

3 Components of Grease

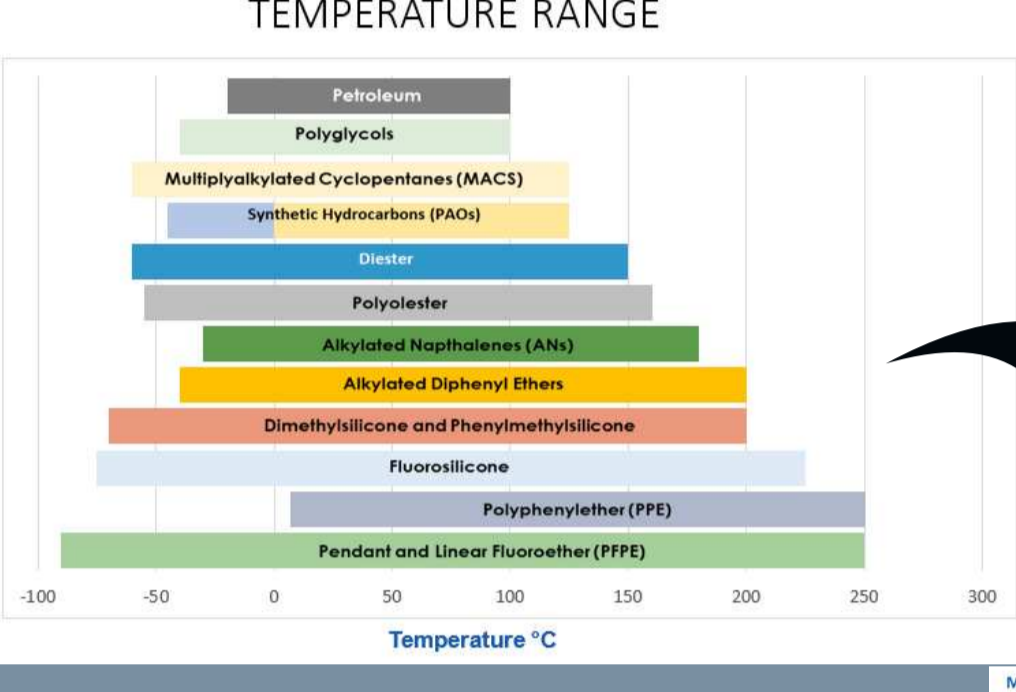
Newgate Simms are proud partners of Nye Lubricants.



How is Grease made?

1 Base Oils

Finding the right base oil is crucial to successfully solving any lubrication challenges.



Such as suitable temperatures.

And material compatibility!

Material	AN & PAO	Polyglycols	Esters	Silicones	MAC	PFPE
PLASTICS						
Acetals	Good	Good	Good	Good	Good	Good
ABS	Good	Good	Good	Good	Good	Good
Polyamide (nylon) PA	Good	Good	Good	Good	Good	Good
Polycarbonate (PC)	Good	Good	Good	Good	Good	Good
Polyethylene	Good	Good	Good	Good	Good	Good
Polypropylene	Good	Good	Good	Good	Good	Good
Polystyrene	Good	Good	Good	Good	Good	Good
PTFE	Good	Good	Good	Good	Good	Good
Terephthalate (PBT)	Good	Good	Good	Good	Good	Good
ELASTOMERS						
Buna S	Good	Good	Good	Good	Good	Good
EPDM, EPR	Good	Good	Good	Good	Good	Good
Fluoroelastomer (Viton)	Good	Good	Good	Good	Good	Good
Natural Rubber	Good	Good	Good	Good	Good	Good
Nitrile	Good	Good	Good	Good	Good	Good
Silicone	Good	Good	Good	Good	Good	Good

Synthetic > Mineral

Our synthetic oils consist of chemical compounds that are artificially made. Synthetic lubricants can be manufactured using chemically modified petroleum components but we synthesise from other raw materials

Mineral oils, such as petroleum, are named such as they are extracted from mineral sources. Despite their natural occurrence, mineral oils suffer from inconsistency.

What's the difference?

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| <ul style="list-style-type: none"> Capable of dealing with a broader temperature range, including extreme temperatures Compatible with most plastics and metals. wide variety of costs depending on application. Minimal change in characteristics within recommended operating temperature range. | Synthetic Oils
Mineral Oils | <ul style="list-style-type: none"> Operate in a narrow temperature range. Material compatibility issues are common. Very low cost. Product variability |
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2 Thickeners/Gellants

Different thickeners are added to oils to give a grease extra characteristics

Choosing the right viscosity



Viscosity determines how thick the grease is and different applications will require differing levels of viscosity.

Gellant	Water Resistance	Salt Water Resistance	Thermal Stability	Low Noise Contribution	Thickening Efficiency	Lubricity	Shear Stability
ORGANIC SOAPS							
Lithium	Good	Poor	Good	Good	Good	Good	Good
Lithium Complex	Good	Poor	Good	Good	Good	Good	Good
Sodium	Fair	Poor	Fair	Good	Fair	Good	Good
Sodium Complex	Good	Poor	Good	Good	Good	Good	Good
Calcium	Good	Poor	Poor	Good	Fair	Good	Fair
Calcium Complex	Good	Poor	Good	Good	Fair	Good	Fair
Calcium Sulfonate	Good	Fair	Good	Good	Fair	Good	Fair
Aluminum Complex	Good	Fair	Good	Good	Fair	Good	Fair
ORGANIC NON-SOAPS							
Polyurea	Good	Good	Good	Good	Good	Good	Fair
PTFE	Good	Good	Good	Good	Fair	Good	Good
INORGANIC							
Bentonite Clay	Good	Good	Good	Fair	Good	Fair	Fair
Hydrophilic Silica	Poor	Poor	Good	Fair	Good	Poor	Fair
Hydrophobic Silica	Poor	Poor	Good	Fair	Good	Poor	Fair
Carbon Black	Poor	Poor	Good	Fair	Fair	Poor	Fair

3 Available Additives

Anti-corrosion
Slows Corrosion on non-noble metals

Anti-oxidant
Prolongs life on base oil

Anti-rust
Slows corrosion on iron alloys

Anti-wear
Protection on loaded metal surfaces

Conductive Agent
Adds thermal or electrical conductivity

Dye
Visual/UV markers for inspection or assembly.

Extreme Pressure
Solid burnishes under extreme pressure

Pour Point depressant
Improves lower temperature limit

Friction Modifier
Reduces the coefficient of friction, or stick/slip

Tackifier
Increases compatibility to moving parts