

# CALPRENE H6110

Our solution for ABS plastic upcycling

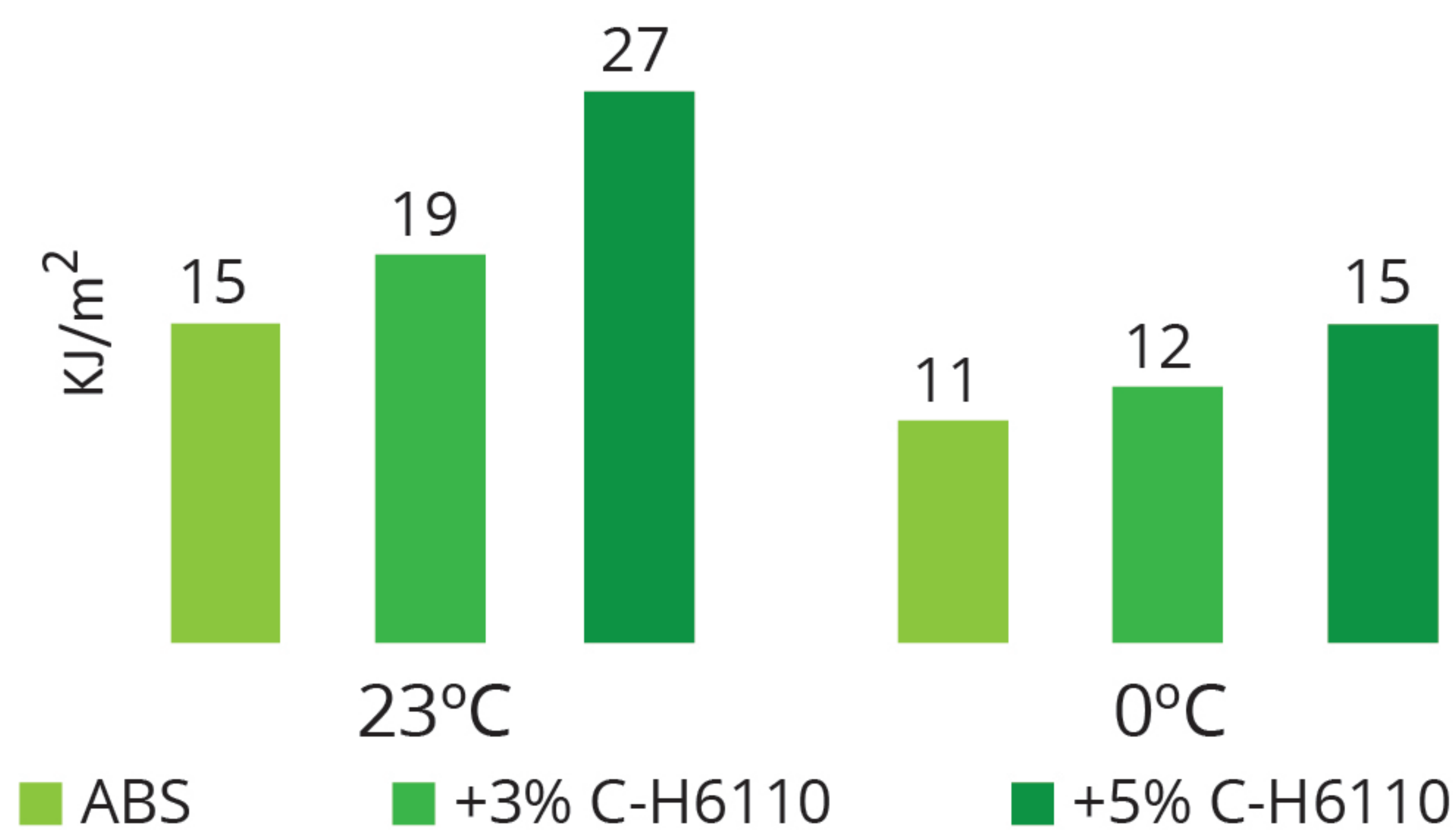


ABS is one of the most popular polymers used in automotive sector. Unfortunately, the lack of properties that remain after the recycling process makes it difficult to reuse these polymers for upcycling.

**Calprene H6110** is a 70/30 ethylene-butylene/styrene thermo-plastic copolymer, polymerized in solution and has a linear structure with excellent ozone resistance. The use of **Calprene H6110** as an additive in small concentrations shown below increases improvements in properties such as impact resistance and flowability.

