COAST LUBRICANTS & INDUSTRIAL SUPPLY

SynBio™ Series
NEPTUNE EP GEAR

NEPTUNE EP GEAR

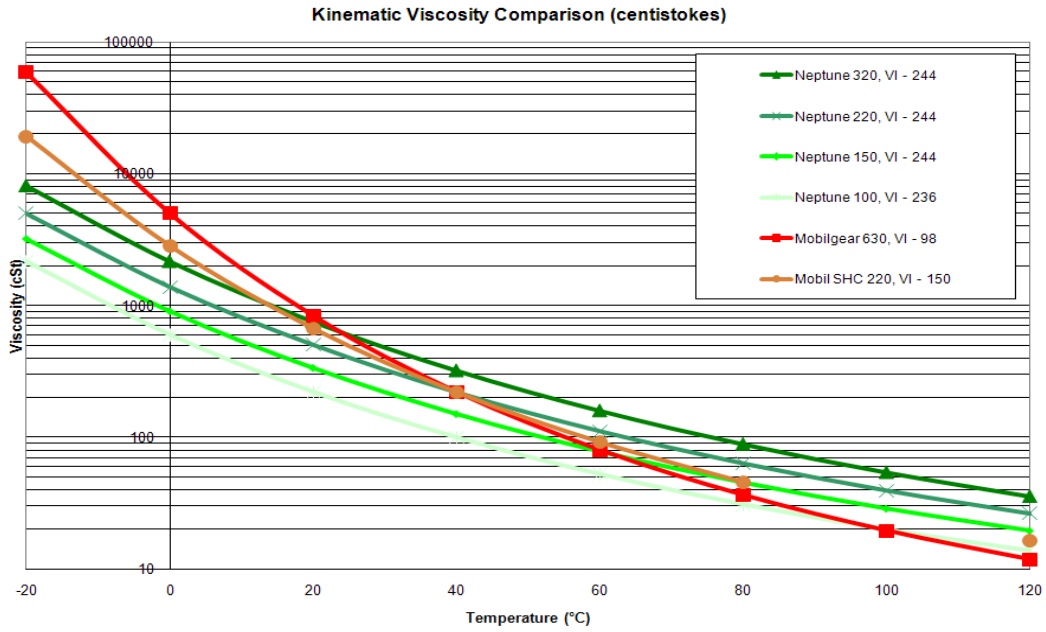
SYNTHETIC EXTREME PRESSURE GEAR FLUIDS

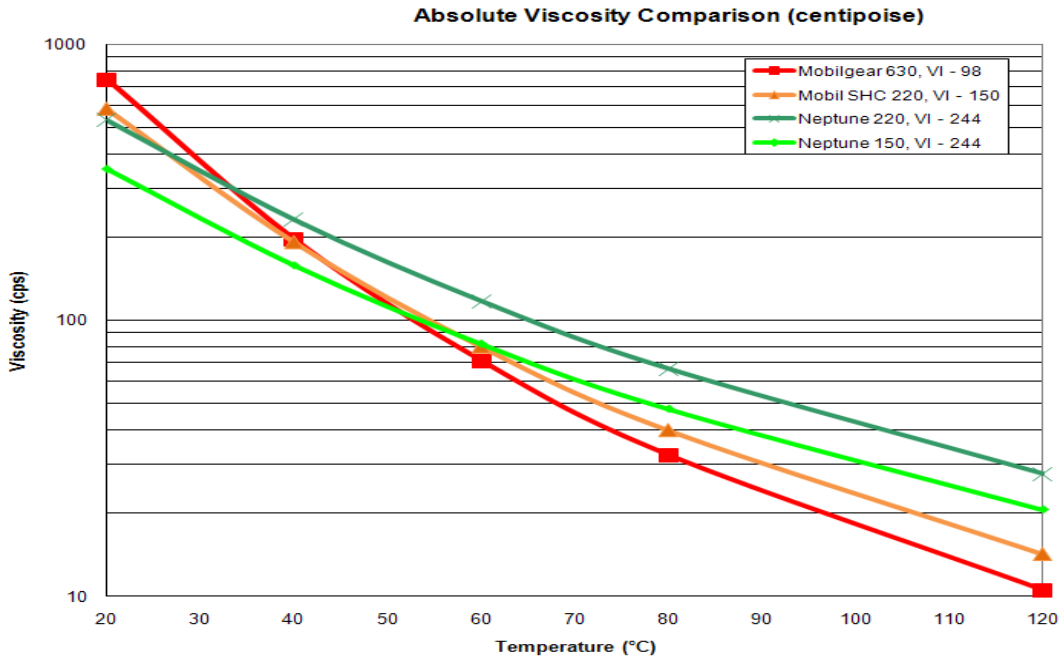
DESCRIPTION:

Neptune EP Gear Lubricants are fully formulated, high performance gear lubricants for enclosed industrial gears. Neptune® EP Gear Lubricants are formulated to provide excellent lubrication, stability and extended service life while eliminating many of the problems commonly encountered with petroleum gear lubricants. These gear lubricants are designed for demanding industrial applications, with a special emphasis on applications where spills into the water require an environmentally appropriate lubricant. They are anhydrous, do not hydrolyze in the presence of water and do not break down to form sludge or varnish. Neptune® EP Gear Lubricants are ideal for use in applications such as dockside and marine mobile equipment, forestry, coal handling, amusement, cooling towers, wind turbines and industrial operations. The EP additive is not suitable for use with worm gears.

ADVANTAGES:

- Heavier than water - They do not form a sheen when exposed to water
- Water soluble – no bioaccumulation
- Elimination of sludge and carbonaceous residues common with mineral oils
- Biodegradable
- Reduced energy consumption
- Extended service life
- Reduced lubricant and maintenance costs
- Reduced wear rates
- High viscosity index:
- Eliminates seasonal oil changeovers
- Facilitates cold-weather startups
- Eliminates motor overloading during startup


Kinematic Viscosity Comparison (centistokes)
Viscosity (cSt)
100000
10000
1000
100
10
-20
0
20
40
60
80
100
120
Temperature (°C)
Neptune 320, VI - 244
Neptune 220, VI - 244
Neptune 150, VI - 244
Neptune 100, VI - 236
Mobilgear 630, VI - 98
Mobil SHC 220, VI - 150


Absolute Viscosity Comparison (centipoise)
Viscosity (cps)
1000
100
10
20
30
40
50
60
70
80
90
100
110
120
Temperature (°C)
Mobilgear 630, VI - 98
Mobil SHC 220, VI - 150
Neptune 220, VI - 244
Neptune 150, VI - 244

Neptune EP Gear Lubricants

AGMA VISCOSITY GRADES:

Due to the high viscosity index exhibited by **Neptune EP Gear Lubricants** are not classified by one AGMA viscosity rating and will effectively span 2 or 3 AGMA numbers over the operating range of most gear boxes. By knowing either the viscosity required at the operating temperature or the AGMA rating of the current lubricant, an appropriately performing **Neptune EP Gear Lubricant** can easily be chosen.

SELECTION GUIDE FOR NEPTUNE® LUBRICANTS:

	AGMA Grades Usually Replaced
Neptune 100	2-4
Neptune 150	3-6
Neptune 220	4-7
Neptune 320	5-7
Neptune 460	6-8

ELASTOMER COMPATIBILITY:

Neptune EP Gear Lubricants are suitable for use with most elastomeric materials used in seals and gaskets. Below is a partial list of elastomers compatible with **Neptune EP Gear Lubricants**:

- VITON® (FKM)
- Butyl Rubber
- Natural Red Rubber
- KALREZ®
- Buna-N, Buna-S
- Natural Gum Rubber
- Silicone
- Neoprene
- Polysulfide
- HYCAR®
- HYPALON®
- EPR, EPDM
- FLUORAZ®
- AFLAS®
- Natural Black Rubber

MONITORING NEPTUNE® GEAR LUBRICANTS:

Although **Neptune EP Gear Lubricants** will show a greatly extended service life under most conditions, one should not neglect to perform periodic maintenance and inspection. Periodic inspection of the lubricant will help insure continued trouble-free operations. American Chemical Technologies offers analytical testing for **Neptune EP Gear Lubricants**.

