

'Providing Tribological Solutions'

VSG GREASES
Re: Ecology, Environment & Energy

**'GREEN' AND COST SAVING ADVANTAGES FOR
VSG® 'The Green Grease'**

VSG is a state of the art grease with an advanced grease thickener and a canola oil base fluid. It was specifically developed to meet hydroelectric power station user requirement for wicket gate bearings and other applications in environmentally sensitive applications. It has been well proven in service with over 30 years of repeat users ranging from small river units to the largest units in North America.

In addition, VSG grease can help users meet their cost savings and 'green' goals for the following reasons;

1. Being an extreme pressure rated grease and offering outstanding corrosion protection VSG can be used in other applications as well. Exceptions being high temperatures or UV exposure.
2. VSG grease is mainly canola oil. It has a lower aquatic toxicity (LC50) than most mineral oil based alternatives that have been tested. In tests for daphnia aquatic toxicity testing it did very well for an EP grease and meets the US Navy requirements for a 'green' open gear grease.
3. In the leachate testing for landfill requirements VSG did not leach out any elements of concern. Just mainly calcium.
4. VSG contains neither added metals like lead, zinc or lithium, nor added halogens like chlorine or fluorine nor added ozone depleting solvents.
5. The LogP n-Octanol Partition Coefficient is <3 so by an EPA definition is non-bioaccumulative. This is good for the environment.
6. Some users have reported that they can use much less VSG and that it lasts many times longer in service so this could contribute to a reduction of GHG (greenhouse gas emissions) because not as much grease is required so less would be released during grease manufacturing.

VSG Grease

NEWS RELEASE 'GREEN' ADVANTAGES FOR VSG cont'd

7. VSG can be more energy efficient because it can perform longer in the applications and does not age harden or stiff as quickly as the previously used grease so that less energy is required to operate the wicket gates. Not having a soap type thickener VSG also seems to be less prone to plugging distributor blocks on automatic grease systems. Again, saving costs because they are less likely to have to be stripped down and cleaned.
8. The reliability and hence the availability of the gates can be better because of the superior performance and better anti wear and corrosion protecting characteristics. This should mean more uptime and consequently less down time. Less gear wear and less component damage should mean that any overhauls can be quicker and less expensive so that fewer resources are used. This also means cost savings.
9. The base oil in VSG is both renewable and sustainable.
10. The canola base oil in VSG is readily biodegradable.
11. The base oil in VSG (80% of the finished grease) and the grease are both manufactured in ISO 14001 environmental management standard registered facilities.

VSG is available in tubes, pails, kegs and drums. Please contact us if you require specific references or more information.

Please contact us for a complimentary comparison of VSG with your current product.

Information provided in good faith for and does not constitute a recommendation for service in any specific application. Actual performance requires proper grease application with respect to amount and frequency.