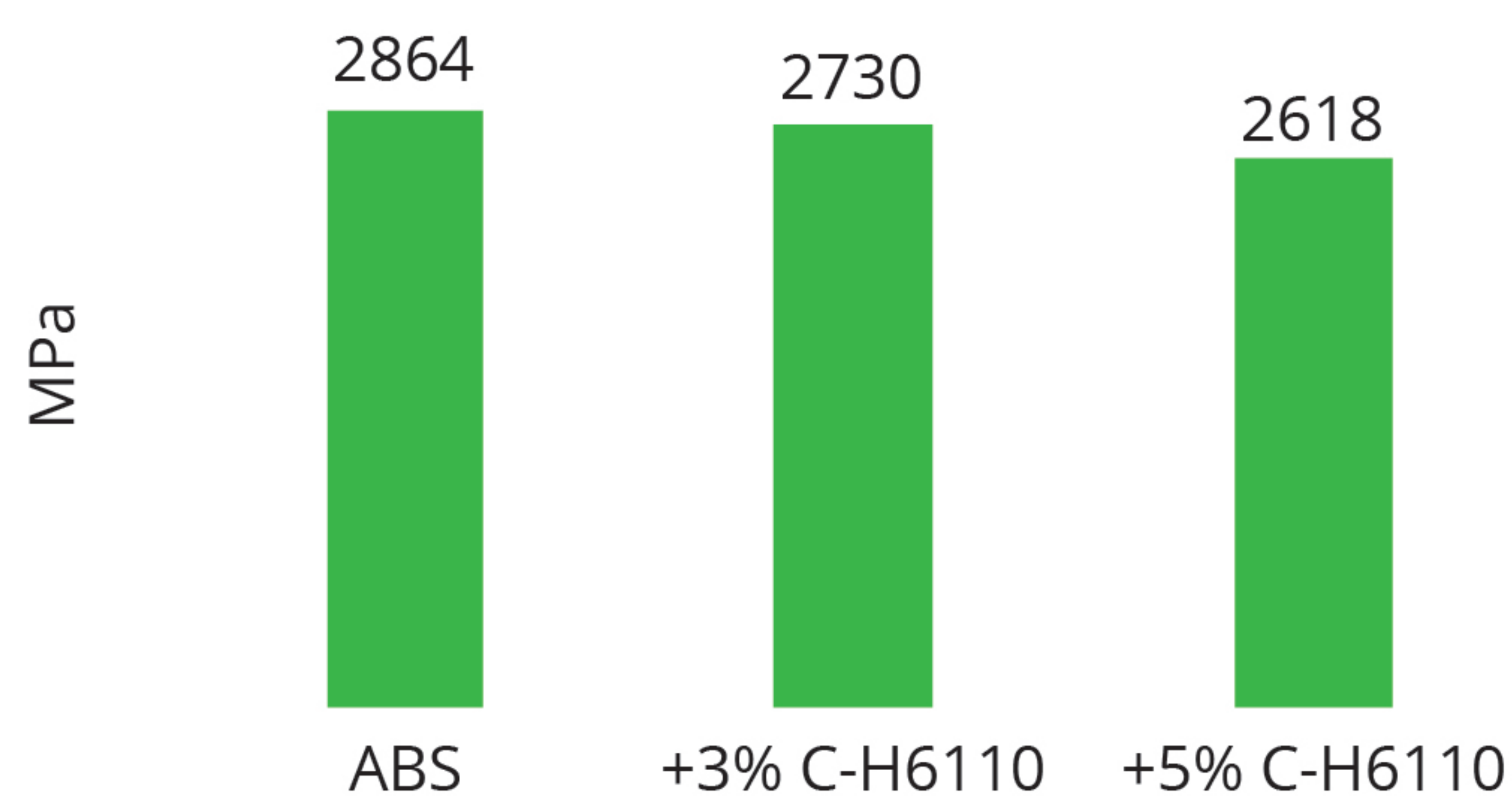
Calprene H6110 Properties	Test Method	Value
Total solution viscosity (20%, 25°C), cP	MA 04-3-064	470
Volatile matter, % max.	ASTM D5668 0	0.5
Yellowness index, max	ASTM E-313	3
Total styrene (on non-hydrogenated polymer), %	MA 04-3-062	30
Saturation, % min.	NMR	99

## Impact Charpy resistance (notched) at different temperatures with C-H6110 (UNE 179-1:2011)



Only 5% of Calprene H6110 increases the impact resistance of the material and is improved by 73%.

