

PRODUCT ADVANTAGES AT A GLANCE

In warm mixed asphalt:

- > Energy savings and resource conservation due to lower mixing temperatures
- > Improved working conditions for lower emissions of fumes and aerosols at the plant and during laying
- > Quicker availability of newly paved surfaces for traffic
- > Reduced thermal aging of the binder
- > Less wear and tear to both asphalt plant and construction devices

In hot mixed asphalt:

- > Extended time frame for paving under adverse climatic conditions
- > Improved workability for optimised compaction results with demanding binders, thin layers or manual laying
- > Expansion of the distribution range

General advantages:

- > No chemical alteration of the binder (softening point)
- > Optimised use of reclaimed asphalt
- > No extra wet mixing time guarantees full production capacity of the mixing plant
- > Easy handling and metering
- > Easy storage
- > No additional bitumen tanks needed



TECHNICAL DATA

Chemical characteristics:

aspha-min® is a hydro thermally crystallized sodium aluminium silicate (spray-dried; zeolite). The percentage of crystal water is 21% by weight.

Appearance:

aspha-min® is available as fine granulate with an average particle diameter of 380 µm or as very fine powder with an average particle diameter of 3.5 µm.

Color:

White

Specific mass:

2.0 g/cm³

Compaction density:

~ 500 g/l

pH-Value (at 5% in water):

11.6

Water solubility:

None

Thermal behavior:

Crystallized water will almost entirely be released within a temperature range of 85 °C to 180 °C (185 °F to 356 °F).

Classification:

As per current legislation, aspha-min® is not considered a dangerous substance.

Storage:

In the temperature range of -15 °C to +70 °C (5 °F to 158 °F) no changes occur. Avoid humidity. No danger of dust explosion.

Contact details:

MHI Naturstein & Baustoffservice GmbH

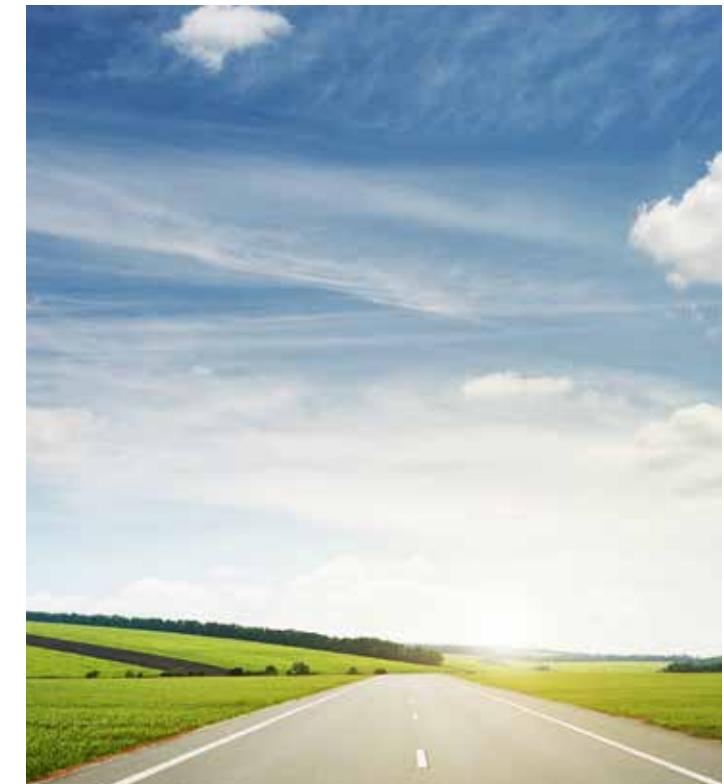
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aspha-min®

**FOR MORE SUSTAINABILITY
IN ASPHALT ROAD CONSTRUCTION**



WWW.ASPHA-MIN.COM

THE HIGH PERFORMANCE ADDITIVE

DEFINITIONS

aspha-min® is a finely granulated, flowable synthetic zeolite used in the manufacture of warm (WMA) or hot mixed asphalt (HMA). **aspha-min®** guarantees a significantly improved workability and compactibility for demanding binders (e.g. PMB), under adverse weather conditions and for manual laying – your insurance against insufficient compaction.

Using **aspha-min®**, temperatures in the mix can be reduced by about 30 °C. This does not only mean saving energy, but is also beneficial for staff, environment and machinery. Moreover, lower temperatures allow quicker completion of time-critical construction projects (e.g. night work).



APPLICATION AND VIRTUE

aspha-min® contains water of crystallisation at approximately 20% by weight. When introduced into asphalt mixing operations, the water will be released as vapour, thereby creating micro pores in the binder. This controlled foaming increases the volume of the binder, keeping the asphalt mix supple and workable even at low temperatures. As the crystallized water is released gradually, the described effect sustains until the mixture cools down below 100 °C. Thereafter, both binder and mix regain their original properties. By using **aspha-min®**, water vapour is the only additional emitted substance.

The admixture of **aspha-min®** is simple. The product is to be added at about the same time as the binder, in a quantity of 0.3% by weight. In fact, any metering systems to handle small batches, such as fibre feeding devices for stone mastic asphalt, are suitable.

Meanwhile, several types of simple stationary and mobile dosage devices are available. We will gladly advise you about individualized solutions.

aspha-min® can be used with all types of road bitumen (standard bitumen, polymer modified bitumen and such composites). The manufacture of asphalt mixes with **aspha-min®** does not require any extra wet mixing time, and therefore ensures full production capacity of the mixing plant. Since **aspha-min®** is delivered in big bags or meltable bags on pallets, it is easy to handle and store. **aspha-min®** withstands temperature fluctuations between -15 °C and +70 °C without any material deterioration. This means no extra investment in costly bitumen tanks – only dry storage is needed.

OPTIMISED WORKABILITY AND COMPACTIBILITY (HMA)

Aside from the classical application in the production of WMA **aspha-min®** has proven to be excellent in ensuring a better workability and maximized compaction in hot mixed asphalt.

Requirements for the quality and especially the compaction in asphalt laying are being raised constantly. Technical innovation with thin layers as well as hard and modified binders has made asphalt road construction a lot more demanding for contractors. Construction periods are getting shorter, night time paving becomes more common.



Likewise, risks to be fined for failed compaction rise. **aspha-min®** significantly improves the workability and compactibility of the asphalt mix. This leads to improved compaction results for thin layers, demanding mixes and under adverse weather conditions. Since workability is guaranteed at temperatures as low as 100 °C, the time frame for paving under such circumstances is clearly extended.

aspha-min® has proven to be particularly suitable for manual laying, e.g. laying in between tramway tracks in cities, to facilitate workability and to perfect compaction. **aspha-min®** also helps to maximise recycling rates in asphalt mixes, since it enhances the workability of such a mix.

WARM MIX ASPHALT (WMA)

By the use of **aspha-min®**, asphalt mix temperatures can be reduced by about 30 °C. This means saving resources and leads to less wear and tear to both asphalt plant and construction devices. Moreover, lower production and laying temperatures reduce the thermal aging of the bitumen.

Warm mixed asphalt with **aspha-min®** improves working conditions of paving staff significantly – through lower emissions of fumes and aerosols at the plant and during laying. Other advantages of warm mixed asphalt are apparent: Warm mix paving with **aspha-min®** allows quicker availability for traffic. **aspha-min®** accelerates highly time-critical construction projects such as airport runways, highly frequented highways and traffic junctions.