



Synthetic Rubber



CR - Polychloroprene

Chloroprene (CR) is a synthetic rubber made of chloroprene monomers by way of an emulsion process involving radical polymerization. Some grades are modified with sulfur, some are pre-crosslinked. Different grades of CR are distinguished by their tendencies to crystallize. CR is used when applications require a special combination of different properties, such as:

Properties:

- Excellent resistance to weathering, UV radiation and ozone
- Good chemical resistance and certain resistance to non-polar oils
- Good dynamic properties, tear strength and low abrasion
- Low gas permeability
- Heat resistant, flame retardant
- Good electrical properties

Applications:

- Conveyor belts, hoses, V-belts, roller coatings
- Seals for construction and automotive applications
- Bridge bearings
- Coated fabrics, membranes
- Sportswear, protective gloves
- Cable sheathing

Chemical name: Polychloroprene

CAS Number: 9010-98-4

Hazards identification: Not classified as hazardous

Supplier: Resonac Europe GmbH (former Showa Denko)

RESONAC
Chemistry for Change

Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Chips (for rubber)	Weight per container: 20 / 25 kg paper bags with PE inner layer Weight per pallet: 1,000 kg Pallet type: PE	12 months, CR GW 8 months	Cool and dry, no direct sunlight; max. temperature of 30 °C

These may also interest you:

- Fillers such as carbon blacks (often medium active) or kaolins
- Plasticizing oils
- Antioxidants (ODPA)
- Metal Oxides (MgO, ZnO)
- Sulfur accelerators



CR - Polychloroprene

1-1 General Purpose

Grade	Mooney Viscosity [ML 1+4, 100 °C]	Crystallization Rate	Other Characteristics
G Types (sulfur-modified group)			
GW	37-49	Slow	Sulfur-modified G type with better heat and compression set resistance than GN or GRT
W Types (basic group)			
W	42-51	Medium	Standard grade for general purpose
WHV	109-130	Medium	Higher-viscosity version of W for high-loading applications and general adhesives
WHV100	95-105	Medium	Lower viscosity version of WHV
W Types (crystallization-resistant group)			
WXJ*	42-51	Very Slow	Good low-temperature properties for general use
SND5*	67-76	Very Slow	Higher-viscosity version of WXJ
SND8*	32-37	Very Slow	Higher-viscosity version of WXJ
WRT	42-51	Extremely Slow	Excellent low temperature properties
W Types (extrusion & calendering)			
WB	42-51	Medium	Superior extrusion and calendering properties
WXK*	73-89	Very Slow	Good low-temperature properties and better extrudability
WXKT*	106-117	Very Slow	Higher-viscosity version of WX-K for high-loading use
SND37*	73-89	Very Slow	Version of WX-K with improved mold release and better extrusion properties
W Types (low mold-fouling group)			
WK*	42-51	Medium	Version of W with better mold release and good mill-/flowability
WXJK*	42-51	Very Slow	Version of WXJ with good millability and improved mold release
SND35*	63-73	Extremely Slow	Superior low temperature properties of WRT with improved mold release for injection molded goods
SND43*	78-88	Extremely Slow	Higher-viscosity version of SND-35 with less shrinkage
SND45*	60-73	Extremely Slow	Version of WRT with superior low temp. and brittleness temp. properties, also improved mold release for injection molded goods
T Types (specific group for extrusion & calendering)			
TW	42-51	Medium	Superior extrusion and calendering grade with good tensile properties
TW100	85-102	Medium	Higher-viscosity version of TW for high-loading use
SND22*	42-51	Very Slow	Good low-temperature properties with better extrudability
SND48*	85-100	Very Slow	Higher-viscosity version of SND-22 featuring better calenderability and extrusion ability with collapse resistance
TRT	42-51	Extremely Slow	Excellent low-temperature properties with better processability

