resistance, SOLIMIDE foams are used in environments as diverse as ovens to nuclear power plants. Its very low offgassing makes it a superior choice for sensitive electronic, medical and analytical instruments. SOLIMIDE foam is lightweight, durable, and exhibits excellent acoustic, thermal and chemical resistance properties. In addition, it can be fabricated into a variety of shapes and sizes, making it easy to install in any industrial application.

## Selected Applications



### Pipe Insulation

SOLIMIDE polyimide foams are readily cut into one- and two-piece shapes for easy installation as pipe covering. A facing and/or coating can be applied as needed to provide a vapor barrier for the open-celled foam. Pipe insulation made of densified foam is also available.



### Densified, Flexible Foams

SOLIMIDE densified foams are flexible yet firm. They offer a combination of excellent thermal insulation values and lightweight support for applications requiring material with higher compressive or tensile strength.



### Acoustic Ceiling Panel

Attractive, lightweight ceiling panels are designed to fit T-bar grid systems. They provide excellent acoustic absorption along with fire safety, durability and easy ceiling access.



### Other Applications

SOLIMIDE foams can be fabricated into a variety of other product configurations by Evonik Foams' worldwide network of authorized distributors/fabricators. Please contact us to discuss the requirements of your specific application.



## History and Development of SOLIMIDE Polyimide Foam

The first polyimide foam was created in the early 1970s. NASA sponsored additional development of the technology to decrease the flammability, smoke and toxicity of materials used in space environments. The space agency's search for non-burning, lightweight foam systems led directly to the development of SOLIMIDE polyimide foam, which was initially used as thermal insulation and cushioning for the space shuttle program.

Today, the primary insulation systems used aboard all U.S. Navy warships and submarines are based on SOLIMIDE polyimide foams. International navies and operators of weight sensitive commercial vessels also take advantage of SOLIMIDE foam's light weight and fire properties to improve overall ship performance and life-cycle cost.

As an outgrowth of the work with NASA, SOLIMIDE polyimide foams are being produced in an extremely lightweight form to meet the requirements of aerospace/aircraft/airframe manufacturers. These lighter foams give manufacturers major weight savings, while retaining excellent thermal and acoustic insulation properties.

### Partnering to deliver engineered systems

From cryogenic tanks and pipelines, to sensitive analytical and medical instruments, ovens and high temperature industrial applications, SOLIMIDE foams offer the unique properties for your insulation needs. Whether your application requires an off-the-shelf or custom solution, Evonik Foams and its worldwide distributor network are ready to assist you to solve tough design problems.



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The product is covered by one or more U.S. patent numbers: 4,305,796; 4,296,208; 3,793,281; RE 30,213; 4,369,261; 4,315,077; 4,361,453; 4,367,296; and patents pending.

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