GREASE COMPATIBILITY CHART

THICKENER	Aluminum Complex	Barium Soap	Barium Complex	Bentone (Clay)	Calcium Stearate	Calcium 12 Hydroxy	Calcium Complex	Calcium Sulfonate	Lithium Stearate	Lithium 12 Hydroxy	Lithium Complex	Polyurea	Silica Gel	Sodium Soap
Aluminum Complex		I	I	I	I	C	I	B	I	I	C	I	C	B
Barium Soap	I			I			B	B	B		B		C	I
Barium Complex	I			I	I	C	I	C	I	I	I	I		I
Bentone (Clay)	I	I	I		C	C	I	I	I	I	I	I	C	I
Calcium Stearate	I		I	C		C	I	C	C	B	C	I		
Calcium 12 Hydroxy	C		C	C	C		B	B	C	C	C	I		
Calcium Complex	I	B	I	I	I	B		I	I	I	C	B	I	I
Calcium Sulfonate	B	B	C	I	C	B	I		B	B	C	I	B	I
Lithium Stearate	I	B	I	I	C	C	I	B		C	C	I	C	I
Lithium 12 Hydroxy	I		I	I	B	C	I	B	C		C	I		
Lithium Complex	C	B	I	I	C	C	C	C	C	C		I	C	I
Polyurea	I		I	I	I	I	B	I	I	I	I			I
Silica Gel	C	C		C			I	B	C		C			I
Sodium Soap	B	I	I	I			I	I	I		I	I	I	

I=Incompatible, C=Compatible, B=Borderline

Note: **The compatibility charts should be used as a reference only.** Compatibility testing is the only way to verify compatibility.

A significant portion of grease lubrication failures can be attributed to mixing greases in a system without taking into consideration compatibility. Different thickener systems can react with each other to modify the physical and chemical structure resulting in the inability to hold or release the base oil. The end result is a grease with unknown performance properties including load, shear, temperature stability, etc..

Many factors including environment can impact this reaction. An example is grease used in a cold climate or a chiller room may have a slower reaction rate as compared to a high temperature application. A high-speed bearing may be very sensitive to slight incompatibility as compared to a low speed bearing.

In addition to grease incompatibility, the additives and base oil compatibility should be considered.

It is recommended that when changing from one grease system to another, the component should be cleaned if at all possible. If this is not possible, verify the greases are compatible and make an assessment of the application criticality and environment. If the grease thickener (don't forget base oil) is noted by to be compatible, purge or flush out as much of the old grease as possible. It is often most efficient to perform while the machine is operating. **Monitor, assess** and repurge/flush component soon after. It is the end users responsibility to verify the final application and product compatibility. Use caution as to not over grease.

Compatibility testing is the best option. Compatibility testing includes heating and holding grease for a specified time at assumed operating temperature for mixtures of 10:90, 50:50 and 90:10. The grease is then inspected for visual abnormalities and can be tested for penetration and four-ball wear change.

Base Oil Compatibility Chart

Base Oil	Mineral Oil	Ester Oil	Polygycol Oil	Silicone Oil (Methyl)	Silicone Oil (phenyl)	Polyphenyl ether oil	Perfluorinated aliphatic ether oil
Mineral Oil	X	C	I	I	B	I	I
Ester Oil	C	X	C	I	C	C	I
Polygycol Oil	I	C	X	I	I	I	I
Silicone Oil (Methyl)	I	I	I	X	B	I	I
Silicone Oil (phenyl)	B	C	I	B	X	C	I
Polyphenyl ether oil	I	C	I	I	C	X	I
Perfluorinated aliphatic ether oil	I	I	I	I	I		X

Elastomer Compatibility Chart

Seal Matl. Base Oil	Buna N	Butyl	Kalrez (perflour)	Neoprene	Nordel (EPDM)	Silicon	Teflon (PTFE)	Viton (flouro)
Mineral Oil	C	I	C	C	I	C	C	c
Organic ester	B	I	C	I	I	I	C	C
Polygycol	C	C	C	C	C	C	C	C
Phosphate esters	I	C	C	I	C	C	C	C
Silicone	C	C	C	C	C	I	C	C
Polybutenes	B	C	C	B	C	C	C	C
Fluorinated Ester	C	C	B	C	C	C	C	C
Synthesized Hydrocarbon	B	I	C	C	I	I	C	C
Chlorofluorinated Hydrocarb	C	C	C	C	C	C	C	B
Cont service limits F/C	225	250	550	225	300	450	500	400

Again, use these charts as a reference. Additional analysis may be required.