*made to order



CR - Polychloroprene

1-3 Liquid Dispersions

Grade	Polarity	Solid content [%]	Polymer structure		Crystallization rate	Other characteristics
			Gel content	Homo/copolymer		
400	Anionic	50	Medium	Copolymer	Extremely fast	Ozone, weatherability
750	Anionic	50	Medium	Copolymer	Extremely slow	Flex, excellent elasticity
752	Anionic	50	Medium	Copolymer	Extremely slow	Flex resistance, elasticity (soft), very low modulus
753	Anionic	50	Medium	Copolymer	Extremely slow	Flex resistance, elasticity, accelerator-free
650	Anionic	60	Medium	Copolymer	Extremely slow	High-solids version of LD750
654	Anionic	59	Low	Copolymer	Low	Low modulus
842A	Anionic	50	High	Homopolymer	Very slow	High cure rate
671A	Anionic	59	Med-high	Homopolymer	Medium-slow	High wet-gel strength
AE101	Non-ionic	59	Med-high	Homopolymer	Medium-slow	Colloidal stability at low pH
572	Anionic	50	High	Homopolymer	Fast	Quick grab strength
571	Anionic	50	High	Homopolymer	Slow	General purpose, high cure rate
115	Non-ionic	47.5	Low	Copolymer	Slow	Carboxylated, hot bond strength
SD77S	Anionic	55	Sol (No gel)	Homopolymer	Very fast	Quick break for foam bonding
SD100	Anionic	55	Sol (No gel)	Homopolymer	Very fast	Excellent quick break properties for foam bonding
SND 57	Anionic	58	Sol (No gel)	Homopolymer	Medium	Tackiness, very low MW
SD78	Anionic	60	Med-high	Copolymer	Fast-medium	High pressure laminate wood



CM - Chlorinated polyethylene

Linear low-pressure polyethylene (LLDPE) becomes chlorinated when chlorine is put into an aqueous suspension in the presence of a radical former. Its main chain is fully saturated when chlorine content is between 25 and 45 % by weight. The best low-temperature flexibility is achieved when chlorine content is at 36 % (T_g: -22 °C, brittleness temperature: -40 °C). Typically used for rubber applications.

Properties:

- Good resistance to ozone, weathering and hot air (dry heat up to 150 °C)
- Oil resistance comparable to that of CR
- Suitable for producing flame-retardant articles with medium oil resistance

Applications:

- Cables
- Hoses
- Rollers

Chemical name: Chlorinated polyethylene

CAS Number: 64754-90-1

Hazards identification: Not classified as hazardous

Supplier: Weifang Polygrand Chemical Co., Ltd.



Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Powder	Weight per container: 25 kg PP/EVA bags alternatively big bags: 500 kg, 550 kg, 600 kg, 700 kg Weight per pallet: 1,400 kg Pallet type: Wood	24 months	Cool and dry, no direct sunlight; max. temperature of 30 °C

These may also interest you:

- Fillers such as carbon blacks or kaolins
- Ester plasticizers
- Peroxides and coagents (to increase crosslink density)
- MgO as an acid scavenger for heat stabilization



CM - Chlorinated polyethylene

Product specifications

Specifications	CPE135A	MF2032*	MF2035*	CM3080	CM3650	CM3665
Appearance	White powder					
Chlorine content [%]	36±1	32±1	35±1	30±1	36±1	36±1
Heat of fusion [J/g]	≤2.0	≤20	≤20	≤1.5	≤1.5	≤1.5
Residue on sieve (0.8mm Sieve) [%]	≤2.0	≤2.0	≤2.0	≤2.0	≤2.0	≤2.0
Apparent density [g/ml]	≥0.5	≥0.48	≥0.48	≥0.42	≥0.42	≥0.42
Hardness [Shore A]	≤60	≤65	≤65	≤65	≤55	≤55
Tensile strength [MPa]	≥8	≥8	≥8	≥8	≥8	≥8
Elongation at break [%]	≥700	≥700	≥700	≥700	≥700	≥700
Mooney viscosity [ML(1±4) 125 °C]	-	-	-	80±5	50±5	65±5
Ash content [%]	≥4.5	≥4.5	≥4.5	≥4.5	≥4.5	≥4.5
Calcium carbonate [%]	5	5	5	5	5	5
Stable time [min]	≥8	≥8	≥8	≥8	≥8	≥8
Impurity particles [unit/200g]	≤20	≤20	≤20	≤20	≤20	≤20
Volatile matter [%]	≥0.3	≥0.3	≥0.3	≥0.3	≥0.3	≥0.3
Melt flow rate	-	6-9	6-9	-	-	-

