

PENTOMAG[®]

Fuel additive for
cement plants



COATING CONTROL

PLANT EFFICIENCY

Buildups formation control

Rotary kiln protection

Increase combustion efficiency

Fuel consumption control

CONTROL

HARD COATING & RING FORMATION



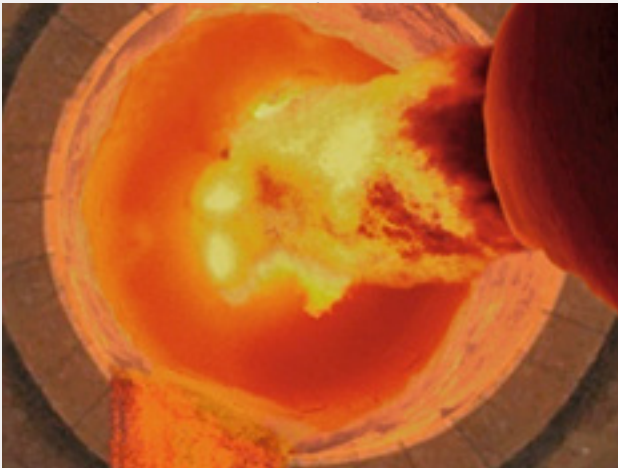
PentoMag® for cement is a modern fuel additive to prevent issues such as buildups in cyclones and precalciner, as well as rings in the rotary kiln.

Sulfur and vanadium content in petcoke speed up the buildups and rings formation, and makes them hard and therefore more difficult to clean.

PentoMag® for cement inhibits the vanadium effects, decreasing noticeably buildups and rings in the process. Due to the modification of the properties of existing buildups and rings, they will be easier to remove from the surface they are attached to (cyclone, precalciner and kiln).



INCREASE COMBUSTION EFFICIENCY



Another problem related to the vanadium content in petroleum coke is the formation of vanadium pentoxide, which acts as a catalyst in the oxidation of SO_2 to SO_3 (gas).

When PentoMag® for cement deactivates the vanadium, its catalytic effect is eliminated, therefore, the oxygen that would be consumed for this reaction remains available in the system to achieve a better combustion (lower kcal / kg of clinker consumption).

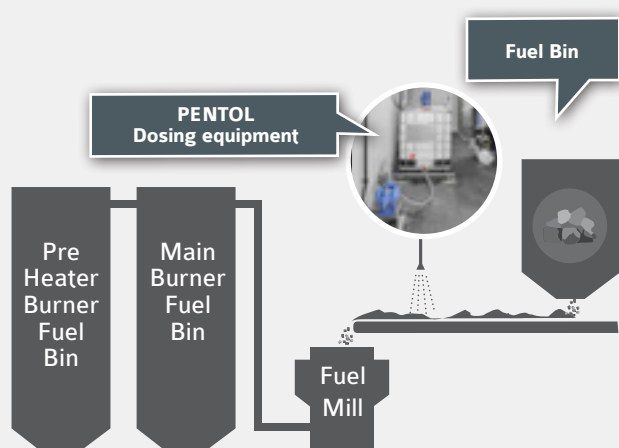
Improvement of safety conditions in cyclone & precalciner cleaning activities

Cleaning the cyclone and precalciner is hard physical work, requiring special PPE, a high-pressure water pump, and trained personnel for the operation.

The application of PentoMag® for cement substantially reduces hazardous work for operating personnel.



PRECISION AND RELIABILITY OF THE DOSING SYSTEM



Pentol develops and produces reliable dosing equipment specifically for its range of additives. The product is generally added to the petroleum coke just before the fuel mill. The dosing skid is designed for a smooth integration with the automatic plant control system.



HIGH EFFICIENCY OF PENTOMAG[®] FOR CEMENT



Sophisticated manufacturing and stabilization of the slurry containing up to almost 70 % of active substances enables application of very low dosing rates. In most cases, between 0.4 to 0.5 liter per ton of petcoke is sufficient. Actual dosing rate is always adjusted according to the vanadium content in petcoke.

Advantages of additives in slurry form



Fuel additives have already been used for many years, initially in powder form. Practical experience was, however, not satisfactory, first of all because of relatively high particle size of powder components (typically 150 microns). **The smaller the particle the greater the active surface.**

Pentol is the first manufacturer who developed production of fuel additives in form of stable slurry containing micronized active substances in oil suspension. Slurry is also resistant to water (powder will agglomerate in contact with moisture and its efficiency will be strongly limited). Also, storage of additives in slurry form is easier and dosing more precise.

