

CANADIAN ETV PROGRAM VERIFIED

Greenplus Hydraulic Fluid ES

Technology Fact Sheet for Greenland Corporation



Performance Claim

When tested for acute lethality on trout, Greenplus Hydraulic Fluid ES, manufactured by Greenland Corporation, will achieve an LC50 at least as high as 40,000 ppm when the hydraulic fluid is added to water in the test ratio and tested in accordance with Section 5 of Environment Canada's EPS1/RM/9 July 1990, as amended May 1996.

Performance Conditions

Greenplus Hydraulic Fluid ES was tested in accordance with Section 5 of Environment Canada's EPS1/RM/9 July 1990, as amended May 1996. The normal, "static" test method was judged appropriate for testing this hydraulic fluid because it more closely resembles the conditions which would result from a spill of the oil into a waterway.

The normal mixing procedures for this test procedure require only initial thorough stirring, with no further mixing within the 96 hours of the test. During this time any water-soluble elements (toxic or non-toxic) in the test substance would leach out into the water.

Technology Application

Greenplus Hydraulic Fluid ES is used in all standard and many specialty hydraulic fluid applications. It is used preferentially by environmentally responsible hydraulic equipment operators working in food processing and in environmentally sensitive locations such as watershed areas, waterways, parks and other recreational areas, as well as in general construction and other specialized applications.

Technology Description

Greenplus Hydraulic Fluid ES (Figure 1 on next page) has been developed by Greenland Corporation to provide high performance hydraulic fluid characteristics (Table 1 on next page) while minimizing the risk of damage to the environment, from leaks and spills, as well as the chemical hazard posed to equipment operators and mechanics. The manufacturing process starts with a vegetable-oil base stock and uses only additives that contain no petroleum or mineral oils and no heavy metals.

Environmental Technology Verification

Figure 1: Greenplus Hydraulic Fluid ES



Table 1: Specifications for Greenplus Hydraulic Fluid FS

Grade (ISO)	46
Specific Gravity g/cm3 @ 15°C	0.91
Kinematic Viscosity:	
40°C	42 cSt
100°C	6.1 cSt
100°F	210 SUS
210°F	56 SUS
Viscosity Index	239
Flash Point	279°C / 534°F
Pour Point	-36°C / -33°F
pH	7.0-7.2
LC50 (PPM)	> 40,000

Verification

The verification of the performance claim was carried out by J.K. Engineering, Calgary, Alberta using test data generated by Maxxam Analytics, Edmonton, Alberta.

What is the ETV Program?

The Canadian Environmental Technology Verification (ETV) Program is delivered by GLOBE Performance Solutions under a license agreement from Environment Canada. The Canadian ETV Program is designed to support Canada's environment industry by providing credible and independent verification of technology performance claims.

For more information on the Greenplus Hydraulic Fluid ES, please contact:

Greenland Corporation
7016-30 Street South East
Calgary, AB
T2C 1N9 Canada
info@greenpluslubes.com
www.greenpluslubes.com

Canadian ETV Program Contact Information:

c/o GLOBE Performance Solutions
World Trade Centre
578 - 999 Canada Place
Vancouver, B.C.
V6C 3E1 Canada
Tel: 604-695-5018
Fax: 604-695-5019
etv@globepformance.com
www.etvcanada.ca



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