*not standard grades

Product specifications

Specifications	CM3675	CM3680	CM3100*	CM3690	CM3055	CM4085
Appearance	White powder					
Chlorine content [%]	36±1	36±1	36±1	36±1	30±1	40±1
Heat of fusion [J/g]	≤1.5	≤1.5	≤1.5	≤2.0	≤1.5	≤1.5
Residue on sieve (0.8mm Sieve) [%]	≤2.0	≤2.0	≤2.0	≤2.0	≤2.0	≤2.0
Apparent density [g/ml]	≥0.42	≥0.42	≥0.42	≥0.42	≥0.42	≥0.5
Hardness [Shore A]	≤55	≤60	≤60	≤60	≤65	≤55
Tensile strength [MPa]	≥8	≥8	≥8	≥8	≥8	≥8
Elongation at break [%]	≥700	≥700	≥700	≥700	≥700	≥700
Mooney viscosity [ML(1±4) 125 °C]	75±5	80±5	85±5	90±5	55±5	90±10
Ash content [%]	≥4.5	≥4.5	≥4.5	≥4.5	≥4.5	≥4.5
Calcium carbonate [%]	5	5	5	5	5	5
Stable time [min]	≥8	≥8	≥8	≥8	≥8	≥8
Impurity particles [unit/200g]	≤20	≤20	≤20	≤20	≤20	≤20
Volatile matter [%]	≥0.3	≥0.3	≥0.3	≥0.3	≥0.3	≥0.3
Melt flow rate	-	-	-	-	-	-

*not standard grades



CSM - Chlorosulphonated polyethylene

CSM is made from different grades of PE. Weifang Polygrand uses a gas-solid phase method for the chlorosulfonation process. Its specially treated PE reacts with chlorine and sulphur dioxide to produce CSM. It has fully saturated main and side chains. Chlorine content varies between 24-43 wt % (36 % is typical) and sulfur content between 0.8-1.5 wt % (1.2 % is typical).

Properties:

- Very good resistance to ozone, weathering, and aging
- Good color stability for outdoor use
- Low fatigue cracking in dynamic applications
- Temperature range: -20 to 135 °C
- Flame retardant and often self-extinguishing

Applications:

- Cable sheathing
- Hose covers
- Coated fabrics (e.g. inflatable boats)
- Light rubber products

Chemical name: Chlorosulphonated polyethylene

CAS Number: 68037-39-8

Hazards identification: Not classified as hazardous

Supplier: Weifang Polygrand Chemical Co., Ltd.



Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Granulate	Weight per container: 25 kg PP Weight per pallet: 1,000-1,400 kg Pallet type: Wood	24 months	Cool and dry, no direct sunlight; max. temperature of 30 °C

These may also interest you:

- Fillers such as carbon blacks (medium active) or kaolins (for colored products)
- Ester plasticizers
- Processing aids
- MgO as an activator and acid scavenger
- Sulfur and sulfur accelerators
- Peroxides and coagents (to increase crosslinking density)



CSM - Chlorosulphonated polyethylene

Product specifications

Specifications	Test method	Unit	CSM 403*	CSM 503	CSM 603	CSM 803	CSM 903	CSM S45
Chlorine content	GB/T 30290	[%]	35±2	35±2	35±2	35±2	35±2	25±2
Sulfur content	GB/T 30290	[J/g]	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5
Volatile matter	GB/T 2914	[%]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	≤0.5
Tensile strength	GB/T 528	[MPa]	> 18	> 20	> 22	> 23	> 23	
Elongation at break	GB/T 528	[%]	> 250	> 250	> 250	> 250	> 250	
Mooney viscosity	GB/T 1232.1	[ML(1+4) 100 °C]	40-50	50-60	60-70	80-95	95-110	35-45



EPDM - Ethylene propylene rubber

Polymerized ethylene and propylene, usually in solution (hexane, pentane) using Ziegler-Natta or metallocene catalysts. Fully saturated main chain achieved through addition of ENB or DCPD as terpolymer. ENB crosslinkable with sulfur. As a copolymer and with DCPD, crosslinking by peroxide. Often blends of different EPDM types are used to adjust properties and processing qualities.

