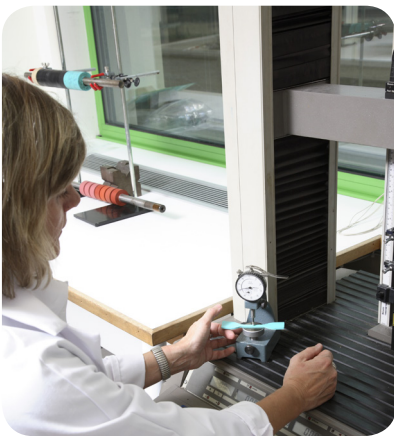


# A SELECTION GUIDE FOR ELASTOMERS IN FUNCTION OF THEIR APPLICATIONS

The tables below should serve as an aid in the selection of an elastomer in function of the conditions to which the application is subject.

Hannecard offers compounds of various elastomers. Your technical contact person will gladly assist you in the determining the suited product for your application.

## AN OVERVIEW OF THE VARIOUS ELASTOMERS WHICH HANNECARD IS OFFERING



Our laboratories are equipped with the most modern tools for testing the compatibility of our elastomers with your application.

We do tests on :

- Temperature
- Mechanical load
- Exposure to chemicals
- Dynamic performance

Symbol	Group name	Max. temp	Hardness Shore A	Important characteristics
<b>NR</b>	Natural rubber	80°C	25 to 90	<ul style="list-style-type: none"> <li>• Elasticity</li> <li>• Good resistance against abrasion and tear</li> <li>• Very good dynamical properties</li> </ul>
<b>SBR</b>	Styrene Butadiene Rubber	90°C	60 to 95	<ul style="list-style-type: none"> <li>• Excellent abrasion resistance</li> </ul>
<b>CR</b>	Polychloroprene (Neoprene)	100°C	15 to 90	<ul style="list-style-type: none"> <li>• Resistance against abrasion and tear</li> <li>• Good dynamical properties</li> <li>• Moderate resistance against acids, oils and solvents</li> </ul>
<b>NBR</b> <b>NIR</b> <b>XNBR</b>	Nitrile Butadiene Rubber	120°C	25 to 95	<ul style="list-style-type: none"> <li>• Excellent resistance against oils, greases and petroleum</li> <li>• Good general properties with the exception of heat resistance, which is rather limited</li> </ul>
<b>EPDM</b>	Ethylene Propylene	150°C	30 to 90	<ul style="list-style-type: none"> <li>• Very good resistance against acids, bases, oxydants and cetones, lacquers, varnishes and esters</li> <li>• UV and ozone resistant</li> </ul>
<b>CSM</b>	Hypalon (*)	135°C	45 to 95	<ul style="list-style-type: none"> <li>• Excellent resistance against acids, bases and ozone</li> <li>• Excellent resistance against abrasion and tear</li> </ul>
<b>IIR</b>	Butyl	140°C	50 to 70	<ul style="list-style-type: none"> <li>• Very good chemical resistance against acids, bases, oxydants, solvents, cetones, lacquers, varnishes, esters and ozon</li> <li>• Gas tight</li> <li>• Weak dynamical properties</li> </ul>
<b>Q</b>	Silicone	200°C	20 to 90	<ul style="list-style-type: none"> <li>• Non-stick properties</li> <li>• Resistant against high temperature and ozone</li> <li>• Very good electrical insulating properties</li> </ul>
<b>FKM</b>	Fluoro-elastomer	240°C	60 to 90	<ul style="list-style-type: none"> <li>• Excellent resistance against hydrocarbons, chlorinated solvents, aromatic solvents, acids, bases, oxydants, and vapor</li> <li>• Excellent temperature resistance</li> </ul>
<b>ECO</b> <b>CO</b>	Epichlorhydrine	120°C	70 to 95	<ul style="list-style-type: none"> <li>• Electric conductor</li> <li>• Moderate resistance against acids, bases, oils and solvents</li> </ul>
<b>ACM</b>	Polyacrylate	175°C		<ul style="list-style-type: none"> <li>• Good resistance against oils</li> </ul>
<b>HNBR</b> <b>XHNBR</b>	Hydrogenated nitrile	150°C	60 to 90	<ul style="list-style-type: none"> <li>• Very good general physical properties</li> <li>• Stability of hardness when used at high temperature</li> </ul>
<b>PU</b>	Polyurethane	80 - 150°C	15 to 98	<ul style="list-style-type: none"> <li>• Excellent resistance against abrasion, cutting en perforation</li> <li>• Good ozone resistance</li> <li>• Performances linked to the selected type of PU</li> </ul>
<b>Composite</b>	Epoxy Polyester	100 - 150°C	75 to 85 Shore D	<ul style="list-style-type: none"> <li>• Very high modulus and good physical properties</li> <li>• Good chemical resistance</li> </ul>

