Ethyl Acrylate Rubber (VAMAC-EAM)

Classification
These special elastomers, introduced by DuPont in 1975, constitute an interesting combination of high and low temperature resistance, with good behavior against oils, refrigerant liquids, acids, inorganic bases and atmospheric agents.

Polymer type
Ethylene-acrylic rubber is achieved by the polymerization of ethylene and methyl acrylate with small quantities of monomers containing carboxylic groups classified as “cure-site”. This particularity allows for efficient vulcanization with the employment of diamine and other accelerators sensitive to the carboxylic groups.

Such elastomers exhibit good physical mechanical characteristics with the employment of normal load of fillers. The ethylene structure confers good properties at low temperatures while the methyl acrylate handles the resistance against oils. The completely saturated structure guarantees an elevated resistance to ozone, UV radiation and atmospheric agents.

Hardness ShA	Pti	50	70	60	60-80
Tensile strength	Mpa	15	14	8	9
Elongation	%	500	400	400	350-500
Compression set 70 H @ 150ºC	%	22	15	30	
Heat ageing 7 days @ 150ºC					
Tensile strength	%	+10	+5	-10	-5
Elongation	%	-20	-15	-30	-15
Hardness ShA	Pti	+4	+2	+16	+10
ASTM N.1 70 H @ 150ºC					
Volume	%	+5	+3	+3	
ASTM N.3 70 H @ 150ºC					
Volume	%	+50	+48	+55	
Water/Glycol 1:1 70 H @ 100ºC					
Hardness ShA	Pti	-2	-1		
Volume	%	+4	+2		
ASTM Fuel B 70 H @ 23ºC					
Volume	%	+70	+68		
Brittle point	ºC	-35	-30	-60	
Electric characteristics					
Power factor (1000 Hz)	Volt/mil				7.2
Electric Strength					825

Applications
EAM base compounds are usable for the production of articles with varying hardness from 40 to 90 ShA. Taylor made compounds are possible according to the various specifications and technologies used (molding, extrusion, calendaring, rubber/textile adhesion and rubber/metal bonding).

The more common products find applications in the automotive, chemical, electric fields and anywhere good behavior is required at high and low temperatures in acid and base environment, resistance to the outdoors and ozone, good electric properties.