Compound Data Sheet
Parker O-Ring Division United States

MATERIAL REPORT

REPORT NUMBER: KK2160
DATE: 1/10/92

TITLE: Evaluation of Parker Compounds V0834-70 and V0965-80 in various media.

PURPOSE: To determine the effects of the following fluids on the compounds listed above.
1) Water (distilled)
2) Stauffer Blend 7700
3) Concentrated Nitric Acid (HNO_3)
4) Concentrated Ammonium Hydroxide (NH_4OH)
5) Concentrated Hydrochloric Acid (HCl)
6) Concentrated Sulfuric Acid (H_2SO_4)
7) Diluted Phosphoric Acid (3M H_3PO_4)

CONCLUSION: 1) V0834-70 exhibits greater compatibility with the media tested with the exception of Stauffer 7700 than V0965-80
2) Distilled water and Stauffer 7700 cause the greatest loss of physical properties and compression set in both compounds.

Note: Due to the aggressive nature of the test media on std. spacer stock, stainless steel washers were used. This reduced the original deflection to 13%.

Recommended temperature limits: -15^0F to 400^0F

<u>Recommended For</u>
Acids
Petroleum, mineral, and vegetable oils
Silicone fluids
Aromatic hydrocarbons (benzene, toluene)
Chlorinated hydrocarbons
High vacuum
Ozone, weather, aging resistance

<u>Not Recommended For</u>
Hot water and steam
Auto and aircraft brake fluids
Amines
Ketones
Low molecular weight esters and ethers

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ORIGINAL PHYSICALS	V0834-70	V0965-80	V0764-90
Hardness, Shore A, pts.	70	85	92
Tensile Strength, MPa (psi.)	8.46 (1227)	14.0 (2025)	13.11 (1901)
Elongation, %	195	181	123
Modulus @ 100%, MPa (psi.)	3.38 (490)	7.36 (1067)	10.89 (1580)
Specific Gravity	1.97	1.91	1.90
ACID AGE 168 HRS. @ R.T. CONCENTRATED $H_2 SO_4$			
Hardness Change, pts.	-2	-3	-4
Tensile Change, %	-.1	-7.2	-18.9
Elongation Change, %	+2.1	+10.5	+4.1
Modulus @ 100% Change, %	-12.5	-19.7	-22.3
Compression Set, %	8.8	20.6	27.6*
Volume Change, %	+.7	+ 1.9	+ 6.9
ACID AGE 168 HRS. @ R.T. CONCENTRATED $HN0_3$			
Hardness Change, pts.	-5	-2	-6
Tensile Change, %	+ 8.8	- 8.9	-27.1
Elongation Change, %	+18.5	-17.7	+ 2.4
Modulus @ 100% Change, %	-19.0	-21.6	-27.3
Compression Set, %	8.8	16.18	16.8*
Volume Change, %	+2.43	+ 1.2	+ 7.4
FLUID AGE 168 HRS @ R.T. CONCENTRATED $NH_4 OH$			
Hardness Change, pts.	-10	-5	-4
Tensile Change, %	-23.4	-23.0	-41.1
Elongation Change, %	+15.4	- .6	-15.5
Modulus @ 100% Change, %	-25.9	-27.2	-31.8
Compression Set, %	5.9	17.6	26.3*
Volume Change, %	+65.6	+ .3	+12.5
ACID AGE 168 HRS @ R.T. 3M $H_3 PO_4$			
Hardness Change, pts.	-5	-2	-1
Tensile Change, %	-7.3	-32.4	-15.0
Elongation Change, %	+ .5	-11.1	- .8
Modulus @ 100% Change, %	-13.9	-22.7	-13.0
Compression Set, %	3.7	15.4	11.8*
Volume Change, %	+ .4	+ .4	+ .44

* Compression Set based on 13% original deflection, due to the use of stainless steel washers.

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ACID AGE 168 HRS. @ R.T.

CONCENTRATED HCl	V0834-70	V0965-80
Hardness Change, pts.	-2	0
Tensile Change, %	-5.6	-30.8
Elongation Change, %	+2.6	-11.1
Modulus @ 100% Change, %	-13.9	-21.3
Compression Set, %	7.3	19.1
Volume Change, %	+1.43	+ .9

FLUID AGE 168 HRS. @ 100°C (212°F)

DISTILLED WATER		
Hardness Change, pts.	-6	-5
Tensile Change, %	+ .9	+5.8
Elongation Change, %	+7.7	+22.7
Modulus @ 100% Change, %	-8.4	-25
Compression Set, %	25.0*	48.5*
Volume Change, %	+1.2	+ .95

OIL AGE 168 HRS. @ 200°C (392°F)

STAUFFER 7700		
Hardness Change, pts.	-11	-8
Tensile Change, %	-35.9	-24.2
Elongation Change, %	-5.5	+1.1
Modulus @ 100% Change, %	-29.8	-25.2
Compression Set, %	45.6*	51.5*
Volume Change, %	+21.3	+6.96

* Compression Set based on 13% original deflection, due to the use of stainless steel washers

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