GEOlube® IL SW Range
Product Data

GEOlube® IL SW Range — TECHNICAL DATA SHEET

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The **GEOlube® Industrial Lubricants SW** grades are a range of Polyalkylene Glycol based synthetic lubricants, which offer outstanding load carrying properties and excellent thermal stability.

They have been purpose designed to provide excellent corrosion protection (ASTM D665, procedure B pass) and demulsibility characteristics (according to ASTM D1401).

Application Areas

GEOlube® IL SW grades allow thermally stable operation at temperatures in excess of 200°C.

Typical applications include:

- Lubrication of calenders and piston compressors,
- Lubrication of bevel, spiral bevel, helical, enclosed spur and worm gear units.

These lubricants are free of chlorine, sulphur and metal based additives, including lead. They remain homogeneous from below their pour point to temperatures in excess of 250°C. The anticipated service lifetime of all grades is substantially in excess of 10,000 hrs @ 100°C.

In industrial enclosed gear units, the performance allows for extended drain intervals and, in some cases, for operation as a "Fill for Life" lubricant.

Approvals

General approval has been given for this lubricant range as a Type G lubricant in David Brown industrial enclosed gear units.

The **GEOlube® IL SW** grades have also been tested and conform to the requirements of SKF for use in paper machines. They are also compliant with DIN 51517 Part 3, CLP oils.

Physical & Performance Data

Property	IL150SW	IL220SW	IL320SW	IL460SW	IL680SW	Method
Kinematic viscosity						
@40°C, cSt	150	237	325	433	660	IP 71
@100°C, cSt	25	31.8	44.8	63.7	86	
Viscosity index	195	177	196	220	219	IP 226
Pour point,°C	-30	-30	-30	-28	-30	IP 15
PMCC flash point,°C	191	231	225	225	225	IP 34
Neutralisation, mgKOH/g	0.9	1.09	1.12	1.15	1.08	IP 139
Density @20°C, kg/m^3	994	1006	1005	1007	1002	IP 160
Oxidation stability Total Oxidation Products, %	0.552	0.554	0.523	0.500	-	IP 280
Load carrying capacity, FZG failure load (A/8. 3/90)	>13	>13	>13	>13	>13	IP 334
Timken OK load, lbs.	27	27	35	35	-	ASTM D2782
Weld load, kg	168	175	170	170	170	ASTM D2783
Corrosion, Copper Strip classification (3 hrs. @100°C)	1b	1a	1b	1a	1a	IP 154
Corrosion, rust prevention						
Procedure A	Pass	Pass	Pass	Pass	Pass	IP 135
Procedure B	Pass	Pass	Pass	Pass	Pass	
Volume of foam, ml						
Sequence 1	nil/nil	nil/nil	nil/nil	nil/nil	10/10	-
Sequence 2	nil/nil	nil/nil	nil/nil	nil/nil	10/0	
Sequence 3	nil/nil	nil/nil	nil/nil	nil/nil	10/0	
Air release, min. @90°C	19	17	27	25	27	ASTM 3427
Demulsibility @82°C						
Emulsion, ml	3	3	0	0	3	ASTM D1401
Free water, ml	37	37	40	40	37	

GEOlube® IL150SW, IL220SW & IL460SW

These lubricants were tested to DEF. Standard 05-50.1, No 29

Grade		IL150SW	IL220SW	IL460SW
Wt change mg/cm^2 and appearance (various metals)	Mg	No change Very light tarnish	No change Very light tarnish	No change Very light tarnish
	Al	+0.01 Very light tarnish	No change, Very light tarnish	-0.01 Very light tarnish
	Cu	-0.05 3b dark tarnish	-0.05 3b dark tarnish	-031 4a dark tarnish
	Cd	-7.9, Moderate tarnish Heavy surface pitting	-1.62 Moderate tarnish Light surface pitting	-3.6 Moderate tarnish Light/moderate pitting
	Fe	-0.02 Light tarnish	-0.02 Light tarnish	-0.02 Light tarnish
Kinematic viscosity @ 40°C , cSt				
	Initial	137.3	206.2	432.7
	Final	142.4	229.3	400.6
Acid value, mgKOH/g				
	Initial	1.05	1.12	1.09
	Final	0.29	0.63	0.71
Evaporation loss, % wt		1.5	1.3	2.0
Appearance		Dark golden brown No separation or gumming	Dark golden brown No separation or gumming	Dark golden brown No separation or gumming

Flush Procedure

When changing from mineral oil to a **GEOlube® Industrial Lubricant**, the following procedure should be followed:

- The system should be run until old oil is warm, then drained as fully as possible with particular attention being paid to reservoirs, lines etc…, where oil may be trapped. The system should be cleaned of residual sludge.
- Flush the system with the minimum quantity of **GEOlube® IL** by operating under no load, then drain the system whilst the fluid is warm. Repeat if necessary.
- Seals, etc.., should be inspected and replaced if deteriorated. Seals previously exposed to mineral oil may shrink when exposed to **GEOlube® IL** fluids, therefore it may be advantageous to replace them. The system can then be filled with **GEOlube® IL**.
- It is useful to inspect the lubricant after one of two days in use to make sure that it is free of extraneous materials. Contamination with significant quantities of other lubricants can, in some cases, lead to sludging, foaming and other problems.

Registration & Regulatory Information

Please refer to the safety datasheet.

Handling & Storage

This product can be stored for at least 2 years at ambient storage temperature and conditions without any deterioration. Please refer to the safety datasheet for all relevant information.

Miscellaneous

Various pack types are available; please contact your local GEO Specialty Chemicals representative for further information.