



# Datasheet

## TOFFY - 4360 / Expanded Polypropylene

### MANUFACTURER

CSP Chemical

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### PRODUCT DESCRIPTION

Expanded Polypropylene – Black

### SAFETY DATA SHEET

SDS-PLMR-EPP

### DELIVERY FORM

- Big Bag
- Bulk

### PARTICLE SIZE

Weight: 1 mg

Size: 2 – 3,5 mm

### QUALITY SPECIFICATIONS

Bulk Density (g/L):  $60 \pm 3$

Moulded Density (g/L): 70 – 80 - 90 (according to production method)

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## PHYSICAL PROPERTIES

-----	Test Method	Unit	Test Result			
Moulded Density	ISO 845 : 2010	g/L	70	80	90	95
Compressive Strength	ISO 844 : 2014	kPa	480	520	650	680
25% strain						
50% strain						
75% strain						
Tensile Strength	ISO 1798 : 2009	kPa	930	960	1050	1100
Tensile Elongation		%	16	16	15	13
Compression Set 25% Strain – 22 Hours – 23 °C	ISO 1856 : 2009 Method C	%	10	10,5	10,5	10,5
Thermal Conductivity	EN 12667:2001	W/mK	0,042	0,044	0,045	0,046
Burning Rate (mm/min)	ISO 3795 : 1989	mm/min	40	35	30	25
	UL94	Material is in conformity area under HBF standart.				

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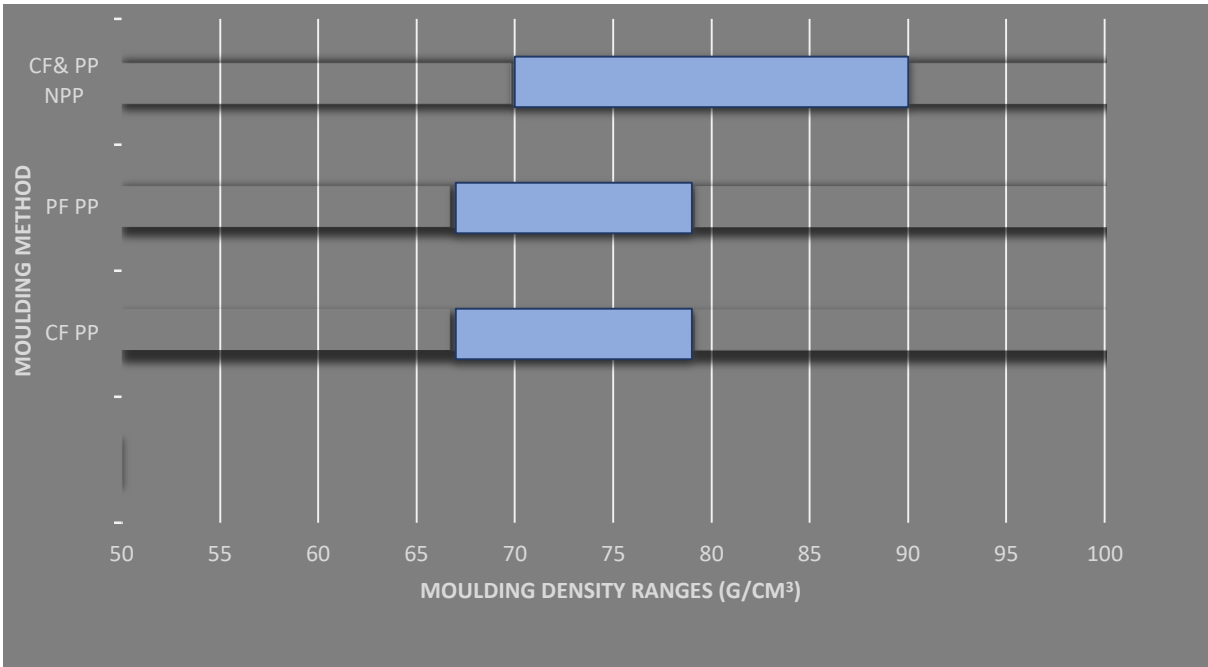
## MOULDING PROCESS

EPP beads can be moulded using the process that written below;

- Crack (CF) and Pressure Fill (PF) processes.

Note that;

- With pressure fill, pre-pressured (PP) or non-pre-pressured (NPP) material can be used to achieve desired moulded densities.
- Crack filling with pre-pressured material is recommended.
- Using different moulding methods, three different moulding performance can be emphasised.