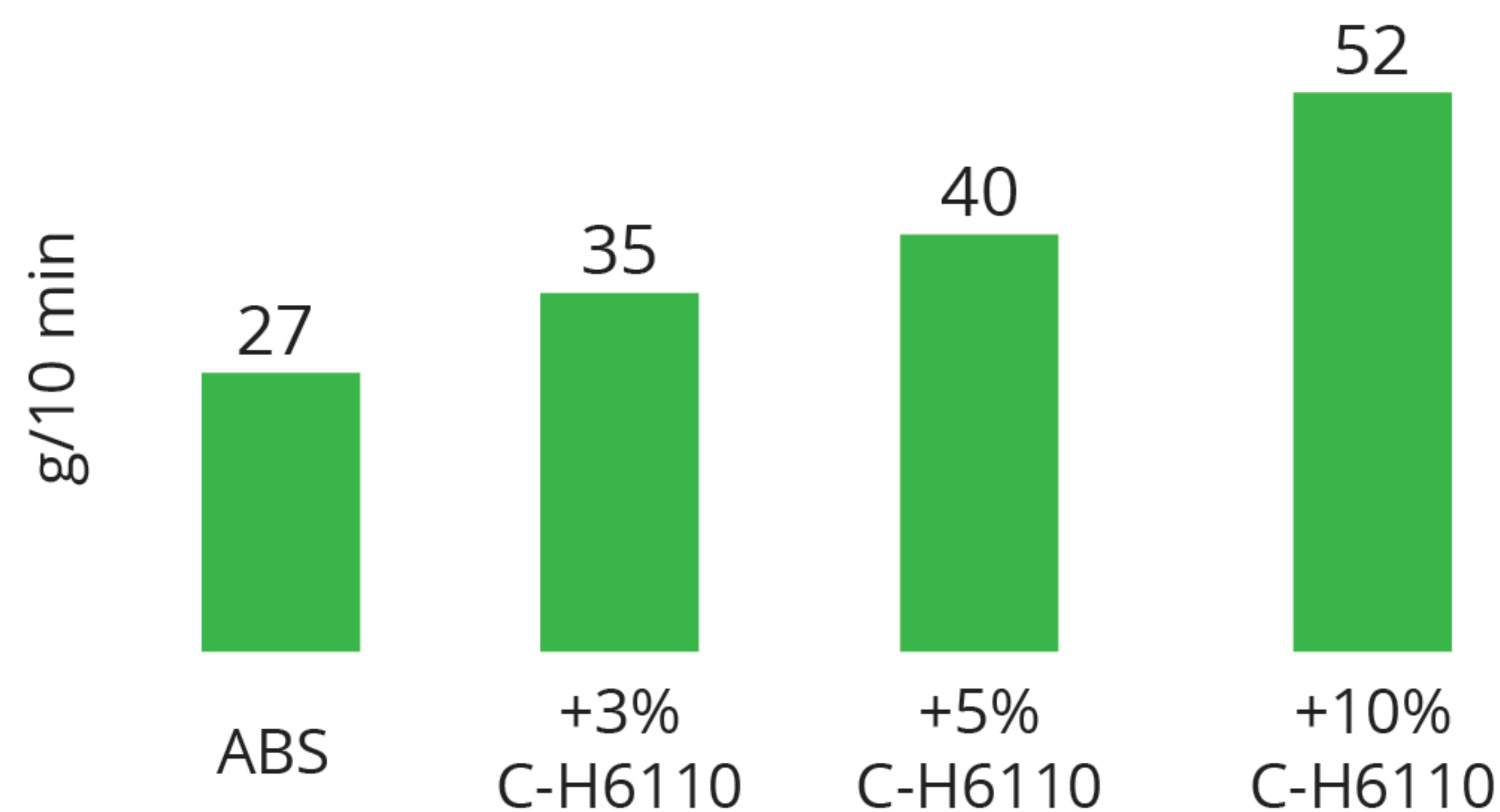
## Flexural modulus (ASTM E-691 2008)



The flexural modulus decreases as a result of the elasticity improvement.