CHANGEOVER PROCEDURE:

Installation of **Neptune EP Gear Lubricants** into gear boxes which previously contained petroleum oils should follow the flush procedure below:

1. Drain previous lubricant from the gear box.
2. Replace oil filters.
3. Fill the gear box with the **Neptune EP Gear Lubricant** to be used. Run under normal operating conditions for 24 hours. **Neptune EP Gear Lubricants** will generally clean varnish and sludge build-up formed from petroleum oils.
4. Thoroughly drain the **Neptune EP Gear Lubricant** from the box while warm.
5. Inspect the oil filters and replace as needed.
6. Fill the box with fresh **Neptune EP Gear Lubricant** and begin normal operation.
7. Inspect and change filters as required.

This procedure should be followed for best results. However, residual petroleum lubricants can usually be tolerated in the **Neptune EP Gear Lubricant**.

Neptune EP Gear Lubricants

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

- Avoid contact with eyes.
- Wash thoroughly after handling.

PROPERTIES:

	Test Method	N68	N100	N150	N220	N320	N460
Viscosity @ 40°C	ASTM D445	68 cSt	100 cSt	150 cSt	220 cSt	320 cSt	460 cSt
Viscosity @ 100°C	ASTM D445	14 cSt	20 cSt	29 cSt	40 cSt	54 cSt	74 cSt
Viscosity Index	ASTM D2270	227	236	244	244	244	250
Pour Point	ASTM D97	-42°C(-44°F)	-42°C(-43°F)	-41°C(-42°F)	-40°C(-40°F)	-39°C(-38°F)	-37°C(-34°F)
Density @68 °F	ASTM D1298	8.68 lbs/gal	8.69 lbs/gal	8.73 lbs/gal	8.75 lbs/gal	8.77 lbs/gal	8.80 lbs/gal
Flash Point	ASTM D92	239°C(462°F)	239°C(462°F)	229°C(444°F)	228°C(443°F)	227°C(441°F)	227°C(441°F)
Ash	ASTM D482	<0.01 %	<0.01 %	<0.01 %	<0.01 %	<0.01 %	<0.01 %
Water content	ASTM E203	<0.25 %	<0.25 %	<0.25 %	<0.25 %	<0.25 %	<0.25 %
Rust Prevention (24h)	ASTM D665A	Pass	Pass	Pass	Pass	Pass	Pass
Copper Strip Corrosion	ASTM D130	1a	1a	1a	1a	1a	1a
EP Properties (Four-Ball Method)	ASTM D2783						
Weld Point		250 kgf	250 kgf	250 kgf	250 kgf	250 kgf	250 kgf
Load-Wear Index		65 kgf	65 kgf	65 kgf	65 kgf	65 kgf	65 kgf
OK Load (Timken Method) , min.	ASTM D2509	120 lb-f	120 lb-f	120 lb-f	120 lb-f	120 lb-f	120 lb-f

The information contained herein is correct to the best of our knowledge. The recommendations or suggestions contained in this bulletin are made without guarantee or representation as to results. We suggest that you evaluate these recommendations and suggestions in your own laboratory prior to use. Our responsibility for claims arising from breach of warranty, negligence, or otherwise is limited to the purchase price of the material. Freedom to use any patent owned by American Chemical Technologies' or others is not to be inferred from any statement contained herein.

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