

# Vacuum Suction Cups



## Material of the Suction Cup

### Material Overview

Description	Abbreviation	NBR	NBR-AS	SI (SI-HD)	SI-AS	NK	HT1
	Chemical designation / trade name	Nitrile caoutchuc (AS = antistatic)		Silicone caoutchuc (AS = antistatic)		Natural rubber	High temperature material
	Color / coding	black, gray, blue, light blue	black with blue dot	nature (trans-lucid), green	black with red dot	gray, light brown	blue
Chemical resistance	General weathering resistance	●●	●●	●●●	●●●	●●	●●●
	Ozone resistance	●	●	●●●●	●●●●	●	●●●●
	Oil resistance	●●●●	●●●●	●●	●●	●	●●●●
	Fuel resistance	●●	●●	●	●	●	●●
	Alcohol resistance, ethanol 96%	●●●●	●●●	●●●●	●●●	●●●●	●●●●
	Solvents resistance	●●	●●	●●	●●	●	●●
	General resistance to acids	●	●	●●	●●	●●	●
	Bases resistance	●	●	●●	●●	●	●
	Steam resistance	●●	●●	●●	●●	●	●●●
Mechanical characteristics	Wear resistance	●●	●●	●(●)	●	●●	●●●
	Resistance to permanent deformation	●●	●●	●●	●●	●●●	●●
	Tensile strength	●●	●●	●	●	●●	●●
	Specific resistance in [ $\Omega \times \text{cm}$ ]	–	$10^3$ to $10^6$ <sup>1)</sup>	–	$10^3$ to $10^6$ <sup>1)</sup>	–	–
	Shore hardness to DIN ISO 7619	40 to $80 \pm 5$	$55 \pm 5$	$40$ to $70 \pm 5$ <sup>2)</sup> ( $65 \pm 5$ )	$55 \pm 5$	$35$ to $55 \pm 5$	$60 \pm 5$
Temperature resistance <sup>3)</sup>	Short-term in °C (< 30 sec.)	-30° to +120°	-30° to +120°	-40° to +220°	-35° to +220°	-35° to +120°	-25° to +170°
	Longer-term in °C	-10° to +70°	-10° to +70°	-30° to +180°	-20° to +180°	-25° to +80°	-10° to +140°
Further characteristics	Target industry	Universal	(Universal), Electronics	Packaging	Packaging, Electronics	Wood, Packaging	Plastics, Glass
	Food grade according to CFR 21 §177.2600 FDA			✓			
	Leaving few marks						✓
	Absence of PWIS (paint-wetting impairment substances)	NBR-60, NBR-45					✓
	Cleanroom suitability	on request	on request	●●●(●)	on request	on request	●●●

<sup>1)</sup> Depending on size and geometry

<sup>2)</sup> After-bake of silicone 4 h/200 °C = ~+5 Shore A

<sup>3)</sup> Approximate value: depends on ambient temperature, application force, recovery time and wall thickness of suction cup

●●●● Excellent

●●● Very good

●● Good

● Poor to satisfactory

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HT2	ED	PU	VU1	PVC	FPM	EPDM	EPDM-MOS
High-temperature material	Elastodur	Polyurethane	Vulkollan® 4)	Polyvinylchloride	Fluor-caoutchuc	Ethylene-propylene-caoutchuc	Foam rubber made of Ethylene-propylene-caoutchuc
black	green, blue	blue	dark green	blue (translucid)	black with white dot	grey	black
●●●●	●●●	●●●	●●●	●●	●●●●	●●●●	●●●●
●●●●	●●●	●●●	●●●	●●●	●●●●	●●●●	●●●●
●●●●	●●●	●●●	●●●	●●●	●●●●	●● <sup>5)</sup>	●● <sup>5)</sup>
●●●●	●●	●●	●●	●	●●●●	●	●●
●●	●●●	●●●●	●●●●	●	●●	●●●●	●●●●
●●●	●	●	●	●	●●●	●●	●●
●●●	●	●	●	●●	●●●	●●●	●●●
●●	●	●	●	●●	●●	●●●	●●●
●●	●	●	●	●●●	●●	●●●	●●●
●	●●●(●)	●●●●	●●●●	●●●	●	●●	●
●●	●	●	●●	●	●●	●●	●●
●●	●●●(●)	●●●	●●●●	●●	●●	●●	●
-	-	-	-	-	-	-	-
65 ± 5	60 to 85 ± 5	55 ± 5	72 ± 5	50 ± 5	65 ± 5	55 ± 5	~15 <sup>6)</sup>
-10° to +250°	-40° to +100°	-40° to +130°	-40° to +100°	-30° to +65°	-10° to +250°	-35° to +130°	-35° to +100°
-5° to +200°	-25° to +80°	-30° to +100°	-30° to +80°	-15° to +50°	-5° to +200°	-25° to +100°	-25° to +70°
Glass, Solar, Metal	Packaging, Metal	Packaging	Metal, Packaging, Glass, Wood	Packaging	Glass, Solar, Metal	Glass	Metal, Wood
				✓			
	✓				✓		
	ED-85						
●●●	●●●(●)	on request	on request	on request	●●●	on request	on request

<sup>4)</sup>Vulkollan® is a registered trademark of Bayer AG

<sup>5)</sup>With slight oil wetting

<sup>6)</sup>Varies, for technical reasons, for foam rubber

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