Properties:

- Good resistance to heat, ozone, UV and weathering (fully saturated hydrocarbon chain)
- Resistance to polar media (i.e. water, alcohols)
- Can be used over a broad range of temperature (cured with peroxides at up to 150 °C)
- Excellent electrical insulation properties
- Cost-effective compounding (accepts a high load of fillers)

Applications:

- Automotive: Door and window seals, break and cooling hoses, wiper blades, O-rings
- Construction/industrial: Window seals, flooring, cables, roofing sheets, hoses, O-rings, conveyor belts

Chemical name: Ethylene-propylene-ethylidene-norbornene copolymer
CAS Number: 25038-36-2 (special types could differ)

Hazards identification: Not classified as hazardous

Supplier: Mitsui Chemicals Europe GmbH

**MITSUI CHEMICALS
EUROPE GMBH**

Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Granulate/bale	Weight per container: 25 kg bags/bales Weight per pallet: 625-750 kg/bags Weight per Box: 750-1,050 kg/bal	6 months after delivery	Cool and dry, no direct sunlight; max. temperature of 30 °C

These may also interest you:

- Fillers such as carbon blacks or kaolins
- Plasticizing oils
- Processing aids
- Activators, acid scavenger, moisture absorbers
- Sulfur and sulfur accelerators
- Peroxides and coagents (to increase crosslinking density)



EPDM - Ethylene propylene rubber

EPDM special grades: VNB-EPT with vinylnorbonene as diene for increased crosslink density and improved high temperature properties for applications with high dynamic demands

EBT: Terpolymer with butylene- instead of propylene-copolymer leading to improved low temperature properties for applications with high dynamic demands

	PX-006M	PX-008M	PX-009M
Polymerization Catalysis (dienes)	Metallocene (VNB)	Metallocene (VNB)	Metallocene (VNB)
ML (1+4) 125 °C	69	48	10 (100 °C)
Ethylene Content [wt %]	60	60	60
Diene Content [wt %]	1.5	1.5	1.5
Oil extension [phr]	0	15	0

	K-8370EM	K-9330M
Polymerization Catalysis (comonomers)	Metallocene (butene)	Metallocene (butene)
ML (1+4) 125 °C	50	30 (100 °C)
Ethylene Content [wt %]	51	50
Diene Content [wt %]	4.7	7.1
Oil extension [phr]	30	0

EPDM-Standard grades: for a wide range of applications with different viscosities, diene- and oil contents (bale form)

Characteristics		Grade	Mooney Viscosity		Ethylene Content (%)	Diene Content (%)	Oil Content (PHR)	Polymer Design *1	Bale		Packaging		Shipping
			ML(1+4) 125°C	ML(1+4) 100°C					Weight (kg)	Form	Wrapping *2	kg/ Steel Box	kg/20' Container
Low Diene	Non-Oil Extended	2060M	40	-	55	-	2,3	Narrow	25	Standard	LDPE	1,050	16,800
Medium Diene	Non-Oil Extended	3092M	61	-	65	-	4,6	Narrow	25	Friable	LDPE, HDPE	750	12,000
		3110M	78	-	56	-	5,0	Narrow	25	Friable	LDPE, HPDE	750	12,000
	Oil Extended	3062EM	43	-	65	20	4,5	Narrow	25	Standard	LDPE, HDPE	1,050	16,800
		3072EM	4,5	Friable	LDPE, HPDE	750	12,000						
			25	Standard	LDPE, HDPE	1,050	16,800						
		5,2	Friable	LDPE, HDPE	750	12,000							
3090EM	59	-	48	10	5,2	Narrow	25	Standard	LDPE	1,050	16,800		
High Diene	Non-Oil Extended	X-4010M	-	8	54	-	7,6	Narrow	25	Standard	Low Melt POE	1,050	16,800
		4045M	-	45	45	-	7,6	Narrow	25	Standard	LDPE, HPDE	1,050	16,800
		8030M	-	32	47	-	9,5	Hyper Branched	25	Standard	LDPE, HDPE	900	14,400
		9090M	58	-	41	-	14,0	Branched	25	Standard	LDPE	900	14,400

EPDM pellet grades: for optimized dosage and handling

Characteristics		Grade	Mooney Viscosity		Ethylene Content (%)	Diene Content (%)	Oil Content (PHR)	Polymer Design *1	Bale		Packaging		Shipping
			ML(1+4) 125°C	ML(1+4) 100°C					Weight (kg)	Form	Wrapping *2	kg/ Steel Box	kg/20' Container
Medium Diene	Non-Oil Extended	X-3012P	15 (100°C)	5g/10min	72	3,6	-	Narrow	25	Pellet	Paper Bag	750	12,000
		3092PM	61	-	65	4,6	-	Narrow	25	Pellet	Paper Bag	750	12,000
	Oil Extended	3072EPM	51	-	64	5,4	40	Narrow	25	Pellet	Paper Bag	750	12,000



FKM - Fluoro rubber

FKM polymers are supplied as co-, ter- and tetrapolymers with varying levels of fluorine (between 65 and 71 %.) This means that FKM can be very precisely customized to meet individual requirements for media resistance and low-temperature flexibility.

