

# Products

## Carbon

### Metallurgical coke

Metallurgical coke is a purified carbon material manufactured by the dry distillation of coal. Dry distillation refers to heating the coal at about 1,200°C in the absence of air until volatile components of its coal are driven off and decomposed into coke, gas, coal tar, and so forth. We handle and deliver both domestically and internationally manufactured products which meet customer's quality, size, and packing requirements.



#### Applications

Met Coke(30-100mm): Blast Furnaces, Waste incinerations plant, Non-ferrous metal refineries  
Nut coke(10-30mm): Recarburizer, Lime calcination, Ferroalloy manufacturing  
Breeze Coke(0-10mm): Carbon Additive, Packing coke, Non-ferrous metal refineries

### CDQ fine coke

CDQ fine coke is a fine coke breeze which can be collected from a CDQ (Coke Dry Quenching) Equipment. A unique character of this product is its very low moisture level (less than 1.0%) and its fine size (50% for 0 – 0.1mm). CDQ fine coke is packed in plastic flexible container bags (800kg/bag) or is transported in bulk (mainly by pneumatic bulk trailers).



#### Applications

Carbon injection for electric arc furnace

### Foundry coke

Foundry coke is a raw material and also a heat source that is used in cupola furnaces to manufacture cast iron. Compared to Metallurgical coke, the size of a Foundry coke is bigger whilst the ash content is lower. We handle domestic Foundry coke from Nippon Coke & Engineering and also products from China. We have established an integrated sales network offering prompt, secure and stable services, which includes our domestic stock yards and direct delivery system from manufacturing sites to customers. We also offer various substitutes for foundry coke to meet customers' demands.



#### Applications

Cast iron manufacturing (automobile component, industrial machinery, cast iron pipe)

### Calcined Anthracite (Gas Calcined Anthracite)

Calcined anthracite are produced by calcining anthracites in gas furnaces. Low volatile matter and high fixed carbon are the unique character of this product and are handled in flexible container bags or in bulk.

#### Applications

Carbon additive for steel manufacturing

## Carbon

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### Green Petroleum coke (domestic and import)

Green petroleum coke, better known as petcoke is a product that derives from oil refining process. After crude oil is treated in an atmospheric distillation plant and vacuum distillation plant, residual oil is treated in a coker unit separating off petroleum products whilst producing petcoke.

We handle domestic petcoke as well as imported products from the U.S., Canada, and China.



#### Applications

Cement manufacturing, Fuel for boilers

### Anthracite

With a high degree of coalification and low volatile content, anthracites generate little smoke when burned and are regarded as high quality coal. We handle anthracites from various countries including Vietnam (Hongai coal) and promote them widely to cement manufacturers and to general industries.



#### Applications

Steel manufacturing, Cement manufacturing, Briquette manufacturing, Fuel for boilers

### Coal Tar

Coal Tar is a liquid material and is a by-product produced in coke ovens. Coal Tar is distilled to produce Coal Tar Pitch, Creosote Oil and Naphthalene. It is also occasionally used as an industrial fuel source. We deal both domestic and overseas products.

#### Applications

Raw material for Tar distillation, Carbon Black manufacturing

### Coal Tar Pitch

Coal Tar Pitch is produced by distillation of Coal Tar. Coal Tar Pitch is divided into three grades, Soft Pitch, Middle Pitch and Hard Pitch, classified by its softening point.

We handle both domestic and overseas products.



#### Applications

Binder material for Aluminum Anode, Binder/Impregnation material for Graphite Electrode, Pitch Coke raw material

## Carbon

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### Pitch Coke

Pitch Coke is produced from Coal Tar Pitch or otherwise known as Soft Pitch, using a delayed coking process and a calcination process. Pitch Coke is an extremely pure form of carbon, suitable for Graphite Electrodes, Carbon Specialties, Recarburizers, and various carbon additives.

We export Japanese Pitch Coke globally to areas such as USA, China and India.

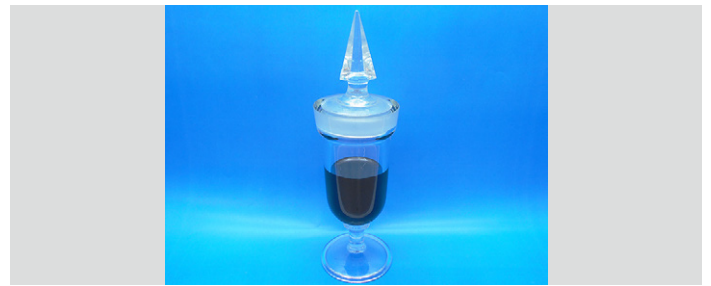
#### Applications

Aluminum anode, Graphite electrode, Recarburizer, Carbon specialty products, Carbon Additive

### Creosote Oil

Creosote Oil is made by distillation of Coal Tar and are mainly used for making Carbon Black.

