



MATERIAL REPORT

REPORT NUMBER:

DATE: 02/24/97

TITLE: Comparison of Parker Compound V1238-95 to a competitive compound for explosive decompression resistance and to V0858-95 for extrusion resistance.

PURPOSE: To provide comparative data.

CONCLUSION: Compound V1238-95 exhibits superior ED resistance to the competitive compound and is a suitable replacement for V0858-95 for extrusion resistance.

Recommended temperature limits: -15⁰F to 400⁰F

Recommended For

Explosive decompression and extrusion resistance

Petroleum, mineral, and vegetable oils

Silicone fluids

Aromatic hydrocarbons (benzene, toluene)

Chlorinated hydrocarbons

High vacuum

Ozone, weather, and aging resistance

Not Recommended For

Hot water and steam

Auto and aircraft brake fluids

Amines

Ketones

Low molecular weight esters and ethers



REPORT DATA

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Explosive Decompression Test Conditions	V1238-95 2-227 O-Rings	Competitor 2-227 O-Rings
<u>Basic Physical Properties</u>		
Hardness, Shore A	94	
Tensile Strength, psi	2610	
Elongation, %	70	
50% Modulus, psi	1710	
Compression set (70 HRS @ 392°F), %	23.5	
<u>75°F, 1000 ml CO₂, 820 psig, 120 HRS</u>		
Hardness Change, Shore M, pts	-3	-10
Volume Change, %	+24	+29
Weight Change, %	+9	+4
Tensile Strength Change, %	-57	-45
Elongation Change, %	-12	+21
50% Modulus Change, %	-53	-58
20 Second decay (820 to 0 psig)	Excellent, low swell,	Good, medium swell,
Visual appearance	no damage	no damage
<u>250°F, 1000 ml CO₂, 1000 psig, 72 HRS</u>		
Hardness Change, Shore M, pts	-2	-3
Volume Change, %	+3	+2
Weight Change, %	+2	+1
Tensile Strength Change, %	-36	-29
Elongation Change, %	-13	-76
50% Modulus Change, %	-34	-30
20 Second decay (820 to 0 psig)	Excellent, low swell,	Fair, O-Ring had
Visual appearance	no damage	two splits
<u>75°F, 1000 ml CO₂, 1000 psig, 72 HRS</u>		
Hardness Change, Shore M, pts	-3	-4
Volume Change, %	+3	+2
Weight Change, %	+2	+1
Tensile Strength Change, %	-59	-16
Elongation Change, %	-32	+13
50% Modulus Change, %	-41	-33
20 Second decay (820 to 0 psig)	Good, low swell,	Fair, O-Ring had
Visual appearance	no damage	two splits
Extrusion Test Conditions	V1238-95 2-227 O-Rings	V0858-95 2-227 O-rings
<u>Basic Physical Properties</u>		
Hardness, Shore A	94	
Tensile Strength, psi	2402	
Elongation, %	75	
50% Modulus, psi	1632	
Compression Set (70 HRS @ 392°F)	20.6%	17.0%



Compound Data Sheet
Parker O-Ring Division United States

PI Extrusion Test, 302 ⁰ F, 0.0626" gap		
Failure pressure, psi	510	308
Visual appearance or degradation	Light extrusion	Severe extrusion