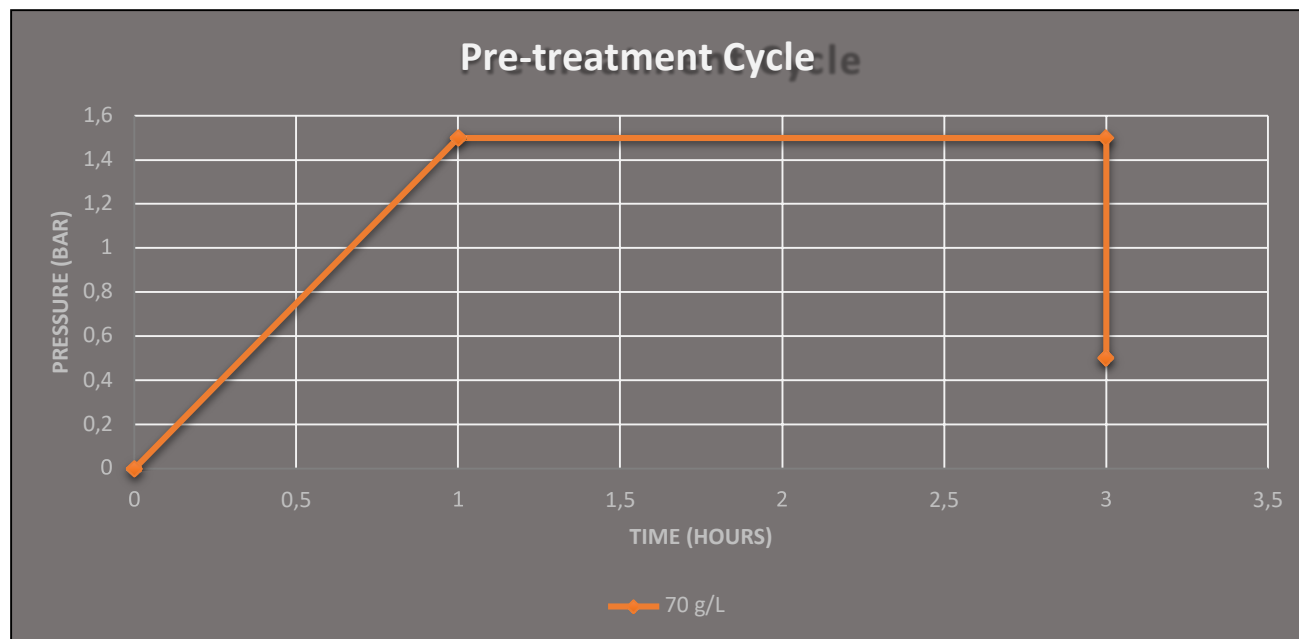
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## Pre-Pressured:

Suggested PP cycle (recommended compressed air at 23 °C):



For 70 g/l: PF 1 hours up to 1,5 bar, hold 2 hours at 0,5 bar, decrease and maintain at 0,5 bar throughout production

For 70 g/l: PF 1 hours up to 1,5 bar, hold 2 hours at 0,5 bar, decrease and maintain at 0,5 bar throughout production

The pre-pressured cycle will be altered based on the moulding process, density and geometry:

- Increase Pre-Pressuring time, pressure or temperature in order to improve surface appearance and filling quality in PF. As a result moulded density will be reduced.
- Reduce Pre-Pressuring time, pressure or temperature in order to improve fusion or filling quality in CF.

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Increasing the temperature of pressure tanks by 20 °C with ambient temperature will reduce the pre-pressure time significantly, without changing the internal cell pressure. This can be very pragmatic.

## Processing:

Cycle can be adjustable based on moulding process, density and part geometry:

- If internal cell pressure is too high, this may cause to a fusion issue. In this case, decrease time, pressure or temperature to improve fusion.
- Increase time, pressure or temperature to reduce moulded density and improve aspect.
- Operating the pressure tank above ambient temperature up to maximum of 50 °C, significantly reduce pre-pressure time.

## Post-treatment:

Parts with moulded densities below 50g/l (depending on the part dimensions), are recommended to be post-treated at 80°C for 3 to 8 hours. This helps to remove water content, as well as ensuring dimensional stability and a geometric shape.

For moulded densities above 50g/L, post-treatment is not required. Stabilisation to environmental conditions would be achieved in 4 hours. Dimensional quality testing is recommended after minimum 4 hours .

## Shrinkage:

Typical shrinkage values are between 2% -2,6%. Increasing the moulded density tends to reduce shrinkage.

## Storage:

- The Temperature must be bigger than 15 °C.
- Indoor storage is recommended.
- Preferably keep the material in an indoor silo for 24 hours before moulding. This also avoids condensation

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## Disclaimer

*All data in this document are for general information purposes only. They are based upon tests performed to our best knowledge and experience, using typical EPP moulding equipment under CSP's standard conditions. As many properties will depend largely on part shape and size as well as on moulding parameters, these data can only be considered as indicative. Any data herein may change without prior notice. While we endeavour to keep the information up to date and correct according to the state of the art, we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability or suitability with respect to these data. Any reliance you place on this information is therefore strictly at your own risk. The user itself is responsible for testing the products in order to find out and to determine whether these are suitable for the application as well as to observe any industrial property rights and existing laws and regulations. In no event will we be liable for any loss or damage (including, without limitation, indirect or consequential loss or damage, or any loss or damage whatsoever arising from loss of profits) arising out of, or in connection with, the use of this information and/or the use, handling, processing or storage of this product*

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