Shell GARIA® Oils 631S and 632S

Dark colored, active sulfur, heavy duty cutting oils

Shell GARIA®631S-32 and Shell GARIA®632S-46 lubricants are dark, active sulfur, heavy duty cutting oils formulated using severely hydroprocessed base stocks with a naturally high viscosity indices. Shell GARIA®631S-32 and Shell GARIA®632S-46 lubricants contain highly effective extreme pressure and lubricity additives that help extend tool life, and prevent welding of chip-to-tool. They are also effective at providing rust and corrosion protection of the parts, the cutting tools, and the machine.

Performance Features and Benefits

- Excellent lubricity and extreme pressure properties
- Chip to tool welding (built up edge) minimization
- Promotes long tool life
- Excellent surface finish
- Corrosion/rust protection of part and machine

Main Applications

- Broaching
- Tapping
- Threading
- Form grinding
- Deep hole drilling
- Both lubricants contain active sulfur which can stain copper and its alloys and should not be used to machine these metals.

Advice on applications not covered in this handbook may be obtained from your Shell representative.

Handling and Safety Information

For information on the safe handling, storage, or use of this product, refer to its Material Safety Data Sheet at http://www.epc.shell.com/. If you are a Shell Distributor, please call 1+800-332-6457 for all of your service needs. All other customers please call 1+800-237-8645 for all of your service needs.

Protect the Environment

Do not discharge into drains, soil, or water.

Typical Physical Properties

Shell GARIA® Oils	**Test Method**	**631S-32**	**632S-46**
Appearance		Black Liquid	Black Liquid
Odor		Compounded	Compounded
Gravity, °API	D 1298	30.2	27.8
Viscosity:			
@ 40 °C, cSt	D 445	32.6	46.7
@ 100 °C, cSt	D 445	5.5	7.1
@ 100 °F, SUS	D 88	168.1	240.3
@ 212 °F, SUS	D 88	44.7	50.0
Viscosity Index	D 2270	104	110
Flash Point, COC, °F	D 92	390	395
Pour Point, °F	D 97	0	10
Rust Test, Distilled Water	D 665A	Pass	Pass
Four-Ball EP	D 2783		
Load Wear Index, kgf		107	118+
Weld Point, kgf		620+	620+
Sulfur		Present	Present
Chlorine		None	None
Phosphorus		None	Present
Fatty Oil		Present	Present

These characteristics are typical of current production. While future production will conform to Shell's specification, variations in these characteristics may occur.