Properties:

- Fluoro rubber can be used at temperatures ranging between -30 °C and 200 °C
- Fluoro rubbers can be supplied either as pre-compounds (crosslinking system integrated) or as base polymers (no crosslinking system included)
- Very good ozone and aging resistance
- High degree of media resistance in fuels, mineral oils and greases as well as in aliphatic and aromatic hydrocarbons

Fluoroelastomer properties compared to other rubbers

	Fluoroelastomer	Silicone rubber	Acrylic rubber	Nitrile rubber	Ethylene propylene rubber
	FKM	MQ, VMQ	ACM	NBR	EPDM
Specific gravity (raw gum)	1.8~2.0	1.0	1.0	1.0	0.9
Heat resistance	*****	*****	****	***	****
Low-temperature resistance	***	*****	****	*****	*****
Electrical properties	****	****	***	***	*****
Solvent resistance	*****	*****	****	***	****
Flame resistance	*****	****	**	**	**
Ozone resistance	*****	*****	*****	*	*****
Steam resistance	*****	****	*	***	****
Acid resistance	*****	****	***	****	*****
Oil resistance	*****	***	****	****	*
Permeability resistance	*****	**	****	****	***

***** Excellent, **** Good, *** Fair, ** Marginal, * Poor

Fluorine content and features

Properties	Fluoroelastomer	
	High content	Low content
Curing properties (except peroxide cure type)		Better
Compression set (except peroxide cure type)		Better
Low temperature properties		Better
Oil resistance	Better	
Chemical resistance	Better	
Corrosion resistance	Better	



FKM - Fluoro rubber

Applications:

- Seals in the automotive and commercial vehicle industries, oil production, chemical sector and aerospace
- FKM is used wherever high speeds and high temperatures occur in conjunction with aggressive media, e.g. in radial shaft seals for pumps and gearboxes.
- FKM can be used at temperatures between -30 °C and 200 °C. Special compounds/blends can be utilized at temperatures over 200 °C or below -30 °C under certain conditions. The specification of the low-temperature glass transition point is important for static applications.
- Under dynamic or high-pressure conditions, the low-temperature glass transition point sometimes shifts considerably in response to frequency or pressure.
- Examples of automotive applications: Fuel hoses, cylinder head gaskets, turbo charger hose, OPF/DPF particle filter sensor hoses, sealing rings, shaft sealing rings, O-rings (e.g. in quick connectors), intake manifold gaskets, pressure control diaphragms in oil separators
- Non-automotive application examples: Pressure equalization or buffer bladders (e.g. oil and gas), impellers (in impeller pumps, bipolar plate seals in fuel cells, filter plate diaphragms, stator pumps (oil and gas), cleaning pigs, jewelry and watch bands

Chemical name:

1. Vinylidene fluoride-hexafluoropropylene copolymer
2. Vinylidene fluoride-tetrafluoroethylene-hexafluoropropylene copolymer
3. Fluoroelastomer (LT)

CAS Number:

1. 9011-17-0
2. 25190-89-0
3. 56357-87-0

Hazards identification: Depending on the type, classification differs

Supplier: DAIKIN CHEMICAL EUROPE GmbH



Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Bales	Weight per container: Varies depending on polymerization plant Weight per pallet: Varies depending on polymerization plant Pallet type: Varies depending on polymerization plant	12 months after delivery	Cool and dry, no direct sunlight

These may also interest you:

- Fillers such as carbon blacks (furnace carbon blacks, thermal carbon blacks, conductive carbon blacks) or barium sulphate (blanc fixe)
- Processing aids
- Metal oxides as acid scavenger
- Crosslinking systems
 - Diamines (rarely used)
 - Bisphenols
 - Peroxides and coagents (TAIC and TMAIC)