(\*) DuPont trademark

## RESISTANCE AGAINST LOAD

Legende	Natural rubber	Styrene-Butadiene Rubber	Polychloroprene (Neoprene)	Nitrile Butadiene Rubber	Ethylene Propylene	Hypalon (*)	Butyl	Silicone	Fluoro-rubber	Epichlorohydrine	Polyacrylate	Hydrogenated nitrile	Polyurethane
	NR	SBR	CR	NBR	EPDM	CSM	IIR	Q	FKM	ECO	ACM	HNBR	PU
<b>Physical characteristics</b>													
Tensile strength	***	++	***	++	++	++	▼	▼	++	▼	×	***	***
Rupture	***	++	++	▼	***	++	++	▼	▼	▼	×	++	***
Wearing	***	***	++	++	++	++	++	×	++	++	▼	***	***
Pressure	***	++	++	++	++	▼	▼	▼	++	++	▼	++	***
Resilience	***	++	***	▼	++	▼	▼	++	▼	▼	×	▼	++
Flexion	***	++	***	++	++	++	++	▼	×	++	▼	++	++
<b>Ageing behaviour</b>													
Air	▼	++	***	++	***	***	***	***	***	***	***	***	***
Light	▼	▼	***	▼	***	***	***	***	***	***	***	++	▼
Ozone	▼	▼	++	▼	***	***	***	***	***	***	***	++	***
<b>Temperature resistance</b>													
Heat	▼	++	++	++	***	++	++	***	***	++	***	***	*** to ▼
Flame	×	×	++	▼	▼	++	▼	++	***	++	▼	▼	▼
Cold	***	++	▼	▼	***	++	++	***	++	++	▼	▼	++
<b>Electrical insulation</b>													
Resistivity	***	++	▼	▼	++	▼	++	***	▼	×	▼	▼	++
Dielectric properties	***	++	▼	▼	++	▼	×	***	▼	×	▼	▼	++
<b>Resistance to fluids</b>													
Hydrocarbons	×	×	++	***	▼	++	▼	×	***	***	***	***	*** to ▼
Aliphatic solvents	×	×	++	***	▼	++	▼	×	***	***	***	***	*** to ▼
Aromatic solvents	×	×	▼	++	▼	▼	▼	×	***	++	***	++	▼
Cetones	***	++	▼	×	***	▼	++	▼	×	×	×	×	×
Chlorinated solvents	×	×	×	×	×	×	×	×	***	×	▼	×	×
Water	***	++	++	++	***	***	***	++	***	++	++	++	▼
Gas tightness	▼	▼	▼	++	▼	▼	***	++	***	++	▼	▼	×
Diluted acids / Acid cleaners	++	++	***	++	***	***	***	▼	***	***	▼	++	▼
Strong acids	++	▼	++	▼	***	***	***	▼	***	++	×	▼	×
Strong oxidizing acids	×	×	▼	×	▼	++	▼	×	***	▼	×	×	×

(\*) DuPont trademark

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