## Melt Flow Index (230°C/10 kg) (ASTM D 1238-13)



The flowability is improved due to the presence of Calprene H6110.



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# CALPRENE 700

*Innovating recycled polystyrene for the future*

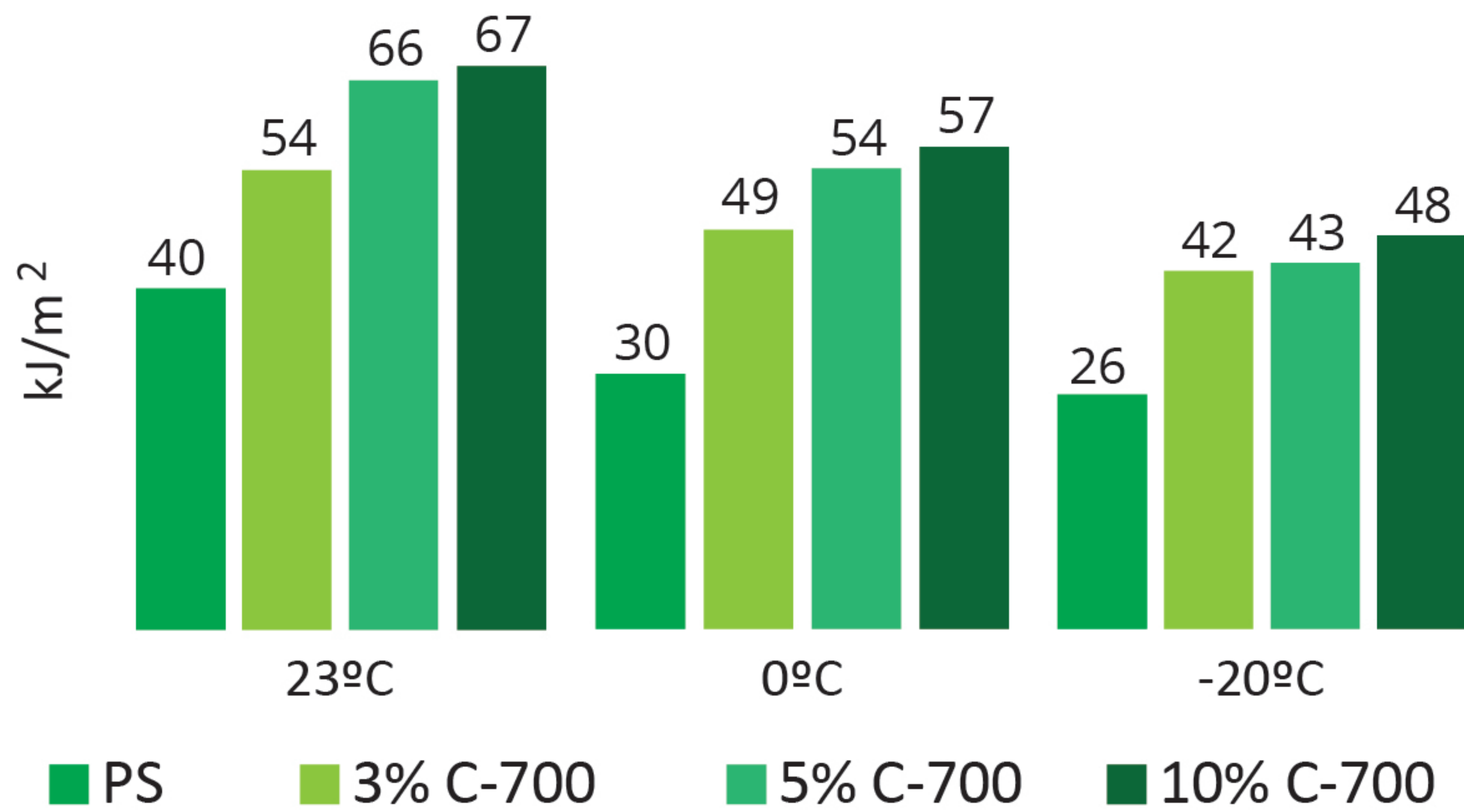


Climate change and plastic residue has become a main concern and is the center of attention around the globe. As a result, the demand of recycled plastics and recycled materials with improved properties has increased significantly.