FKM - Fluoro rubber

DAIKIN Fluoroelastomers: DAI-EL Orientation Map

FKM family	% F	BISPHENOL CURE Best heat & compression set resistance		PEROXIDE CURE Chemical resistance	
		Extrusion	Injection & compression	Extrusion	Injection & compression
Copolymer	66 %	G-704	G-7000, G-300 series: Low-viscosity grades (Several PC)	G- 8002 G-8002L*	G- 8002 G-8002L*
Terpolymer	66 %-67 %	G-671	G-667 (G-663BP)	G-962	G-962 G-964
	68 %-69 %	G-558			
	70 %-71 %	G-565			
LT Low temperature	65 % (TR10=-30 °C)	G-621	G-686 (G-684BP)	G-901 G-902 G-903	G-912 G-922 G-925
	66 % (TR10=-25 °C)				
BRE Base resistance	62 %				GBT-6002 GBT-6005

*not a standard grade



FFKM - Perfluoro rubber

Perfluoro rubbers or perfluoroelastomers are fully fluorinated elastomers. Chemically-speaking, FFKM is very similar to polytetrafluoroethylene (PTFE) and is most often utilized for applications that require very good thermal resistance and/or chemical resistance.

Properties:

- Perfluoroelastomers (FFKM) are supplied either as compounds that are ready for processing or as base polymers for in-house compounding.
- FFKM can be used at temperatures ranging from -20 °C to 325 °C. Special compounds/blends can be used at temperatures above 325 °C or down to -30 °C under certain conditions. The specification of the low-temperature glass transition point is important for static applications.
- Under dynamic or high-pressure conditions, the low-temperature glass transition point sometimes shifts considerably in response to frequency or pressure.

Applications:

- Seals made of FFKM are suitable for use at temperatures from -20 °C to 325 °C. They are used wherever extreme safety standards apply and for applications in which high maintenance and repair costs exceed the cost of the seals.
- Use can be found in the chemical industry, the oil producing and processing industry, power plant construction as well as in the aerospace industry.
- Other applications include seals and O-rings for chemical reactors, vacuum technology and semiconductor manufacturing.

Chemical name: Perfluoroelastomer

CAS Number: Not specified

Hazards identification: Not classified as hazardous

Supplier: DAIKIN CHEMICAL EUROPE GmbH



Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Sheets	Weight per container: 2 kg in laminated foil bag Weight per pallet: Not applicable Pallet type: Not applicable	12 months after delivery	Cool and dry, no direct sunlight



FFKM - Perfluoro rubber

These may also interest you:

- Fillers such as carbon blacks (thermal carbon blacks) or barium sulphate (blanc fixe)
- Processing aids
- Metal oxides as acid acceptors
- Crosslinking systems
 - Peroxides and coagents
 - Imidazoles

DAI-EL PERFLUOR

Raw gum	Features & applications	Mooney Viscosity	Specific gravity [-]	TR10 [°C]	Temp range [°C]	Pre-compound	Full compound	
GA-15	POx cure system - Low-temperature flexibility - Cleanness same as FKM	25 [ML ₁₊₁₀ 100 °C]	2.0	-20	-15 to 200	-	GA-05	No fillers Transparent
							GA-55	MTC-filled Black compound
							GA-65	BaSO ₄ SiO ₂ -filled White compound
GA-105	POx cure system - Good mechanical properties - Excellent chemical and solvent resistance - Suitable for semiconductor applications	65 [ML ₁₊₁₀ 100 °C]	2.0	-2	RT to 200	-	GA-2557501	MTC Filled
GA-500	Imidazole Cure - High level of cleanliness - Better resistance to steam and amine than triazine cure type - Suitable for semiconductor applications	80 [ML ₁₊₂₀ 170 °C]	2	3	RT to 300	-	GA-5508002	MTC-filled Black compound



IIR - Butyl rubber

Butyl rubber is produced from isobutylene and small amounts of isoprene (0.5 to 2.5 mol %) in an aliphatic solution at -100 °C. Isoprene units are statistically distributed. Higher isoprene content increases crosslinking speed and density but remains slow compared to other diene rubbers. Glass transition temperature is low (-70 °C). Having low mobility in the polymer chain results in low elasticity, strong damping and low gas permeability. Butyl rubber cannot be blended with diene rubbers but can be combined with EPDM.

