



TECHNICAL DATA SHEET (TDS)

**FullCycle™ PCR HDPE SMR2102NC**

100% PCR HDPE, natural color, food grade, for injection molding.

DESCRIPTION

**FullCycle™ PCR HDPE SMR2102NC** is a 100% Post-consumer recycled (PCR) HDPE resin. It uses 100% natural color caps from drink water bottles as the input raw materials, and is produced by sorting, regrinding, cold washing, hot washing, flakes sorting, melting, filter and extrusion, pelletization, deodorization. The product complies with GRS (Global Recycled Standard) certification and food contact materials (FCM) regulations.

PROPERTIES

Item	Typical Value	UoM	Standard
Density	0.94	g/m <sup>3</sup>	ISO 1183
MFI (190°C, 2.16kg)	3.5-5.5	g/10min	ISO 1133-1
Tensile Strength	20	MPa	ISO 527-2
Tensile Modulus	810	MPa	ISO 527-2
Elongation at break	>120	%	ISO 527-2
Flexural Strength	22	MPa	ISO 178
Flexural Modules	860	MPa	ISO 178
Charpy Impact Strength, notched (23°C)	7	KJ/m <sup>2</sup>	ISO 180
Charpy Impact Strength, Unnotched (23°C)	96	KJ/m <sup>2</sup>	ISO 180
Melting point	130	°C	ISO 11357
Filter mesh size	200	Mesh	Internal
Black dots	> 1mm	0	Internal
	0.5 ~ 1mm	< 3	
	0.2 ~ 0.5mm	< 5	
Ash content	< 0.1	%	ISO 3451-1
Moisture content	< 0.2	%	ISO 15512
Heat Deflection Temperature(0,45MPa)	68	°C	ISO 75-2

\* Data shown above are representative values for reference purposes only, and not to be construed as specifications.

## APPLICATIONS

Caps  
Other injection parts

Toys

## COMPLIANCE

FDA  
REACH (242 SVHC)  
BPA Free

EU10/2011  
RoHS Directive (EU) 2011/65  
PFAS Free

## PRODUCTS FEATURES

Good color performance  
Odorless

Low impurities  
Recyclable

## PACKING

Trial pack: 25KG/bag.  
Mass production: 25KG/kg or 800KG/bag.

## PICTURE



## PROCESSING CONDITIONS

**FullCycle™ PCR HDPE SMR2102NC** is easy to process with standard injection moulding machines.

Following parameters should be used as guidelines:

Melt temperature: 160- 200 °C  
Holding pressure: 200- 500 bar  
Mould pressure: 60- 100 MPa  
Mould temperature: 30- 50 °C  
Molding time: 30- 60 s

Typically, do not need to be dried before use.

The above information is for reference purpose only. Make sure to adjust the molding parameters according to the machine, mold, and other product requirements.

## **STORAGE**

**FullCycle™ PCR HDPE SMR2102NC** should be stored in dry conditions at temperatures below 50°C and protected from UV-light. Improper storage can initiate degradation, which results in odor generation and color changes and can have negative effects on the physical properties of this product.

More information on storage can be found in Material Safety Data Sheet (MSDS) for this product.

## **RECYCLING**

The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.

## **DISCLAIMERS**

This information contained herein is based on the data available to us and is believed to be correct. However, SMART makes no warranty, expressed or implied, regarding the accuracy of these data or the results to be obtained from the use thereof. Each user of the products shall convince himself through all available sources (including finished product testing in its appropriate environment) of the suitability of the products supplied for its particular purpose.

## **ADDRESS**

**Shanghai Smart New Materials Co., Ltd**

19B, No. 985 Dongfang Road, Pudong District, Shanghai, 200122

Tel.: +86 21 6859 0520

Email: [info@sumai99.com](mailto:info@sumai99.com)

Website: [www.sumai99.com](http://www.sumai99.com)