

# **Envira** – for clean air and clean water



**Envira**  
BY SMA MINERAL



# Always expect a bit more

**Clean air and clean water. Things that many may take for granted. But not you. You know that this means careful work, that it places high demands on products and methods, on skills and commitment. And you know it must not go wrong. We know that, too.**

One of SMA Mineral's special areas is lime products for flue gas cleaning and water purification. This we can and we're passionate about it.

In other words, you can feel confident. But we also feel that you should always expect a bit more. Because here at SMA Mineral we care about you as a customer and we want to develop our interests together. This means an ongoing contact

and regular quality meetings, all to ensure that we meet your requirements.

It also means collaboration with knowledgeable and committed employees, who at all times work on the basis of our common values – competence, reliability, flexibility and innovation – focussing on our promise: that you can expect a bit more.

**Welcome to SMA Mineral.**

# The right product at the right time – and in the right place

Sometimes it can be absolutely crucial for a manufacturing or purification process that the right lime products are delivered to the right place at just the right moment. For us, it's a matter of course. SMA Mineral's wide range of products, and our own reliable transports as well as external loading areas, ensure that you as a customer can feel safe regardless of industry and geographical area.

## **Near you**

With a large number of production facilities in Sweden, Norway and Finland, we are usually close to you as a customer.

## **Own haulage company**

We have complete control of transportation – with our own vehicles and agreements with other haulage contractors – which guarantees you get reliable delivery. Also, you can always reach our transport management, available every day and around the clock.

## **Silo monitoring**

By monitoring our customers' silos we can see when it is nearly time to top them up with lime. We thus take full responsibility for ensuring availability and offer a safe and efficient approach for each customer.

## **Stable backup**

In order to guarantee deliveries on time, we have stable backup in place at SMA Mineral. If we get a production stop at one plant, we can usually deliver from one of our other limestone works. Sometimes a production problem at the customer's may require us to temporarily switch to another type of delivery – for example, to deliver in a bag if the blow-in from a silo should stop working. No problem, we'll solve it.

*"Our customers must always have peace of mind. That's why we're available around the clock, every day, all year round."*

Thomas Brunzell, Transport Manager, SMA Mineral



# Lime purifies the air

There are several methods for cleaning flue gas, common to most of them is that lime is included. At SMA Mineral we have extensive experience in supplying first-class lime products to plants with different types of combustion and flue gas cleaning methods.

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There are three methods for flue gas cleaning using lime: dry method, semi-dry method and wet method.

## **Dry method**

The dry method involves adding slaked lime in dry form to moistened and cooled flue gases, either in the furnace or in the flue gas duct. The lime binds the acidic components (e.g. sulphur oxide, hydrochloric acid and hydrogen fluoride) and forms a dry product mixed with fly ash. It is then separated in subsequent hose filters.

In the case of waste incinerated in a fluidised bed, limestone or dolomite sorbent can be added by a separate input.

## **Semi-dry method**

When the semi-dry method is used, the flue gases are sprayed with lime slurry in a reactor. When the slurry dries, it reacts with the acidic components of the flue gases. The particles in the flue gases are then separated in hose filters. Both quicklime and slaked lime can be used for the slurry.

## **Wet method**

Wet method means either that the flue gases are washed in a scrubber or that they are cooled to the point where the water vapour transitions from gas phase to liquid phase (condensate). In both methods, the liquid is then purified and neutralized using lime. The final product becomes a clean and useable FGD gypsum.



# Lime purifies the water

Drinking water is considered our most important food and it is always expected to be of high quality. SMA Mineral's palette of high-purity lime products obviously comply with all the requirements that the Swedish Food Agency places on chemicals for water purification.

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In water treatment, the lime is used as a pH raiser, precipitating agent and hardness adjuster.

- Slaked lime is added to raise the pH of the water and as a precipitating chemical to separate non-desired substances (e.g. humus, particles and metals) and to reduce phosphorus to phosphate.
- To adjust the alkalinity and hardness of water and protect the water and sewage system from corrosion, slaked lime is often used. You can also allow the water to be filtered through a bed of limestone or dolomite
- Both slaked lime and quicklime are excellent for sludge treatment and sanitation at sewage treatment plants.

