

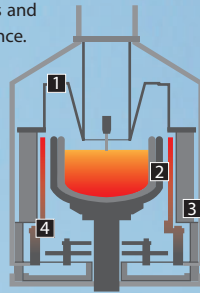
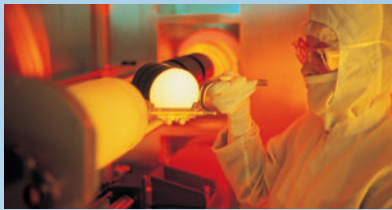
In industry, in life

Toyo Tanso product families play important roles in a range of different spheres

In industry

[Semiconductors]

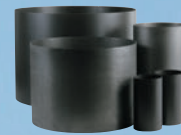
Silicon wafers support the growth of the electronics industry. In the wafer fabrication process, during which products are exposed to ultra-high temperatures, large numbers of graphite components, such as heaters and crucibles, are being used for their high purity and excellent heat resistance.



1 Reflector



2 Crucible



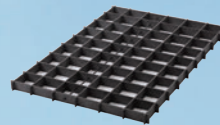
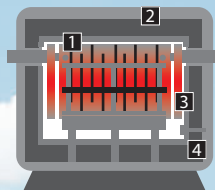
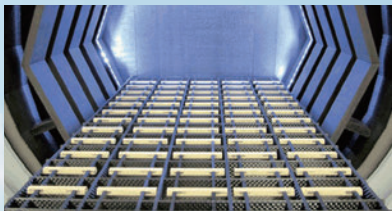
3 Heat shield



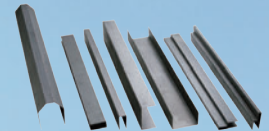
4 Heater

[Industrial furnaces]

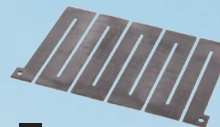
Heat treatment furnaces are used to optimize the functions of metal and ceramic components. Carbon products are being employed in trays, heaters, and other structures and parts used in the interiors of such furnaces thanks to their lightweight properties and excellent thermal and chemical resistance.



1 Base tray



2 Protective cover for thermal insulation



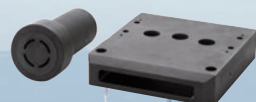
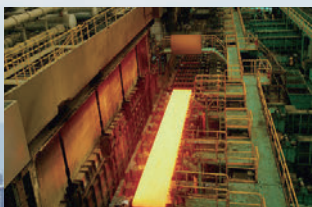
3 Heater



4 Bolts

[Continuous Casting]

Graphite is being used for molds employed in facilities that continuously cast molten copper, aluminum, precious metals, and alloys into sheets, rods, and pipes.



Continuous Casting Dies

[Electric discharge machining]

Molds are essential for the mass production of parts. One method used to manufacture molds is known as electric discharge machining. Offering lightweight properties and excellent cutting performance, graphite electrodes enable fast processing and are being used in a wide range of processing applications from large items to small precision items.

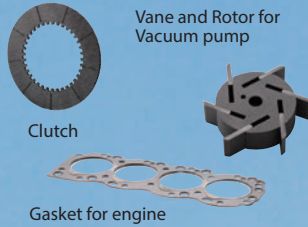


Electrodes for EDM

In life

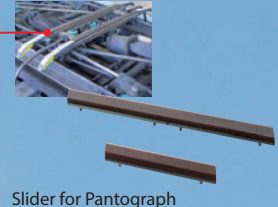
[Automobiles]

A diverse range of carbon products are being used to provide different functions as components for equipment employed in automobile parts and their manufacturing processes.



[Trains]

Our proprietary carbon strips for use in pantograph contacts are being employed in the field, in which they are helping to significantly reduce contact-wire wear.



Photograph: provided by East Japan Railway Company

Slider for Pantograph

[Medical equipment]

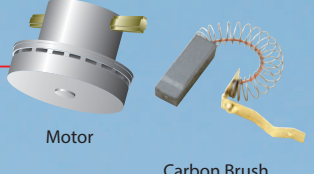
High-purity graphite products are being incorporated as target materials in the X-ray tubes that play an important role in CT scanners.



Target material for CT scanner

[Home electronics products]

Carbon brushes are being used in the motors of products such as vacuum cleaners, washing machines, and power tools. Possessing excellent electrical conductivity and wear resistance, they play the role of supplying electricity to the rotating element of the motor via sliding contact.



Motor

Carbon Brush

[Energy-saving equipment]

Demand for energy-saving equipment is increasing. Carbon products, which have excellent self-lubricating properties, are being used in applications such as circulation pump parts for hot-water supply systems for which a high degree of safety is required.



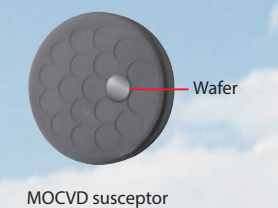
Pump

Bearings

Seal ring

[LEDs]

Thanks to their high purity and excellent thermal stability and conductivity, SiC graphite coating products are being used as wafer pedestals in the film formation process for compound semiconductors, the light-emitting elements used in LEDs.



MOCVD susceptor

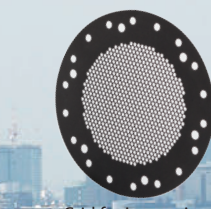
Wafer

[Space equipment]

C/C composites are being used in the grids of the ion engines that form the heart of the asteroid probe *Hayabusa* and its successor, *Hayabusa 2*.



Image: provided by JAXA. Illustrated by Akihiro Ikeshita



Grid for ion engine

[Solar power generation]

Thanks to their excellent heat resistance and durability, graphite products are being employed in major components used in the manufacturing process and wafer film formation process of silicon, the mainstay material of solar cells.



Carrier tray for PECVD

Rectangular crucibles