

Advanced Graphite Materials and High Temperature Insulation Solutions

POLYSILICON PRODUCTION

SOLAR INDUSTRY



Enabling
the
SOLAR
revolution



GrafTech has developed unique solutions for polysilicon, solar and semiconductor manufacturers based on extensive experience with industry leaders. Our products are backed by cutting-edge engineering and R&D expertise of the company that pioneered graphite material science.

From polysilicon production through crystal growing, GrafTech's Advanced Graphite and High Temperature Insulation materials combine in unique engineered solutions customized to your applications.

www.graftech.com

integrated solutions

for the

Upgraded Metallurgical Grade Silicon

Applications : Crucibles, Molds, Flux Tubes, Furnace Fixtures, Electrodes, Furnace Insulation

Chemical Vapor Deposition (CVD) Polysilicon

Applications: Electrodes ('sockets'; 'seed chucks') thermal and chemical management solutions.

Developmental Technologies and Fluidized Bed Reactors

Emerging technologies for polysilicon production benefit from GrafTech's industry experience, material science expertise and broad product portfolio.



POLYSILICON PRODUCTION



Contact GrafTech's Customer Technical Service represent

www.graf

GrafTech's products are engineered to provide the highest quality graphite for the polysilicon, solar and semiconductor markets

CTE
GrafTech's broad product portfolio includes grades with Coefficients of Thermal Expansion optimized for the polysilicon and solar industries

Purity
Halogen purification reduces impurities to <10ppm

POLYSILICON & SOLAR industries



Monocrystalline Silicon Ingots

Applications : Heaters, Crucibles, Heat Shields, Hot Zone Parts.

CRYSTAL GROWING



Multicrystalline Silicon Ingots

Applications : Crucibles, Support Plates, Insulation, Hot Zone Parts

Thin Film Silicon Processing

Applications : Crucibles, Insulation, Hot Zone Parts

Representatives for detailed information on each grade available.

ftech.com

Strength

Tensile, flexural, and compressive strength improve as temperature increases

Thermal Conductivity

GrafTech offers products with high thermal conductivity or excellent insulating value, depending on form and application

Specific Resistance

Unique ability to act as an electrical conductor or resistor depending on the application

A complete portfolio

advanced graphite materials

Global leaders in polysilicon production and crystal growing trust GrafTech's broad graphite portfolio.

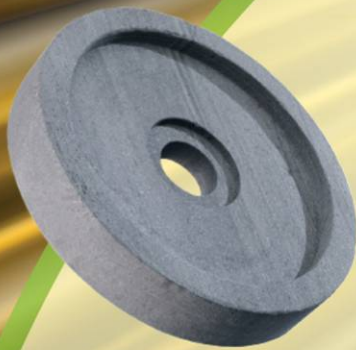
- Optimized for performance needs
- <10ppm impurity
- Machinable to precise tolerances for intricate equipment
- Enables larger batch size crucibles
- In-house machining, purification and coating for production consistency
- Largest Monolithic Graphite Billet in the world



high temperature insulation

Customized engineered solutions for the most demanding chemical and thermal environments.

- High Purity: reduces contamination and defects
- Fully machinable materials can be precisely shaped to your application
- Highly insulative, low thermal conductivity reduces energy consumption and lowers costs
- Low mass = faster furnace heating and cooling & shortened cycle times
- Strong, free-standing board and cylinders offer easier installation and repair than felts
- Composite materials and component systems: performance excellence for custom solutions



Contact GrafTech's Customer Technical Service representatives for a customized application consultation. Additional information can be found in each grade's Technical Data Sheets which are posted at www.graftech.com.

for polysilicon and solar industries.

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For all global locations and contact information visit www.graftech.com

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