## **Makes a difference to the human body**

Not only does the lime contribute to clean water. Research also shows that the calcium found in lime has an impact on bone formation in the body and that lime together with magnesium provides protection against cardiovascular and other diseases. We think that feels especially good.

# The Envira family

The Envira family is the collective name for our lime products for water purification and flue gas cleaning. Depending on the application, we can produce the right product with the right chemistry and the right properties. Our products have a high and consistent quality and are always produced in the best possible working environment.

## Envira H

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**Envira H** from SMA Mineral is slaked lime that is manufactured at certain plants where we also have production of quicklime. The product is manufactured with quicklime as a raw material. Envira H is normally used in water treatment processes not linked to the production of drinking water. For use in drinking water production, please refer to product sheet for Envira H-W.

## Envira H-W

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**Envira H-W** from SMA Mineral is slaked lime that is manufactured at certain plants where we also have production of quicklime. The product is manufactured with quicklime as a raw material. Envira H-W is normally used in different types of water purification processes. The product complies with the Swedish Food Agency's regulations on drinking water.

## Envira S

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**Envira S** is SMA Mineral's quicklime for flue gas cleaning. It is manufactured at several of our limestone works in Sweden, Norway and Finland. Envira S is normally supplied in small fractions for direct use in boilers or for own slaking. The raw material, limestone, usually comes from one of our own limestone deposits.

## Envira S-W

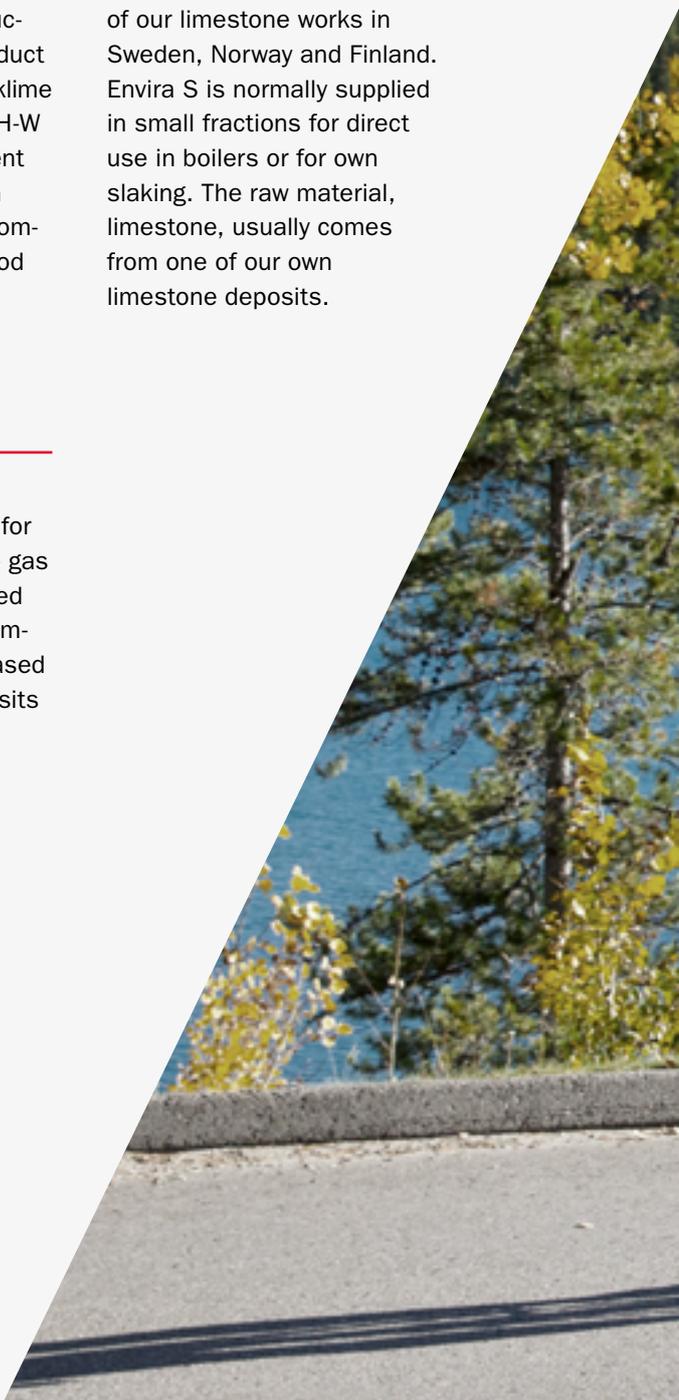
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**Envira S-W** is SMA Mineral's quicklime for water purification. It is manufactured at several of our limestone works in Sweden, Norway and Finland and is normally delivered in small fractions, sometimes even ground. The limestone raw material often comes from one of our own limestone deposits near the lime production. By selective quarrying and a conscious focus on the lowest possible levels of heavy metals, the product can comply with the Swedish Food Agency's regulations on drinking water.

