

# Bentonite and Moulding Sand Additives





## Customized solutions: Bentonite-lustrous carbon mixtures from HA

The advantages of the moulding process with bentonite-bonded moulding materials have led to over 50% of all castings worldwide still being produced using this method. HA offers a complete product range for this process:

**Bentonite:** HA's fully activated bentonite is suitable for all foundry applications.

**Bentonite-lustrous carbon mixtures:** Used in almost all iron foundries and tailored to the foundries' requirements.

**Lustrous carbon formers:** Traditional coal-based or enriched with additives for enhanced lustrous carbon formation ability. Additionally, additives based on renewable resources (Footprint products) are available. Both product lines are available in powdered and liquid form.

**Moulding additives:** For specific applications, special additives are required, such as graphite, expandable starches, or additional soda. These products complement our portfolio.

**Carbon-free moulding additives:** The carbon-free HA moulding additive can be used without limitations with the binder system of bentonite/water and replaces the traditional lustrous carbon former. In combination with an inorganic core sand binder, this enables carbon-free bentonite-bonded moulding systems in iron and metal casting.

## Combine selectively and benefit

Thanks to HA's wide product portfolio in the field of clay-bonded moulding materials, the optimal product combination can be found for every application. Whether it's the classic approach with lustrous carbon

formers or the carbon-free alternative, everything is possible. Our range of products provides versatility and flexibility to meet the specific needs and requirements of different casting processes.

# Our Products

## Bentonite

Our traditional foundry binder materials are based on activated calcium bentonites, offering excellent strength, high reactivity, and good disintegration properties.

## Bentonite-lustrous carbon mixtures

Mixtures of lustrous carbon and bentonite are the standard. From a bentonite content of 50% and above, all desired mixing ratios are achievable at HA. The lustrous carbon forming ability is individually tailored to the customer's needs.

## Lustrous carbon formers

Pure lustrous carbon formers are available in both the traditional version based on coal and a variant based on renewable resources. The ratio of lustrous carbon forming ability, volatile components, and compact residues is adjusted to meet the customer's needs. Both product families are available not only in powder form but also as liquid lustrous carbon formers.

## Moulding additives

Special requirements for the moulding system may necessitate the use of additional additives. In such cases, we can provide solutions with expandable starches, graphite, or even additional soda.

## Carbon-free additives

Our carbon-free additives are particularly innovative as they replace the traditional lustrous carbon former.

During casting, they effectively compensate for the sudden expansion of the quartz sand, just as coal and its residues did before.

The water requirement of the clay-bonded moulding material is reduced, an important advantage for castings sensitive to penetration and burn-in. The disintegration of the moulding material is not a problem at the usual levels of activated clay

# Advantages of carbon-free moulding additives

## Environmental protection and sustainability

- no BTX as well as BTEX, less smoke
- no odour nuisance
- no CO<sub>2</sub> emission due to decomposing organics

## Productivity

- high-quality castings
- excellent mouldability
- lower water demand in the moulding material, reduced gas formation, decreased tendency for penetration and burn-in

## Cost advantages

- lower landfill costs
- reduced CO<sub>2</sub> emissions
- no carbon input through the product

## Improved working conditions

- no odour nuisance during casting
- reduced dust formation in sand preparation and unpacking
- improved air quality due to less smoke and fewer BTX, BTEX emissions

# Application expertise

## References

Our products have been successfully used in numerous renowned foundries for many years. The products have proven themselves both in series production and in the area of individual customer casting.

## New application fields

With the carbon-free foundry additives, it is now possible for the first time to realise completely carbon-free moulding systems, even in iron casting.

In order to successfully implement projects of this kind, close interplay of all the components involved is necessary: foundry additives, core sand binders, core sand additives, coatings, and feeders.

## **HÜTTENES-ALBERTUS**

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