Polychloroprene Rubber (CR)

Classification
These elastomers are polymers based on 2-ciorobutadiene (1,3). Introduced commercially in 19311 by DuPont, their processing characteristics and performance are able to fulfill the most needs of the rubber. The final articles based on polychloroprene, opportunely designed, are distinguished for elevated atmospheric agent and ozone resistance. The chlorine presence also gives a good fire and oil resistance, as well as a good chemical inactivity as against many chemical agents. Moreover they show good mechanical properties, good elastic behavior, low usury and discreet hot air stability.

Polymer type
The available types substantially belong to two distinguished families: sulphur and mercaptan modified. Fundamental differences concern the performances and more precisely the mechanical characteristics and compression set.

		Mercaptan types			Sulphur types	
Hardness ShA	Pti	60	70	50	63	70
Tensile strength	Mpa	11	14	13	18	17
Elongation	%	250	250	450	600	550
Abrasion resistance DIN 53516	mm^3	60	55			45
Compression set 22 H @ 100ºC	%	18	17	23	29	31
Heat Resistance 70 H @ 100ºC						
Tensile strength	%	-15	-13	-5	-15	-13
Elongation	%	-40	-36	-10	-45	-40
Hardness ShA	Pti	+7	+6	+8	+8	+7
ASTM N.1 70 H @ 100ºC						
Volume	%	+14	+12	+19	+12	+11
Weight	%	+8	+6	+6	+7	+6
Water 70 H @ 100ºC						
Volume	%	+9	+7	+7	+14	+2
Weight	%	+7	+6	+7	+10	+8
TR 10	ºC	-38	-37	-36	-36	-36

Applications
Polychloroprene is often used to replace natural and styrene-butadiene rubber when its typical properties are essential for:

- ozone resistance
- fire resistance
- intermediate oil resistance

In particular the following applications can be listed:

- molded and extruded items for the automotive, chemical, mining, construction and agriculture industries
- printing rolls and rolls for the paper industry
- cables
- belts for automotive and industrial equipment
- conveyor belts for the house building and mining industry
- rubber/textile
- Sponge articles
- water-proof linings
- industrial foot wear
- adhesive