Anti-Stat Anti-Stat PREMIUM

Anti-Static Elements

During the production of hydraulic oils, “additive packages” are introduced into the base oils to give the fluids certain characteristics they need for the demanding conditions of today’s systems. The additives improve viscosity, reduce friction, prevent wear, and allow the fluid to tolerate high temperatures without oxidation.

Some oils are produced with toxic aromatics and heavy metals, with a high electrical conductivity, but because of their toxicity and potential threat to the environment, they no longer comply with current, international environmental standards. Other groups of oils are produced with the appropriate, approved additive packages, often labeled as highly refined or synthetic. They contain no toxins or carcinogens, and are free of heavy metals, but due to their metal-free nature, they have a lower electrical conductivity rating.

Low electrical conductivity means that any charges that are generated through the oil flow may not be dissipated quick enough, thus causing sparking. Ultimately, this can cause explosions in the reservoir or damage to vital hydraulic components, such as valves and filters.

The sparks can also interfere with or damage expensive electronic components, and form oil-ageing deposits, such as varnish. Varnish then settles on the oily surfaces of the vital components and has a detrimental effect on how well your machine functions. Potential consequences of varnish also includes seized valve spools, overheated solenoids, and extremely short filter element service life.

The Anti-Stat and Anti-Stat Premium elements were developed to greatly reduce or eliminate electrostatic discharging problems that can occur during filtration of hydraulic and lube fluids. By combining proven Excellement® media and ASP® technology, it is now possible to offer both high filtration efficiency and electrical conductivity.

Other key areas that can contribute to Electrostatic Discharge:

- Filter Media – media layer construction can influence high voltage charge
- Hydraulic Fluids – group II and III have low conductivity
- Temperature – higher voltage charge will generally exist with lower temperature

Anti-Stat versus Anti-Stat Premium Media

Since levels of ESD in a hydraulic system can vary, Schroeder Industries provides two expertly engineered anti-static element options for remediating static buildup in hydraulic equipment:

Anti-Stat

- Standard anti-static element option
- High filtration efficiency
- Prevents static buildup in fluids with medium conductivity levels and moderate levels of ESD
- Engineered for fluid conductivity levels of 100 pS/m and **higher**

Anti-Stat PREMIUM

- Advanced anti-static element option
- High filtration efficiency
- Prevents static buildup in fluids with low conductivity levels and extreme levels of ESD
- Engineered for fluid conductivity levels of 100 pS/m and **lower**

Schroeder Element Media

Anti-Stat

Choosing The Right Anti-Static Elements For Your Application

Depending on the level of conductivity in your hydraulic fluid, different element options are best suited to High, Medium, or Low/Critical conductivity. Below is a selection of commonly used oil types, and the media Schroeder Industries recommends for each. Remember: **higher conductivity** means less static, and **lower conductivity** means more static.

EXCELLEMENT Synthetic Microglass Filtration Media®

Excellement® media is appropriate for oils with **high conductivity** (>500 pS/m)

500 pS/m

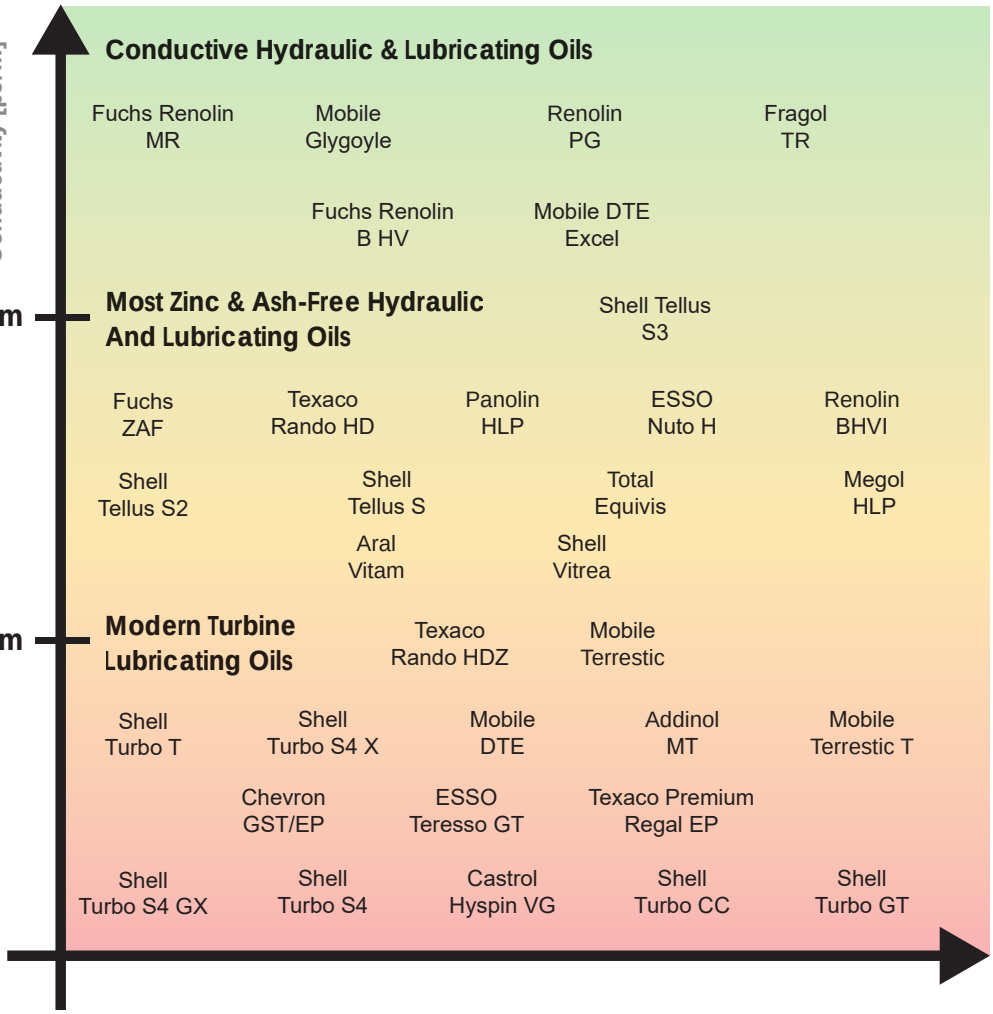
Anti-Stat

Anti-Stat media is appropriate for oils with **medium conductivity** (>100 pS/m).

100 pS/m

Anti-Stat PREMIUM

Anti-Stat Premium media is appropriate for oils with **low conductivity** (<100 pS/m). This is the where most critical levels of ESD can occur.



Media Comparison

As flow rate increases, the friction between the oil and filter element increases, which leads to static buildup. See how these three media types stack up in increasing flow rate scenarios:

Anti-Stat Premium entirely eliminates charging even as flow rate increases, compared to the moderate performance of Anti-Stat Media.

Electrostatic Charging: Excellement, Anti-Stat Media, Anti-Stat Premium