

Product Information Sheet



FlexCat™ High-Performance Specialty Catalyst Support Media

INTRODUCTION

FlexCat™ is a revolutionary high-surface-area, fiber-based, flexible catalyst support media designed to provide enhanced catalyst effectiveness while increasing yields, purity and cost savings. FlexCat fiber provides a catalyst support with a greater geometric surface compared to traditional supports in which catalysts, including precious group metals, directly adhere to the media. FlexCat is a robust fiber material with a defined crystallinity, porous surface area and microstructure that can withstand harsh environments, including temperature ranges up to 900°C, without damage or loss of adhered catalyst. FlexCat's lightweight composition provides enhanced feedstock contact with the catalyst surface compared to current media, while allowing for a reduction in reactor footprint and active catalyst payload without sacrificing output and purity.

FlexCat can be shaped into numerous metal supported designs that can be adapted into existing builds or considered for new installations. The versatile, modular units are custom for individual processes, making installation safer and easier, with less downtime.

FlexCat provides the following features and improvements of conventional catalyst supports:

- Defined porous surface microstructure for catalyst loading
- Direct loading of catalyst on to the fiber – zeolite coatings or pre-treatment not required
- High geometric surface area, enhanced tortuosity
- Reduction in catalyst load
- Reduced reactor footprints
- Stable in aggressive atmospheres >900°C.

APPLICATIONS

FlexCat fiber mat can be coated and formed into wide variety of durable forms to be used as a catalyst support in:

- Syngas generation and hydrogen production
- Chemical processing and refinement
- Petrochemical refining
- Industrial emission control



TYPICAL MEDIA PROPERTIES

Color	White
Chemical Composition	95 – 97% Al ₂ O ₃ ; 3 – 5% SiO ₂
Trace Components	<0.5%
Shot Content (Non-fibrous Material)	Negligible
Classification Temperature (°C)*	900
Median Fibre Diameter (µm)	4 – 7
Density (g/cc)	2.2
Melting Point (°C)	>2000
Fiber Surface Area (m ² /g)	90–200
Average Pore Diameter (Å)	60 – 75
Pore Volume (cm ³ /g)	>0.15
Specific Surface Area at 0.1 g/cc	45,000 m ² /m ³

*Classification Temperature is not a definition of the operational limit of these products, especially when long-term physical or dimensional stability is a factor. For certain applications, continuous use temperature limits may be significantly reduced. For assistance or clarification, please contact your nearest Alkegen Engineering office.

**Nonstandard diameters, surface areas and chemistries may be available upon request. To learn more, please contact your FlexCat technology representative.

Data are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes.

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AVAILABILITY

FlexCat product and supports are Custom-designed to your specific catalytic application and can be delivered at commercial scale based on customer needs.

HEALTH AND SAFETY INFORMATION

Saffil® Fibers were designed with the expert advice of toxicologists to minimize the potential for biological activity. The fibers are produced in a novel spinning process from a viscous aqueous solution to give a narrow diameter distribution. No excess lung cancers or interstitial fibrosis was observed in an over 30-year observation of those handling the fiber. A Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on handling precautions and emergency procedures. This must be consulted and fully understood before handling, storage, and use.

The following is a registered trademark of Alkegen: FlexCat and Saffil

The test data shown are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes. Product Information Sheets are periodically updated by Alkegen. Before relying on any data or other information in this Product Information Sheet, you should confirm that it is still current and has not been superseded. A Product Information Sheet that has been superseded may contain incorrect, obsolete and/or irrelevant data and other information.

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