



**EcoPiren**

By Brucite+



## **Recommendations**

EcoPiren® for aluminum composite panels

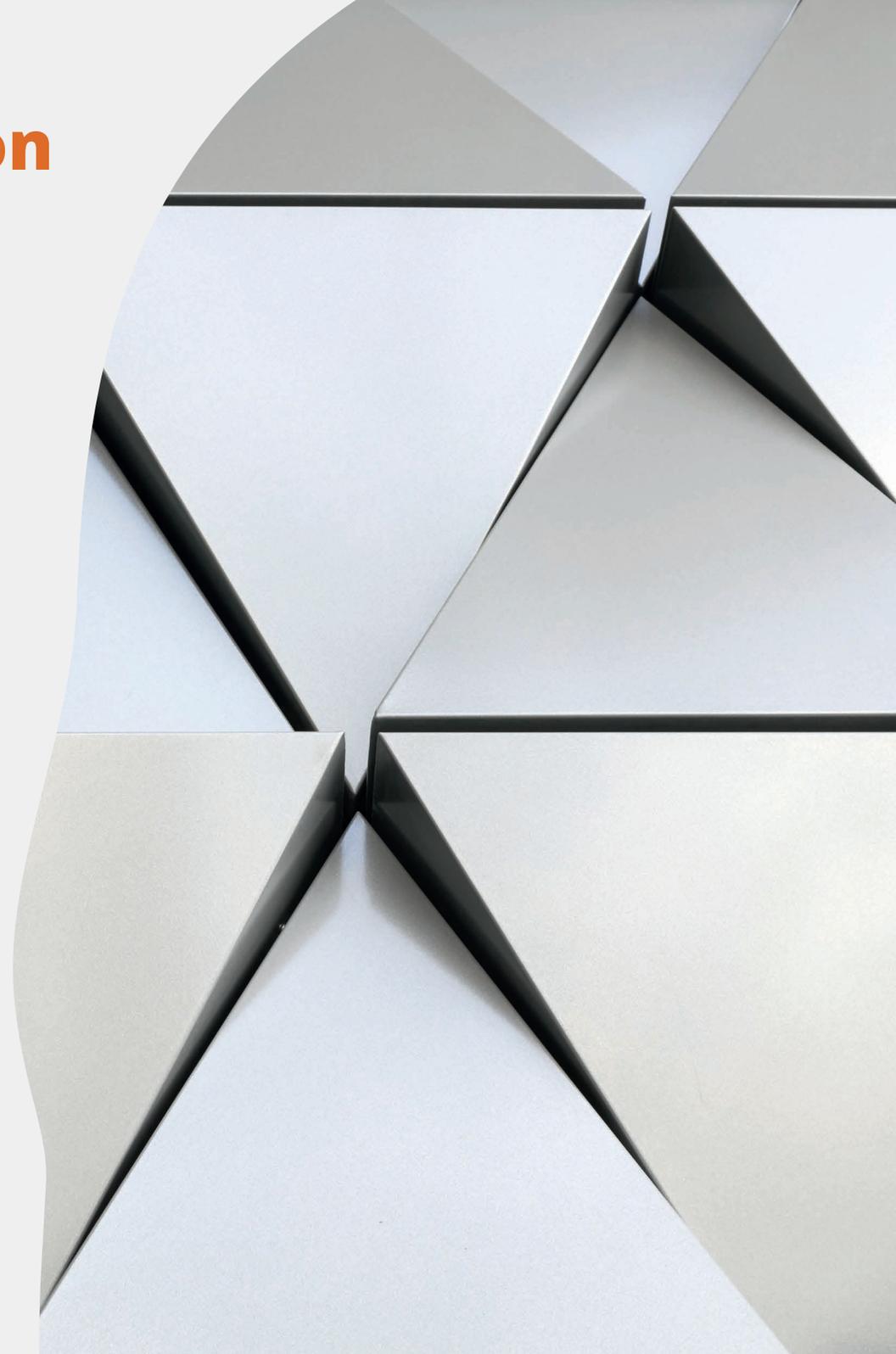
# Description and application

EcoPiren® is a natural magnesium hydroxide obtained by separation and milling of brucite mineral.

The content of main component  $Mg(OH)_2$  depends on the grade and is up to 96 %.

EcoPiren® appears as white or off-white powder and is used as a flame retardant filler for cable compounds of various nature — EVA, PE, PVC; Aluminum Composite Panels (ACP including A2 grade); roofing membranes (TPO, PVC, bitumen); engineering plastics for partial replacement of brominated Flame Retardants.

Incorporating EcoPiren® allows to diminish drawbacks of classic formulations: lack of fire performance, dripping, high smoke emission.



## How does EcoPiren<sup>®</sup> work?

Exposed to heat, EcoPiren<sup>®</sup> decomposes emitting water vapor, forming strong char and absorbing heat.

Such behavior provides elimination of oxygen from reaction area, protection for undamaged parts and cooling of the specimen.

Thus minimum damage is inflicted to the specimen.

