



# VACUUM OILS & GREASES

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- Mechanical Pumps Fluids ..... N 02

## Mechanical Pumps Fluids

Neyco offers a complete line of mechanical oils for all pump types and vacuum applications. Benefits of proper pump fluid selection include longer pump life and less backstreaming which leads to a cleaner vacuum system and increased productivity. Our strict quality control procedures insure a product that is recommended by major manufacturers.

These fluids include :

- Mineral oils: these fluids are distillation and refining products extracted from petroleum.
- Fluids based on Perfluoropolyether (PFPE): they consist of Carbon, Fluorine and Oxygen atoms.

This wide selection ensures that we can supply the proper fluid for your application.

MINERAL OILS	VAPOR PRESSURE AT 25°C (mbar)	BOILING POINT AT 10 <sup>-2</sup> mbar (°C)	VISCOSITY AT 40°C (cSt)	DENSITY AT 25°C (g/ml)
Inland 19	1.10 <sup>-5</sup>	112	55	0.86
Invoil 20	< 1.10 <sup>-6</sup>	127	58	0.86
Inland TW	< 1.10 <sup>-6</sup>	158	65	0.86
Inland 45	1.10 <sup>-7</sup>	133	53	0.83
Inland 100+	5.10 <sup>-5</sup>	138	100	0.87

PFPE PRODUCTS	VAPOR PRESSURE AT 25°C (mbar)	BOILING POINT AT 10 <sup>-2</sup> mbar (°C)	VISCOSITY AT 40°C (cSt)	DENSITY AT 25°C (g/ml)
Fomblin Y6/6	3.10 <sup>-6</sup>	> 250	64	1.88
Fomblin Y14/6	2.10 <sup>-7</sup>	> 250	148	1.89
Fomblin Y16/6	2.10 <sup>-6</sup>	> 250	168	1.89
Fomblin Y25/6	4.10 <sup>-8</sup>	> 250	276	1.90
Inland geminYe 6	4.10 <sup>-7</sup>	> 250	62	1.88
Inland geminYe 14	2.10 <sup>-7</sup>	> 250	142	1.89
Inland geminYe 16	2.10 <sup>-7</sup>	> 250	168	1.89
Inland geminYe 25	1.10 <sup>-7</sup>	> 250	261	1.90
Inland geminYe SV	5.10 <sup>-9</sup>	> 250	200	1.90

## INLAND 19

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Inland 19 is recommended for use in non-corrosive applications. Through molecular distillation light end fractions are removed, resulting in lower vapor pressures and reduced backstreaming compared to undistilled refinery products. These properties allow Inland 19 to be

used with more expensive diffusion pump fluids that are normally contaminated when combine with lesser fluids. Compared to refinery fluids Inland 19 offers reduced maintenance costs, better pumping cycles, longer fluid life, and a cooler running pump.

## INVOIL 20

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Invoil 20 is the standard mechanical pump fluid used in applications involving corrosive or reactive gases. This fluid has been distilled to remove the majority of the light fractions present in all raw material feedstock. The removal of these fractions slows the degradation process and reduces the rate of sludge accumulation in the mechanical pump. Actual field use indicates that

Invoil 20 tends to extend the useful service life of the fluid anywhere from 5 to 10 times that of standard hydrocarbon fluid. Invoil 20 can also be used as diffusion pump fluid. This represents a great advantage by allowing users to establish a homogenous system and thus prevents any cross-contamination.

## INLAND TW

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Inland TW fluid is specifically recommended for applications where exposure to reactive or corrosive gasses is prevalent. These products are distilled USP grade hydrocarbon oil. Both unsaturates and aromatics have been removed to result in a longer lasting, superior fluid. They also contain an excellent additive package for thermal and chemical resistance. Typical applications

include nitride decomposition, LPCVD, plasma etch, and ion implantation. When compared to Invoil 20, Inland TW will last 1.5 - 4 times longer and exhibit:

- Corrosive service
- High thermal stability
- High oxidation stability
- Reduced backstreaming

## INLAND 45

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Inland 45 synthetic hydrocarbon fluid permit strain-free cold starts as a result of their low pour point and high viscosity index (i.e. viscosity is lower than that of typical pump fluids at low temperatures). In addition, because these fluids maintain their viscosity at high temperatures, it provides a good seal under full-load conditions. Among other properties offered by Inland 45's unique molecular

structure are chemical resistance and high temperature stability superior to those of other high performance oils, such as white oils; and low vapor pressure.

