

Appendices

APPENDIX I

Butyl Rubber

Formulation (parts by weight)

Butyl 268 100

VANFRE AP-22

Stearic Acid 2

Zinc Oxide 5

N-990 Carbon Black 50-200

DTDM 1

Ethyl Cadmate 4

Sulfur 0.5

Natural Rubber

Formulation (parts by weight)

SMR-5 100

VANFRE AP-22.5

Stearic Acid 2

Zinc Oxide 5

AGERITE STALITE S1

VANOX ZMTI 0.5

N-990 Carbon Black 50-200

Plastogen -

MBS 1

TMTD 0.1

Sulfur 2.75

Neoprene W

Formulation (parts by weight)

Neoprene W 100

VANFRE M 2.5

Stearic Acid 0.5

Maglite D 4

AGERITE STALITE S2

VANOX ZMTI 1

Carbowax 4000 2

N-990 Carbon Black 50-200

Plastogen -

Zinc Oxide 5

VANAX CPA 1.5

Styrene Butadiene Rubber
Formulation (parts by weight)
SBR-1500 100
VANFRE AP-22.5
Stearic Acid 2
Zinc Oxide 5
AGERITE STALITE S1
VANOX ZMTI 0.5
N-990 Carbon Black 50-200
Plastogen -
CBS 1.25
Cumate 0.1
Sulfur 2

APPENDIX II

EPDM Rubber
Formulation (parts by weight)
Nordel 1070 100
Stearic Acid 1
Zinc Oxide 5
N-990 Carbon Black 100
Circosol 424040
TMTM 1.5
MBT 0.5
Spider Brand Sulfur 1.5

Nitrile Rubber
Formulation (parts by weight)
Nipol 1042 100
Aminox 1
Stearic Acid 1
Zinc Oxide 3
N-990 Carbon Black 50-200
DOP 25
MBTS 1.5
Spider Brand Sulfur 1.5

Polyacrylate Rubber
Formulation (parts by weight)
HyTemp 4051 EP 100
Stearic Acid 1
Struktol WB 222 2
Agerite Stalite S 2

N990 Carbon Black 50
 Sodium Stearate 4
 HyTemp NPC-50 2

N990/N550 in an O-Ring compound for figures 1-8(a), 9-11

Formulation (parts by weight)

Krynac 3450	100	100	100	100
Spider Sulfur	0.5	0.5	0.5	0.5
Naugard 445	2	2	2	2
Vulcanox MB-2	2	2	2	2
Stearic Acid	0.5	0.5	0.5	0.5
Zinc Oxide	15	15	15	15
N550 Carbon Black	60	48	36	24
N990 Carbon Black	-	30	60	90
Paraplex G-50	15	15	15	15
TMTD	1.5	1.5	1.5	1.5
TETD	1.5	1.5	1.5	1.5
CBS	3	3	3	3
Total	201	219	237	255

N990/N550 in an O-Ring compound for figures 1-8(b)

Formulation (parts by weight)

Krynac 3450	100	100	100	100
Spider Sulfur	0.5	0.5	0.5	0.5
Naugard 445	2	2	2	2
Vulcanox MB-2	2	2	2	2
Stearic Acid	0.5	0.5	0.5	0.5
Zinc Oxide	15	15	15	15
N550 Carbon Black	50	50	50	50
N990 Carbon Black	-	25	50	75
Paraplex G-50	15	15	15	15
TMTD	1.5	1.5	1.5	1.5
TETD	1.5	1.5	1.5	1.5
CBS	3	3	3	3
Total	191	216	241	266

APPENDIX III

Butyl Rubber

Formulation (parts by weight)

EXXON Butyl 268 100
 VANFRE AP-22
 Stearic Acid 1
 Zinc Oxide 5

Sulfur 2
METHYL TUADS 0.1
CAPTAX 0.5
Carbon Black 25-125

Natural Rubber
Formulation (parts by weight)
SMR-5 100
VANPLAST R 2
Stearic Acid 2
Zinc Oxide 5
AGERITE STALITE S2
Sulfur 2.75
ALTAX 1
METHYL TUADS 0.1
Carbon Black 25-125

Neoprene W
Formulation (parts by weight)
SMR-5 100
VANFRE AP-22
Stearic Acid 0.5
Maglite D 4
AGERITE STALITE S2
VANPLAST PL 5
Zinc Oxide 5
VANAX NP 1
Carbon Black 25-125

Nitrile Rubber
Formulation (parts by weight)
CHEMIGUM N689B 100
VANFRE AP-22
Sulfur 1.75
Stearic Acid 1.5
AGERITE STALITE S1.5
Dibutyl Phthalate 12.5
Cumar MH 12.5
ALTAX 1.5
Carbon Black 25-125

Styrene Butadiene Rubber
Formulation (parts by weight)
PLIOFLEX 1500C 100

VANFRE AP-22
Stearic Acid 2
Zinc Oxide 5
AGERITE STALITE S1.5
Sulfur 2
ALTAX1.5
METHYL CUMATE 0.1
Carbon Black 25-125