In order to combat this, we have developed Calprene 700 which is a 70/30 butadiene/styrene thermoplastic copolymer, polymerized in solution and has a linear structure. Recycled PS compounds mixed with **Calprene 700** shown below displays an increase in impact resistance at room and extremely low temperatures.

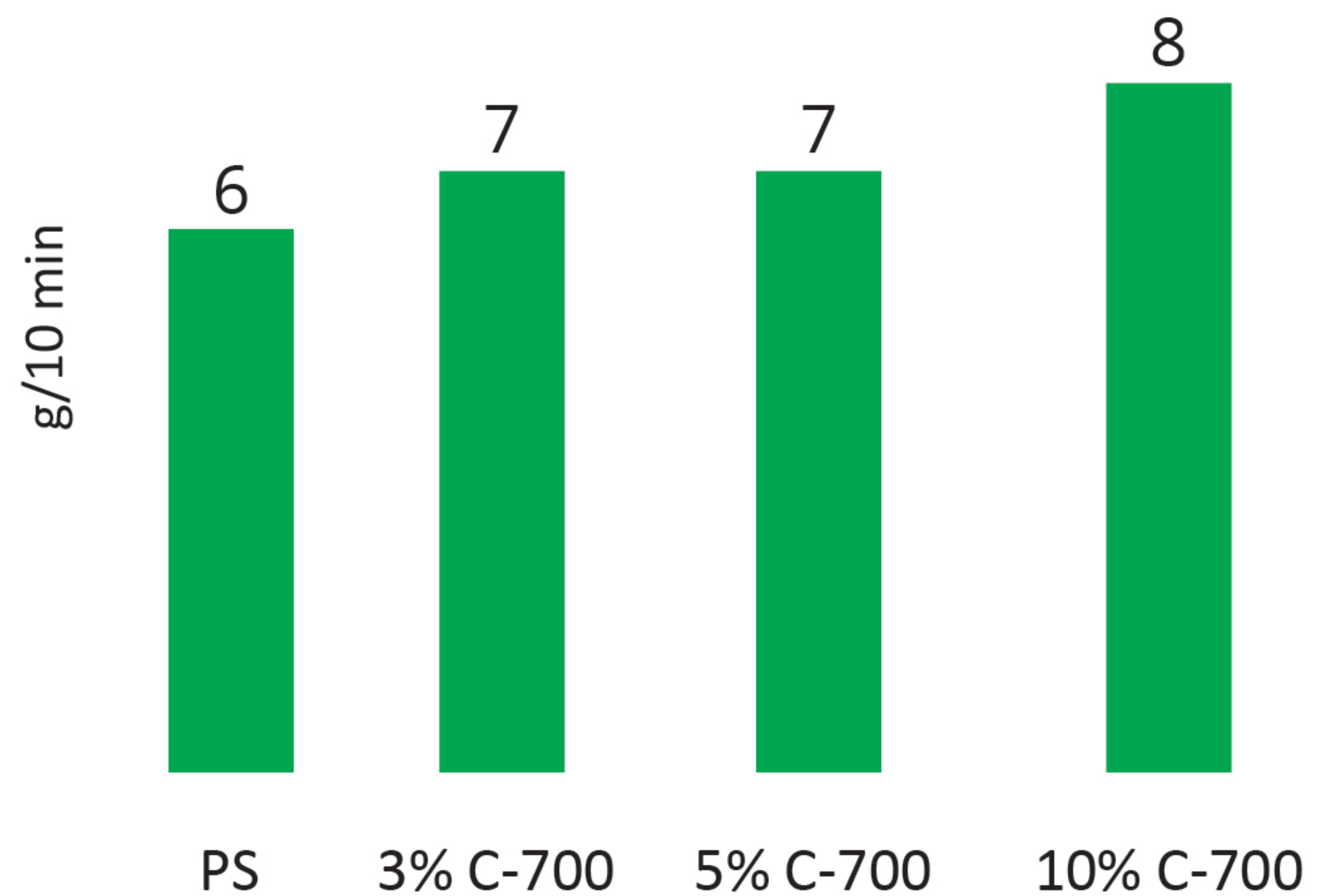
Calprene 700 Properties	Test Method	Value
Melt flow index (190°C, 5kg), g/10 minutes	ASTM D1238	5
Volatile matter, % max.	ASTM D5668	0.5
Yellowness index, max	ASTM E-313	3
Total styrene (on polymer), %	MA 04-3-062	30
Hardness, Shore A	ASTM D2240	70

**Charpy impact resistance (unnotched) (UNE 179-1:2011)**



The increase is attained with only 3% of Calprene 700. These results are also obtained at low temperature.