# Application

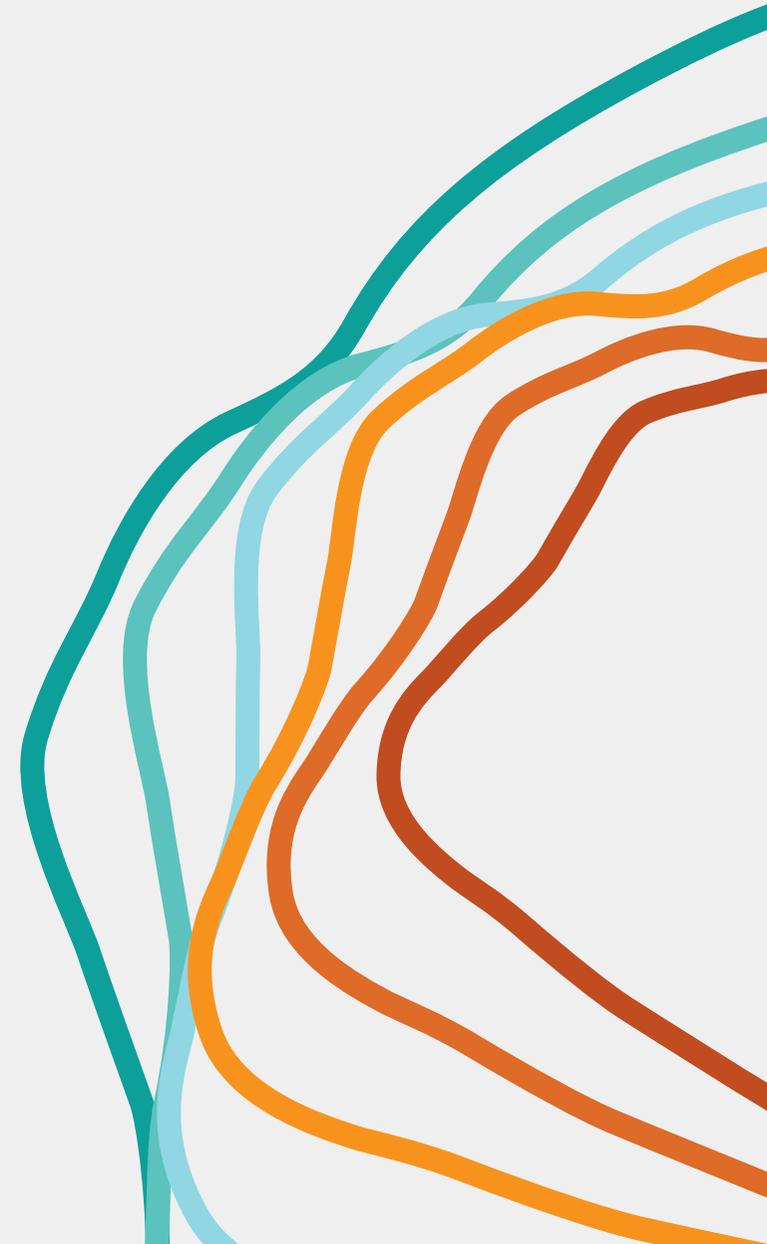
One of the mineral filler's most crucial characteristics is its humidity. Every EcoPiren® grade is packed in the way excluding any possibility of environmental water consumption.

The majority of ACP Panels are flame retardant nowadays. Such panels are most frequently classified using EN13501-1 Standard and most common type is B1.

This type of the panel can be produced using flame retardant filled polymer as the middle layer. The role of flame retardant can be fulfilled by aluminum hydroxide (ATH) and magnesium hydroxide (MDH). Unfortunately, nature of ATH restricts processing temperature above 180° C, which limits the production speed.

EcoPiren® magnesium hydroxide on the contrary can be processed at temperatures up to 300° C and thus allows for easier mixing and faster production due to increased processing temperature.

Basic formulations for B1 class panels are presented below.



# Application

Recently a lot of work has been devoted by the industry to develop the A2 class ACP. The filler content in polymer middle layer has to be much higher in comparison with the B1 class in order to obtain sufficient flame retardancy.

It is essential for such compound to be processable. For such application there are special coarser grades of EcoPiren<sup>®</sup>, which in combination with other fillers allow to obtain convenient viscosity and to pass A2 certification. For additional information please contact us via request form on website.

## *Basic formulations of LDPE-based ACP middle layer compounds*

Component	Comment	Content	
<b>Polymers</b>			
LDPE, MFI 3-4	Any grade	21	
LDPE, MFI 10-15	Any grade		14
LDPE-g-MAH	Fusabond E226	2	2
<b>Fillers</b>			
EcoPiren <sup>®</sup> 15R		75	82
<b>Additives</b>			
EVA wax	Viscowax 353	2	2
<b>Total</b>		<b>100</b>	<b>100</b>
<b>Properties</b>			
<b>Properties</b>	<b>Standard</b>	<b>Value</b>	
Density, g/cm <sup>3</sup>	Internal method	1,72	1,80
MFI at 190° C/21,6 kg	ISO 1133	32	20
LOI, %	ASTM D2863	42	65

# EcoPiren<sup>®</sup> advantages

- Very high concentration of magnesium hydroxide part in comparison with other brucite based products.
- High thermal stability – high processing temperature and production speed.
- Allows to obtain high flame retardancy class up to A2.
- Best price/performance ratio on the market.

By choosing EcoPiren® products you ensure best technical support for application of product and receive a possibility to develop a custom solution with individual properties.

**Please contact us via request form.**



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