PENTOMAG IS SAFE

TRANSPORTATION, STORAGE & USE

Chemical composition and production process of PentoMag® for cement minimizes safety hazards

related to transport, storage and use of the additive.

Fulfilling elementary procedures described in the Material Safety Data Sheet prevents any danger from personnel being in touch with the product.



50 years of Pentol's experience



Eric Blauenstein (President/Founder)

Olivier Blauenstein (CEO)

Pentol was founded in 1969 and has more than 50 years of experience with additives for coal and fuel oil fired boilers and furnaces. Since that time, composition and manufacturing process were continuously improved. High concentration and stability of slurry additives were achieved. Additives can be stored for a long time without losing their properties.

Application of PentoMag® for cement does not cause any negative side effects for kiln operation and on clinker quality.

MODERN AND ENVIRONMENT FRIENDLY **PRODUCTION LINE**



PentoMag fuel additives are manufactured on a modern, fully automated production line in Grenzach-Wyhlen, a small town on the bank of Rhine in the south of Germany, just next to Swiss border.

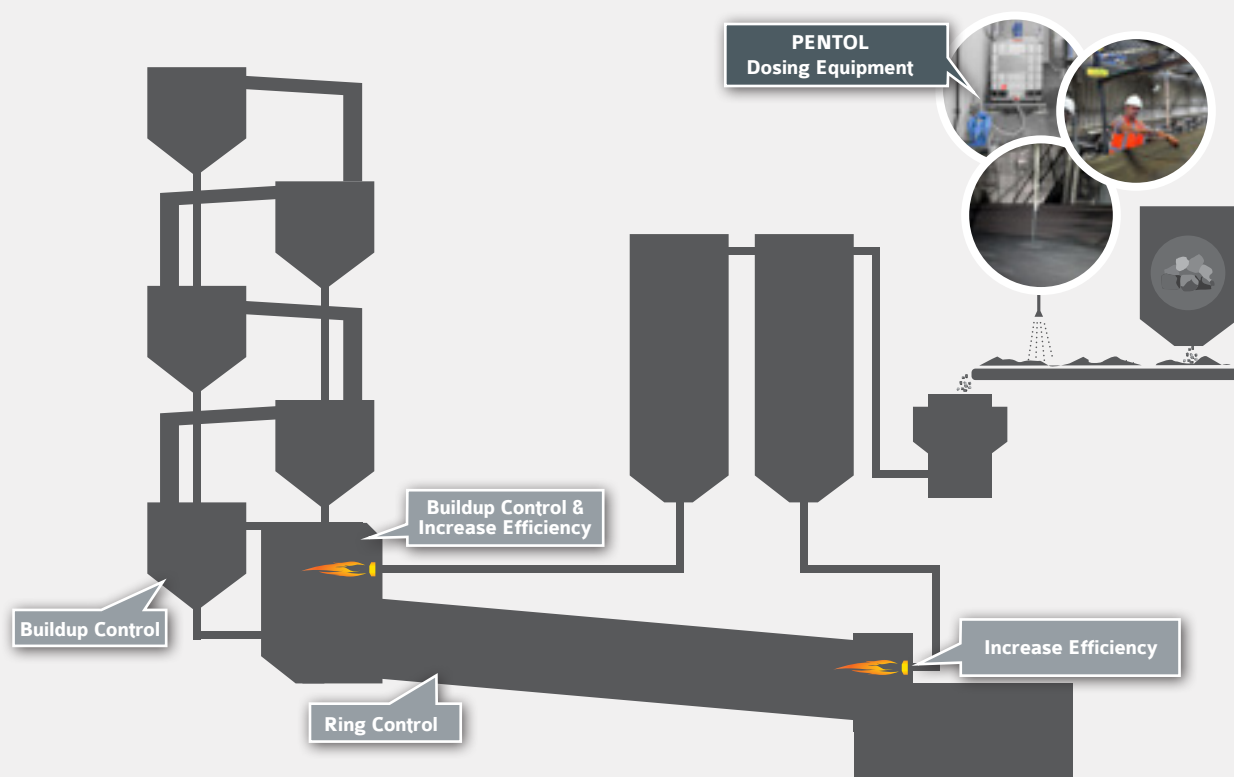
Pentol GmbH – the manufacturer of additives is ISO 9001, ISO 14001 and ISO 45001 certified.

Pentol is dedicated to an operating philosophy that includes environmental compliance as an important component of its overall management philosophies and procedures. All employees are committed to a system of continual improvement to ensure pollution prevention and source reduction whenever and wherever possible.





For Petcoke Fired Cement Plants



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