Our source of import are products from Asia.



#### Applications

Carbon Black

### Biocarbon

Biocarbon is considered to be an optimum source of energy that could replace fossil fuels. They are produced by carbonizing organic materials such as wood.



#### Applications

Steel manufacturing, Industrial fuel

### Calcined Petroleum Coke

Calcined Petroleum Coke is produced from Green Petroleum Coke through high temperature treatment to increase the carbon content.

We handle both domestic and overseas products.



#### Applications

Aluminum Cathode block, Graphite electrode, CO gas generation, Recarburizer



## Carbon

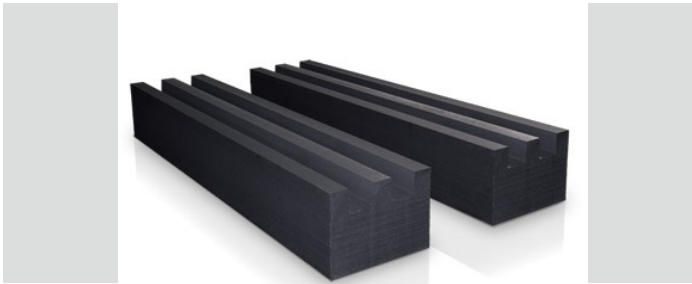
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### Graphitized Cathode Block / Carbon & Graphite Specialties

Graphitized Cathode Block and Carbon & Graphite Specialties are fully graphitized carbon material manufactured through the process of mixing (Calcined) Coke and Pitch, baking, impregnating with Pitch, and graphitizing.

These products have excellent stability of quality, high thermal conductivity, high electrical conductivity, anti-thermal shock and high corrosion resistance.

We handle domestically manufactured products which meet customer's requirements.



#### Applications

Cathode block for Reduction Cell of Aluminum smelting  
Anode block for Reduction Cell of Magnesium smelting

### Graphite Electrode

Graphite Electrode is fully graphitized carbon material manufactured through the process of mixing Needle Coke and Pitch, baking, impregnating with coal tar pitch, and graphitizing.

This product has high current-carrying capacity, thermal shock resistance and outstanding resistance to breakage.

We handle domestically manufactured products which meet customer's requirements.



#### Applications

Graphite Electrodes for Electric arc furnace

## Refractory Refractory products and materials

### Refractories

Refractories are materials that can resist high temperature at 1500°C or more, and are an essential equipment and materials during production process of iron & steel industry. There are a variety of shapes and materials according to the applications and its operating temperatures, and each refractory product is tailored to meet customer's demands. In order to manufacture one ton of crude steel, 9 kg of refractory products are required and therefore, it plays a key role in iron and steel making process, both in Blast Furnace and Electric Arc Furnace. Refractories are commodities that have devolved together with iron & steel industry by contributing to steel production and its quality. 80% of domestic refractory supply is consumed by iron & steel industry. Refractory products are manufactured in a number of countries and are traded internationally like so in the iron & steel industry. We mainly import refractory products from Europe, especially Czech Republic and Poland, targeting domestic and overseas markets. Among refractory applications, we specialize in the applications of coke oven batteries and hot blast stoves.



#### Applications

Coke Oven Batteries and Hot Blast Stoves

### Raw Materials

There are two kinds of refractory raw materials. One is "Natural Ore" which is extracted from raw material mine. The other is "Synthetic Material" that is made of natural ore and are fused in an Electric Arc Furnace to be solidified and crushed. Both are sized to its required standards. The largest production center and factory for refractory materials are located in China, and about 70% of refractory raw materials consumed in Japan depends on them. Refractory raw materials are also a globally traded product, and both Natural and Synthetic raw materials are produced and manufactured in many countries around the world. Although we mainly import Synthetic raw materials from Hungary (Fused Alumina, Fused Spinel and Fused Mullite), we look for a new and an alternative source worldwide according to our customer's demands.



#### Applications

For a various kinds of refractory products (e.g. kiln tools for firing semiconductor substrates), and abrasives

### Sea Water Magnesia Clinker

Magnesia Clinker is widely used as a raw material for Refractories such as iron & steel industry and cement industry that require high temperature operations.

There are two types of raw material for producing Magnesia Clinker. One is natural magnesite ore and the other is extracted from sea water. "Sea Water Magnesia Clinker" is produced by magnesium ion which is dissolved in sea water by the reaction using alkaline materials and recovering "Magnesium Hydroxide"  $Mg(OH)_2$  slurry. The slurry is sintered in a rotary kiln to produce "Magnesia Clinker".

Japan being a resource dependent country, Magnesite ore is rarely found however, we are rich in a high quality Limestone. Using this as an alkaline agent, we export and supply "Sea Water Magnesia Clinker".

#### Applications

For a various kinds of refractory products (e.g. raw materials for cupels for precious metal fusion analysis)