

# DONACARBO

## Compounding of thermoplastics

### Description

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Donacarlo S carbon fibers are used as additives to improve the properties of thermoplastic materials such as ABS, PP, PPS, PFA, PTFE etc.

Advantages resulting from the addition of Donacarlo S carbon fibers

- Reduction of electric resistivity
- Improvement of chemical stability
- Enhanced thermal stability
- Reduction of wear in combination with other materials
- Reduction of shrinkage

### Application

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Pump housings for pumps used in the chemical industry, plastic parts in electric or electronic appliances such as CD players which need antistatic properties, high performance sealings in the automotive sector etc.

### Type of fiber

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Depending on the compound we recommend Donacarlo S 241, S 242, S 244, SG 241.

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## Chemical stability

The Donacarlo S fiber is especially stable against non-oxidating reagents.

Chemicals	Concentration [%]	Time[h]	Temperature [°C]	Stability	
				S-Fiber	SG-Fiber
HCl (hydrochloric acid)	35	150	60	+	+
	36	96	70	+	*
	36	312	70	+	*
HNO <sub>3</sub> (nitric acid)	30	150	RT	0	+
	61	48	70	0	*
	61	120	70	-	*
	61	150	60	-	+
CrO <sub>3</sub> (chromic acid/ Chromium oxide)	35	150	RT	+	+
	50	150	RT	+	+
NaOH (sodium hydroxide)	50	150	40	+	+

Sample: Donacarlo S-Faser, carbonized, S-210 (mat)

Donacarlo SG-Faser, graphitized, SG-210 (mat)

Method: Osaka Gas Chemicals (tensile strength and O<sub>2</sub> concentration)

Mark: + excellent

0 fair

- poor

\* no measurement

Technical data established by OSAKA GAS Co., Ltd R & D Center, Osaka, Japan. Detailed health and safety information please find in the correspond-ing material safety data sheet.

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## Micro Elements

Donacarlo S has a minimum carbon content of 95%. Donacarlo SG has a minimum carbon content of 99%.

Elements	Donacarlo S	Donacarlo SG	Method
B (boron)	< 10 ppm	< 10 ppm	Colorimetry
Mg (magnesium)	0,2 ppm	< 0,1 ppm	ICP-MS
Al (aluminium)	0,8 ppm	0,1 ppm	ICP-MS
K (potassium)	4 ppm	no measurement	Atomic Absorption
Ca (calcium)	1 ppm	no measurement	ICP-MS
Cr (chrome)	1,6 ppm	0,6 ppm	Atomic Absorption
W (wolfram)	< 0,1 ppm	< 0,1 ppm	ICP-MS
Ni (nickel)	1,9 ppm	1,1 ppm	ICP-MS
SiO <sub>2</sub> (silica/ anhydride)	36 ppm	no measurement	ICP-MS

These data were established by Osaka Gas Chemicals in Japan.  
The milled Donacarlo fibers S 249, S 241 and SG 249 were examined.  
Donacarlo S (milled and carbonized fibers) contain 200 – 300 ppm Fe.