Product data sheet, January 2020

RPC black 900

Solid polycarbonate sheet

S Line
Standard

Your benefits:

- high impact strength
- applicable in a wide range of temperatures
- good fire behaviour

RPC black 900 are black sheets made from recycled polycarbonate. Like conventional polycarbonate sheets, **RPC black 900** sheets offer high impact strength over a wide temperature range with good fire behaviour.

Applications:
RPC black 900 sheets are suitable for vacuum formed parts for material containers and pallets, all types of vehicle trim, industrial paneling and street furniture.

RPC black 900 sheets can be thermoformed and show good weather resistance.

	Test Conditions	Typical Values[1]	Unit	Test Method
PHYSICAL				
Density		1200	kg/m³	ISO 1183-1
Water absorption saturation	water at 23°C	0.3	%	ISO 62
Water absorption equilibrium	23°C, 50 % relative humidity	0.12	%	ISO 62
MECHANICAL				
Tensile modulus	1 mm/min	› 2200	MPa	ISO 527-1,-2
Yield stress	50 mm/min	› 55	MPa	ISO 527-1,-2
Yield strain	50 mm/min	5	%	ISO 527-1,-2
Nominal strain at break	50 mm/min	› 10	%	ISO 527-1,-2
Charpy impact strength	23°C, unnotched	no break	kJ/m²	ISO 179-1eU
THERMAL				
Vicat softening temperature	50 N, 50°C/h	148	°C	ISO 306
Thermal conductivity	23°C	0.2	W/(m.K)	ISO 8302
Coefficient of linear thermal expansion	23 bis 55°C	0.65	10^{-4}/K	ISO 11359-1,-2
Temperature of deflection under load	1.80 Mpa	128	°C	ISO 75-1,-2

[1] These values are not intended for specification purposes.

Product data sheet, January 2020

RPC black 900

Solid polycarbonate sheet

Exolon Group S-Line, the standard product line, represents a range of certified quality products which offer the reliable solution for most applications.

Availability:
RPC is available in thicknesses of 2-6 mm. Sheets can be supplied with 2 smooth sides **(RPC black 900)** or with 1 patterned side **(RPC black 900 C or RPC black 900 G)**.
Minimum order quantity: on request.

Sizes:
Available extrusion widths:

2 smooth sides:	1,250/ 1,650/ 2,050 mm.
1 patterned side:	1,250/ 1,650 mm

Other widths on request.

Permanent Service Temperature:
Maximum service temperature without load in air: 120 °C
Minimum service temperature without load: -100 °C

Glow wire flammability test (*):

	Test method	2 mm	4 mm
GWFI (flammability index)	IEC 60695-2-12	960 °C	960 °C

(*) Fire certificates are limited in time and scope, always check if the mentioned certificate is valid for the purchased Polycarbonate sheet type at the date of delivery. Polycarbonate sheets may change their fire behavior due to ageing and weathering. The indicated fire rating was tested on new / unweathered Product in accordance with the indicated fire classification standards.

Machining:
Due to its excellent properties an **RPC black 900** sheet is easy to machine with usual tools. Sawing, drilling, routing, shearing and punching can be applied. Always use sharp tools that are suited for machining plastics.

Thermoforming:
Thorough predrying of **RPC black 900** sheets is essential for all thermoforming techniques in which the sheet temperature will rise above 160 °C. The recommended procedure is to use an air circulating oven set at 120 °C for 4 to 24 hours, depending on sheet thickness. An **RPC black 900** sheet can be vacuum formed at temperatures of 175 – 205 °C. Use temperature controlled (120 °C) aluminium or steel moulds. A good release from the mould can be obtained by providing a draft angle of 4 to 6°.

Assembling:
Parts made of **RPC black 900** can be assembled with other plastics, metals and other materials by means of glueing, welding and several mechanical fastening techniques.

Painting and printing:
RPC black 900 sheets can be painted or printed with several standard techniques. Except for cleaning, no preliminary surface treatment is necessary. To avoid influence on the impact strength of **RPC black 900** sheets, paints must be suitable for use on polycarbonate. Suitable products are available from several manufactures of inks and paints, whose instructions must be carefully followed.

Chemical resistance:
RPC black 900 sheets have good resistance against mineral acids up to high concentrations, many organic acids, oxidising and reducing agents, mineral and animal greases and oil, neutral and acid salt solutions, saturated aliphatic and cycloaliphatic hydrocarbons and alcohols (except methyl alcohol). They are partially soluble in aromatic hydrocarbons and soluble in many halogenated hydrocarbons (methylene chloride and ethylene di-chloride are good solvents). Strong alkaline substances such as ammonia and amines decompose it. **RPC black 900** sheets have good resistance against most detergent based household cleaners.

Exolon Group also produces multiwall sheets in polycarbonate (Makrolon® multi UV), and solid sheets in polycarbonate (Makrolon® GP) and in polyester (Vivak® and Axpet®). For more information, take a look at www.sheets.covestro.com.

Exolon Group GmbH
Rommerskirchener Str. 21
50259 Pulheim
Germany

www.exolongroup.com
sales@exolongroup.com

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance, information and recommendations to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by Exolon Group. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.

Makrolon® is a registered trademark, owned and licensed by Covestro Group