## Envira C

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**Envira C** is our limestone product that can be used for water purification and flue gas cleaning. It can be obtained with different chemical compositions and fractions based on needs. Both own deposits and from partners.



## **The right quality**

In order to always be able to guarantee that you as a customer get the right quality, we ensure a number of points:

### **Production**

Producing lime with an extra high degree of purity is a long process. It begins with limestone quarrying in carefully selected limestone quarries. Thanks to chemical analyses, we know exactly which material best meets the customer's requirements.

### **Monitoring**

SMA Mineral performs a number of different analyses to ensure the right product quality. We regularly conduct analyses to get information on the chemical composition of the products.

To ensure the properties of the material over time, we offer a compilation of analysis data in the form of weekly or quarterly reports.

### **Lime for water purification**

Our lime products comply with the requirements for the preparation of drinking water and meet the maximum levels of heavy metals in chemicals for drinking water production as specified in the Swedish Food Agency's regulations.

### **Lime for flue gas cleaning**

By continually checking the reactivity and particle size, we ensure that all parameters match the customer's requirement specification.

# **A sustainable SMA Mineral – today and tomorrow**

Just as it is natural for us to offer products that give our customers the best results, it is also a matter of course that our production processes are conducted with the greatest possible consideration for the environment. Both today and tomorrow.

Environmental sustainability is part of everything we do. We constantly strive for the highest possible chemical safety and better utilisation of resources with regard to energy consumption and transports as well as material efficiency.

### **Supporting research**

Research is important – for us who are active in the industry and for everyone's future. Therefore, SMA Mineral supports research in several areas.

For example, SMA Mineral is involved in financing a new centre for sustainable production of cement and quicklime.

The centre belongs to the Department of Applied Physics and Electronics at Umeå University and has the task of strengthening research in sustainable cement and lime production.

### **Focussing on the environment**

Many of our products have a positive effect on the environment. In addition to the purification of flue gases and drinking water, lime in various forms is also used, for example, as pH raisers of acidified watercourses, in the clean-up of polluted soil and as soil improvers in agriculture.



# Our history begins at Gåsgruvan

It all started in a Värmland quarrying area dating back to the 14th century. Here at Gåsgruvan outside Filipstad lies the limestone plant that the Juvél family bought from Uddeholm in 1980 – a deal that laid the foundation for the SMA Mineral you meet today.

More than 40 years later, SMA Mineral is a leading supplier of high quality lime products to several different industries. We have production facilities in Sweden, Norway, Finland, Estonia and Bulgaria.

**Would you like to know more? Visit us at [smamineral.se](http://smamineral.se)**

## Production sites for our lime

### SWEDEN

Berga  
Boda  
Eneby  
Falkenberg  
Gåsgruvan  
Jutjärn  
Klinte  
Kullsberg  
Luleå  
Oxelösund  
Rättvik  
Sandarne  
Stucks

### NORWAY

Mo i Rana  
Seljeli

### BULGARIA

Dimitrovgrad  
Malko Tarnovo  
Shumen

### FINLAND

Kalkkimaa  
Loukolampi  
Ristimaa  
Röyttä

### ESTONIA

Võhmuta

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