Properties:

- Vulcanizates have low air permeability
- Good heat, weather and ozone resistance
- Can be used across a wide temperature range, from -40 °C to 150 °C (depending on crosslinking)
- Good damping in a temperature range of -40 °C to 70 °C
- Resistant to polar media (e.g. solvents, alcohol, glycol)

Applications:

- Tubes for tyres, vacuum seals, membranes, NBC protection (suits, gloves)
- Heating bellows for tire production
- Adhesives, adhesive tapes, sealing compounds, sealing tapes
- Heat-resistant conveyor belts, steam hoses, boiler seals
- Wagon buffer springs, damping elements, dock fenders
- Pharmaceutical closures
- Hoses, and linings for chemicals

View detailed product information on our website:



Chemical name: 1,3-butadiene, 2-methyl-, polymer with 2-methyl-1-propene
CAS Number: 9010-85-9

Hazards identification: Not classified as hazardous

Supplier: CENWAY MATERIALS Co., LTD



Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Bales	Weight per container: 25 kg Weight per pallet: 1,050 or 1,200 kg Pallet type: Wood/steel	36 months	Cool and dry, no direct sunlight; max. temperature of 30 °C

These may also interest you:

- Fillers such as carbon blacks
- Plasticizing oils
- Processing aids
- Sulfur and sulfur accelerators



IIR - Butyl rubber

CIIR - Chlorobutyl rubber

When butyl rubber is dissolved in aliphatic solvents and reacts with chlorine, chlorobutyl rubber (CIIR) is formed. Its properties are generally comparable to those of butyl rubber, but CIIR can be co-vulcanized with other diene rubbers and its cure rate and speed are higher. CIIR also allows a greater variety of curing systems and improves heat resistance.

Properties:

- Vulcanizates have low air permeability and can be co-vulcanized with diene rubbers
- It can be used across a wide temperature range, from -40 °C to 150 °C (depending on crosslinking)
- Resistant to polar media (e.g. solvents, alcohol, glycol)

Applications:

- Primarily used for the inner layer of tubeless tires
- Pharmaceutical stoppers and closures
- Conveyor belts for hot materials, seals, hoses
- Hoses and linings for chemical materials

Chemical name: 1,3-butadiene, 2-methyl-, polymer 2-methyl-1-propene, chlorinated

CAS Number: 68081-82-3

Hazards identification: Not classified as hazardous

Supplier: CENWAY MATERIALS Co., LTD



Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Bales	Weight per container: 34 kg Weight per pallet: 1,020 or 1,224 kg Pallet type: Wood/steel	24 months	Cool and dry, no direct sunlight; max. temperature of 30 °C

These may also interest you:

- Fillers such as carbon blacks
- Plasticizing oils
- Processing aids
- Sulfur and sulfur accelerators



IIR - Butyl rubber

BIIR - Bromobutyl rubber

When butylrubber is dissolved in aliphatic solvents and reacts with bromine, it forms bromobutyl rubber (BIIR). In general, its properties are comparable to those of butyl rubber but BIIR can also be co-vulcanized with other diene rubbers at a higher cure rate and speed. It also allows for a greater variety of curing systems and improves heat resistance. BIIR reacts faster than CIIR.

Properties:

- Vulcanizates have low air permeability and can be co-vulcanized with diene rubbers
- BIIR can be used in a wide temperature range of -40 °C to 150 °C (depending on crosslinking)
- Resistant to polar media (e.g. solvents, alcohol, glycol)

Applications:

- Primarily used for the inner layer of tubeless tires
- Pharmaceutical stoppers and closures
- Conveyor belts for hot materials
- Seals, hoses
- Hoses and linings for chemical materials

Chemical name: 1,3-butadiene, 2-methyl-, polymer with 2-methyl-1-propene, brominated
CAS Number: 68441-14-5

Hazards identification: Not classified as hazardous

Supplier: CENWAY MATERIALS Co., LTD



Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Bales	Weight per container: 34 kg Weight per pallet: 1,020 or 1,224 kg Pallet type: Wood/steel	24 months	Cool and dry, no direct sunlight; max. temperature of 30 °C

These may also interest you:

- Fillers such as carbon blacks
- Plasticizing oils (such as paraffinic and naphthenic mineral oils)
- Processing aids
- Sulfur and sulfur accelerators



IIR - Butyl rubber

Grade list

Series	Grade	Mooney [ML(1+8) 125 °C]	Volatiles [wt-%]	Halogen content [wt-%]	Application
IIR	532	51 ±5	≤ 0.3		Inner tubes
	331 T	331 T	≤ 0.5		Inner tubes
	332 T	33 ±4	≤ 0.3		Inner linings
BIIR	2302	32 ±5	≤ 0.5	1.9 ±0.2	Inner linings
	2502	46 ±5	≤ 0.5	1.9 ±0.2	Inner linings
CIIR	1301	38 ±5	≤ 0.5	1.2 ±0.2	Inner linings Stoppers Sidewalls



NBR - Nitrile rubber

Nitrile rubber (NBR) is produced through the radical copolymerization of butadiene and acrylonitrile (ACN) in an aqueous emulsion. Depending on the temperature during polymerization, warm or cold polymers can be used. Warm polymers are utilized for adhesives, for example, while cold polymers are used for rubber applications (LG Chem = only cold polymers).