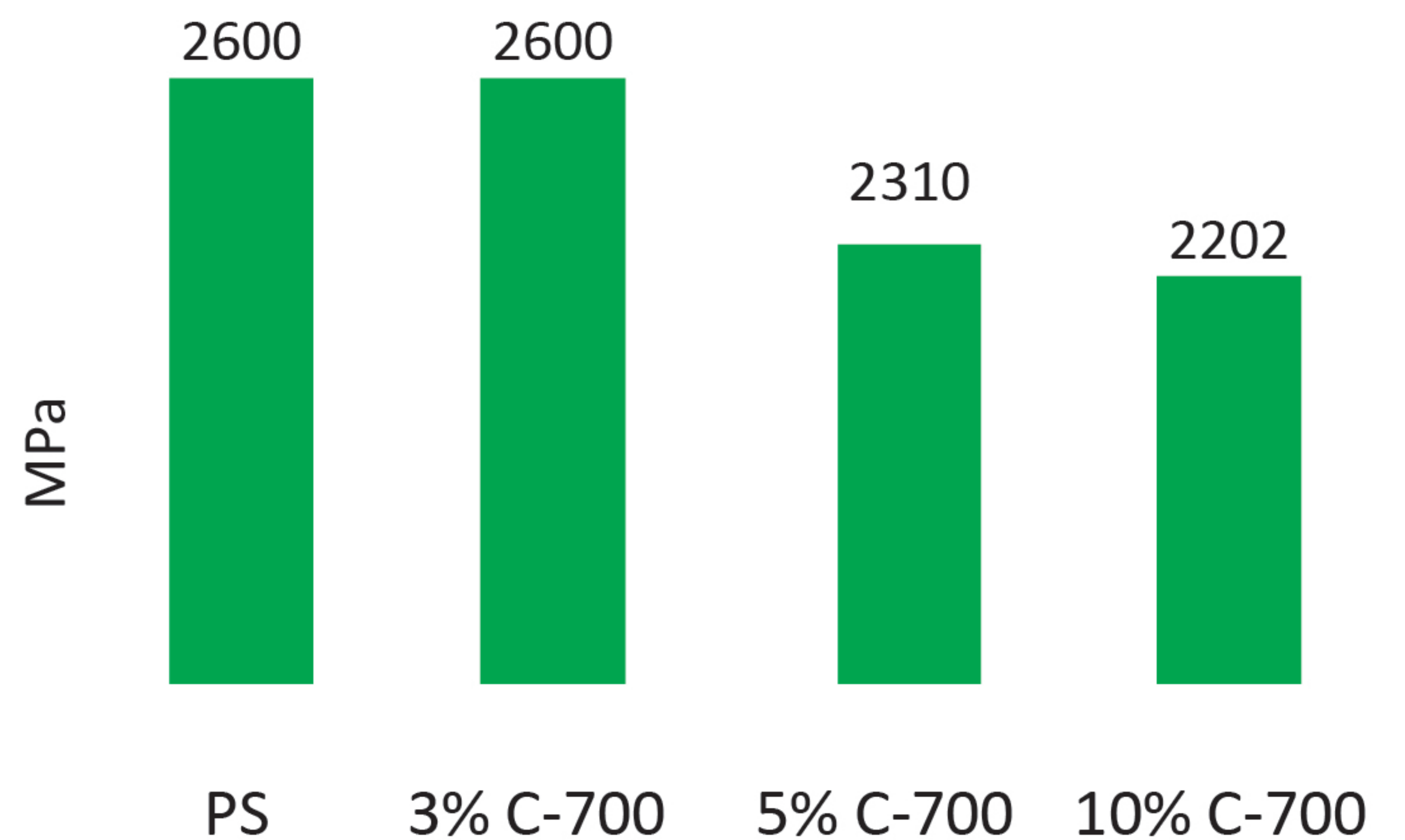
**MFI 190°C/5 kg (ASTM D 1238-13)**



The MFI is increased due to the presence of Calprene 700.



**Flexural modulus (ASTM E 691 2008)**



The final product is also more flexible due to the presence of Calprene 700.