Biodegradability [1]

Biodegradability is a measure of the decomposition of organic matter, including foams and water enhancers, through the action of microorganisms. Products that are more biodegradable will more easily or quickly deteriorate into smaller segments which usually do not have the same characteristics. These smaller segments may, or may not, have less impact on the environment; although it is generally assumed that less complex products have less impact.

The grading scale for biodegradability used by the Forest Service has three levels:

- A concentrate which is ≥ 60 % biodegraded within 28 days is considered to be **readily biodegradable**.
- A concentrate which is not ≥ 60 % biodegraded within 28 days but which is ≥ 60 % biodegraded by 42 days is considered to be **biodegradable**.
- A concentrate which is not ≥ 60 % biodegraded by 42 days is considered to be **not biodegradable**.

The Forest Service has used two different test methods to determine biodegradability. These methods give similar results; however, one method used a more straightforward analysis. This in turn meant that it was the test of choice at more facilities and they ran more tests using this method. The Forest Service changed to this method as results are more consistent when the test is run frequently. The results are considered to be equivalent.

Foam concentrates must be readily biodegradable or biodegradable. Water enhancer concentrates must be tested and the results reported. Retardants are not tested for biodegradability as they are primarily composed of inorganic materials.

Product Performance Data on next page

1	Standard Test Procedure 1.4 gives instructions for the biodegradability test.

Biodegradability
Water Enhancer Concentrates

Product Name (As Evaluated)	Test Method [2]	Results [1]
Barricade II [3]	301B	40.29%, Not Readily Biodegradable
Thermo-Gel 200L	301B	37.32%, Not Biodegradable
Thermo-Gel 500 P	301B	-2.75%, Not Biodegradable
Wildfire AFG Firewall II	301B	25.02%, Not Biodegradable
BioCentral Blazetamer 380	301B	35.95%, Not Biodegradable
GelTech FireIce 561	301B	1.44%, Not Biodegradable
Phos-Chek Insul-8	301B	56.64%, Not Biodegradable
EarthClean TetraKO XL-P	301B	45.88%, Not Biodegradable
FireIce HVB-Fx	301B	25.13%, Not Biodegradable

Notes:

1	Results are reported from day 42 evaluation. Values shown reflect the maximum observed degradation.
2	OPPTS 835.3110(m) is equivalent to OECD 301B; OPPTS 835.3110(o) is equivalent to OECD 301D
3	Results shown are available from Day 28 evaluation. No Day 42 results are available.