ACN content is normally between 15 and 50 wt %. Glass transition temperature with an ACN of 18 % is $-38\text{ }^{\circ}\text{C}$, $-2\text{ }^{\circ}\text{C}$ with 50 % ACN. Typical ACN content: 18 %, 28 %, 34 %, 39 %. ACN is the polar fraction in NBR; the higher it is, the better the resistance to non-polar hydrocarbons (greases, oils, fuels) but with decreasing low-temperature flexibility.

Properties:

- Resistant to polar oils (depending on ACN content), fuels and greases

Applications:

- Used in diaphragms, hoses, conveyor belts, food contact products, printing blankets, insulating foams

Chemical name: 2-propenenitrile polymer with 1,3-butadiene
CAS Number: 9003-18-3

Hazards identification: Not classified as hazardous

Supplier: LG Chem



Sold as:	Weight / Dimension:	Shelf life:	Special storage conditions:
Bales	Weight per container: 35 kg Weight per pallet: 1,260 kg Pallet type: Metal	18 months	Cool and dry, no direct sunlight; max. temperature of $30\text{ }^{\circ}\text{C}$

These may also interest you:

- Fillers such as carbon blacks, light-colored fillers
- Polar plasticizers
- Chlorinated paraffins
- Antioxidants
- Processing aids
- Activators
- Sulfur and sulfur accelerators
- Peroxides and coagents



NBR - Nitrile rubber



LG Chem NBR type overview Grade list

Classification		ACN %	LG Chem	Mooney [ML (1+4) 100 °C]	Basic properties	FDA	Sold as
Low ACN	Base type	28	NBR 7150	50	Temperature flexibility and elasticity	X	35 kg bales
			NBR 2860	60			
	Fast cross-linking	28	NBR 2875	75			
Medium ACN	Base type	34	NBR 6230*	30	Good processability and oil resistance		35 kg bales
			NBR 6240	40			
			NBR 6250	50	Good oil resistance, fillers absorption and elasticity		
			NBR 6280	80		X	
	Molding type	34	NBR 6850*	50		X	

*not standard grades



Functional fillers

High-performance fillers

INHANCE TI series

Chemical name: Titanium carbide
CAS Number: 12070-08-5

Hazards identification: 

Supplier: INHANCE Technologies



Technical data:	Sold as / Weight:	Shelf life / Special storage conditions:
<ul style="list-style-type: none"> • INHANCE TI-9100: Pure titanium carbide powder (> 99 %) • INHANCE TI-9113 is an activated INHANCE UH-1250 with bound TI particles (min. 50 %) on the surface • TI-9113 significantly improves abrasion resistance, wear resistance and sliding friction (better abrasion behavior than metals can sometimes be achieved) • Blends enriched with INHANCE TI-9113 are lightweight, non-corrosive and electrically non-conductive • Applications: Machine parts and parts for mechanical and chemical environments in which replacing parts is very costly, e.g. impeller pumps, valve seats, piston rings, plastic gears, sealing rings, bearings, wear plates, sliding strips, cable sheaths and high-performance coatings 	<p>Sold as: Dark gray, free-flowing powder</p> <p>Weight per container: See overview Weight per pallet: See overview Pallet type: Other</p>	<p>Shelf life: 36 months. Under normal storage conditions, the fillers will only lose surface activity to a minor extent over time; even years later, it is possible to utilize them without issue.</p> <p>Special storage conditions: Cool and dry</p>



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Silicone Elastomers

Textile & Leather

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- Hungary
- Italy
- Sweden
- Poland
- Portugal
- Romania
- Serbia
- Slovakia
- Slovenia
- Spain
- Switzerland
- Turkey
- United Kingdom

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USA, North Carolina



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- Japan
- Singapore
- South Korea