Non toxic, non corrosive, Inland 45 is compatible with Buna-N, neoprene and Viton elastomers; and miscible with petroleum based oils, Freon, aromatic solvents, and flushing fluids.

## INLAND 100+

Inland 100+ is a general purpose hydrocarbon fluid designed for use in rotary vane piston pumps. Its high viscosity provides the necessary lubrication and sealing required for piston pumps in non-corrosive applications. This fluid is not recommended for high oxygen concentrations or corrosive materials.



Inland 19 - Inland 45

SPECIFICATIONS	UNITS	INLAND 19	INVOIL 20	INLAND TW	INLAND 45	INLAND 100+
Vapor pressure at 25°C	mbar	1.10 <sup>5</sup>	3.10 <sup>6</sup>	< 1.10 <sup>6</sup>	< 1.10 <sup>7</sup>	< 5.10 <sup>5</sup>
Boiling point at 10 <sup>-2</sup> mbar	°C	112	127	158	133	138
Viscosity at 40°C	cSt	55	58	65	53	100
Viscosity at 100°C	cSt	8.1	8.5	9.1	7.0	9.9
Pour point	°C	-15	-10	-12	-59	-9
Flash point	°C	213	224	243	264	257
Fire point	°C	244	259	270	288	291
Density	g/ml	0.86	0.86	0.86	0.83	0.88
Packaging	-	1 L/5 L/19 L	1 L/5 L/19 L	1 L/3.8 L/5 L/19 L	1 L	5 L/19 L/209 L

## FOMBLIN YL-VAC

Fomblin vacuum pump fluids are non-flammable, chemically inert, and thermally stable. When used with proper pump filtration, Fomblin PFPE fluids provide exceptionally long service life. These fluids have excellent lubricity properties and are available in viscosity grades suitable for use in all vacuum pumps.

- Low vapor pressure
- Chemical inertness
- High thermal stability
- Good lubricating properties
- No flash or fire point
- Low toxicity
- Excellent compatibility with metals, plastics, elastomers
- Good aqueous and non-aqueous solvent resistance
- High dielectric properties
- Low surface tension
- Good radiation stability
- Environmentally acceptable

## INLAND *geminYe* PFPE OILS LOW VAC GRADES

*geminYe* PFPE family of lubricants are non-flammable, chemically inert and thermally stable. *geminYe* fluids have excellent lubricity properties and are available in viscosity grades suitable for use in all vacuum pumps. When used with proper filtration, *geminYe* fluids provide exceptionally long service life. They are a less expensive alternative to the Fomblin range.

*geminYe* PFPE inert fluids are also available with antirust protection. *geminYe* 06RP, 14RP, 16RP, 25RP, SVRP, all have the same properties of the standard fluids. The additive enhances the performance of *geminYe* RP oils, giving them long-term antirust properties repel moisture, providing extra protection from corrosion of metal parts and bearing surfaces.

- Low vapor pressure
- Oxygen compatible
- Non-flammable
- Solvent resistant
- Low relative weight loss
- Chemically inert
- Excellent compatibility with metals, plastics, elastomers
- CFC-free - Ozone friendly
- Corrosion resistant
- High thermal stability
- High dielectric properties
- No flash or fire point
- Reclaimable

SPECIFICATIONS	UNITS	FOMBLIN				<i>geminYe</i>					
		Y06/6	Y14/6	Y16/6	Y25/6	6	14	16	25	SV	SVRP
Vapor pressure at 25°C	mbar	3.10 <sup>-6</sup>	2.10 <sup>-7</sup>	2.10 <sup>-6</sup>	4.10 <sup>-8</sup>	4.10 <sup>-7</sup>	2.10 <sup>-7</sup>	2.10 <sup>-7</sup>	1.10 <sup>-7</sup>	5.10 <sup>-9</sup>	5.10 <sup>-9</sup>
Boiling range	°C	> 250	> 250	> 250	> 250	> 250	> 250	> 250	> 250	> 250	> 250
Viscosity at 20°C	cSt	64	148	168	276	62	142	168	261	200	200
Pour point	°C	-50	-45	-45	-35	-60	-54	-45	-48	-38	-38
Flash point	°C	None	None	None	None	None	None	None	None	None	None
Fire point	°C	None	None	None	None	None	None	None	None	None	None
Density	g/ml	1.88	1.89	1.89	1.90	1.88	1.89	1.89	1.90	1.90	1.90
Packaging	-	1 kg	1 kg	1 kg	1 kg	1 kg	1 kg	1 kg	1 kg	1 kg	1 kg



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