



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

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Standard Test Procedure 1.4 gives instructions for the biodegradability test.



Biodegradability Class A Foam Concentrates



Product	Test Method ²	Results ¹
Tyco Silv-Ex	301D	Readily Biodegradable
FireFoam 103B	301D	Readily Biodegradable
Phos-Chek WD 881	301D	Readily Biodegradable
FireFoam 104	301D	Readily Biodegradable
Angus ForExpan S	301D	Readily Biodegradable
Pyrocap B-136	301D	Readily Biodegradable
Phos-Chek WD 881-C	301B	Readily Biodegradable
National Foam KnockDown	301D	Readily Biodegradable
Summit FlameOut	301B	Readily Biodegradable
Angus Hi-Combat A	301B	Readily Biodegradable
Buckeye Platinum Class A	301B	Readily Biodegradable
Chemguard First Class	301B	Readily Biodegradable
Solberg Fire-Brake 3150A	301B	Readily Biodegradable
First Response	301B	Readily Biodegradable
Silv-Ex Plus	301B	Readily Biodegradable
1% Bushmaster	301B	Readily Biodegradable
Phos-Chek WD881A	301B	Readily Biodegradable
Fomtec Enviro Class A	301B	Readily Biodegradable
Bio-Ex EcoPol-F	301B	Readily Biodegradable

Notes:

1	<p>A concentrate which is $\geq 60\%$ biodegraded within 28 days is considered to be readily biodegradable.</p> <p>A concentrate which is not $\geq 60\%$ biodegraded within 28 days but which is $\geq 60\%$ biodegraded by 42 days is considered to be biodegradable.</p> <p>A concentrate which is not $\geq 60\%$ biodegraded by 42 days is considered to be not biodegradable.</p>
2	<p>OPPTS 835.3110(m) is equivalent to OECD 301B; OPPTS 835.3110(o) is equivalent to OECD 301D</p>