



# PENTA EC 4111

## Cellulose ether

Technical Data Sheet October 2015

---

### DESCRIPTION

**Penta EC 4111** is a cellulose ether with medium viscosity quickly soluble in water both in a neutral and alkaline system.  
This feature makes it usable in the preparation of both cement and lime-based and gypsum-based adhesives and smooth finishes.  
It modifies their rheology by improving viscosity and water retention.

### USE

Penta EC 4111 is a direct evolution of Penta EC 40 whose performances have been condensed in a single molecule so increasing the possibilities of improvement and of formulation evolution.  
At the state Penta EC 4111 allows obtaining high viscosity and excellent thixotropy. Moreover, keeping all other conditions unchanged, it allows reducing the mixing water around 1-2% if compared to the best products on the market.  
This allows improving the mechanical strength and in particular the tensile adhesion strength of tile adhesives after freeze-thaw cycles, after heating cycles and after water immersion cycles.  
It also enlarges the filming time and the thickness of the film always remain very thin so that it can be broken with very low pressure.  
This allows to respect the parameters stated by the new EU standards more easily.  
The same considerations can be made in terms of formulation economy without losing high quality.

### TECHNICAL DATA

	Data	Method
<b>Composition:</b>	Hydroxipropyl methylcellulose	Visual
<b>State:</b>	Powder	Visual
<b>Colour:</b>	Ivory white	Visual
<b>Bulk Density:</b>	0.450±0.100 kg/dm <sup>3</sup>	IST. 10.07
<b>Granulometry:</b>	Min.95% < 0.300 mm	IST. 10.09
<b>Humidity :</b>	Max. 4.0%	IST. 10.04
<b>Water solubility:</b>	Totally soluble	IST. 10.21

	Data	Method
<b>Feature of the water solution</b>	<b>Potential of hydrogen (pH):</b>	7.0 – 7.5 IST. 10.05
	<b>Water retention:</b>	Min. 65% after 8 minutes IST. 10.08
	<b>Viscosity at 20°C:</b>	25.000 ± 30.000 mPa.s (Brookfield RV solution 2%, spindle 6, 20 rpm) IST. 10.30
	<b>Surface activity:</b>	Weak

**DOSAGE**

The recommended dosage of **Penta EC 4111** in cement-based adhesives ranges between 0.25-0.50% of the dry mixture, depending on the expected final characteristics. Anyway, it is advisable to carry out preliminary tests on the specific mixtures, including any other additives.

**STORAGE AND VALIDITY**

**Penta EC 4111** has 12 months validity beginning with delivery, if it is stored in a dry place and in the original bags kept perfectly closed. Should moisture be absorbed by the product, this does not affect its efficaciousness, but it makes its dosage difficult and the distribution in the finished mixture not homogeneous. It is therefore advisable to close bags carefully after each collection.

**PRECAUTIONS**

**Penta EC 4111** is normally harmless in contact with skin and easily removable with water and soap. In case of contact with eyes it causes them to redden, but the trouble disappears by washing them with running water. Inhalation can cause a slight irritation of the first part of the respiratory tract, so it is advisable to use a dust mask. In case of accidental loss it must be picked up in the dry state and discharged in an authorised waste dump. Dry-clean the surfaces avoiding the use of water: it makes surfaces slimy and dangerous

**PACKAGING**

20-kilo paper bags

The specifications stated in this report have been got either through standardized tests and rules or their modifications following Pentachem systems. The methods applied can be requested to our technical service.

All the data stated in this technical sheet are based on our knowledge and experience. However, before using the item differently from indicated, it is advisable to carry out preventive tests. In any case, PENTACHEM does not assume any responsibility for any damage or defect caused by the use of our products, as the employment conditions are not under our control. We also inform that our technical service is at our customers' disposal for any information concerning the correct employment of our products.