



## Mammalian Toxicity <sup>1</sup>



The Forest Service has adopted several standard Environmental Protection Agency (EPA) tests to assess mammalian toxicity and irritation to skin and eyes.

The product concentrate and the most concentrated mixed product, based on approved mix ratios, are tested for acute oral and acute dermal toxicity. The results of these tests are reported as an LD<sub>50</sub> value or as greater than an LD<sub>50</sub> if the product is less toxic, higher value, than is required by the specification.

**It is important to remember when comparing LD<sub>50</sub> values, that the lower the LD<sub>50</sub> value, the greater the toxicity.**

Standard EPA skin and eye irritation tests are also performed on the product concentrate and the most concentrated mixed product. The results of these tests provide information needed to specify reasonable personal protective equipment necessary when handling the product.

**When comparing values for eye or skin irritation scores, the lower the value, the lower the irritation.**

Because of individual differences, a product that has acceptable performance on these tests may still cause irritation, allergic reaction, or other sensitizations. If this occurs, the supervisor should be notified as more stringent hygiene practices or additional protective gear may be helpful. In some instances, changes in duties may be required.

Product Performance Data on next page

1	Standard Test Procedure 1.3 gives instructions for the mammalian toxicity tests.
---	--



**Mammalian Toxicity <sup>1</sup>**  
**Foam Concentrates and Solutions**



Product	Concentration	Acute Oral	Acute Dermal	Eye Irritation		Skin Irritation
	(V/V)	LD <sub>50</sub> (mg/Kg)	LD <sub>50</sub> (mg/Kg)	Non-Washed Eyes	Washed Eyes	Primary Irritation Index
FireFoam 103B	Concentrate	>5050	>2010	Moderately Irritating	Moderately Irritating	2.0
	1%	>5050	>2010	Minimally Irritating	Minimally Irritating	1.2
Phos-Chek WD881	Concentrate	4378	>2020	Moderately Irritating	Mildly Irritating	0.9
	1%	>5050	>2020	Minimally Irritating	Minimally Irritating	0.0
Pyrocap B-136	Concentrate	>5050	>2020	Moderately Irritating	Moderately Irritating	2.3
	1%	>5050	>2020	Minimally Irritating	Minimally Irritating	0.3
Phos-Chek WD881C	Concentrate	>5050	>2020	Moderately Irritating	Moderately Irritating	1.4
	1%	>5050	>2020	Minimally Irritating	Minimally Irritating	0.4
National Foam KnockDown	Concentrate	>5000	>2000	Moderately Irritating	Mildly Irritating	1.2
	1%	>5000	>2000	Minimally Irritating	Practically Non-Irritating	0.0
FlameOut	Concentrate	>5050	>5050	Moderately Irritating	Moderately Irritating	0.0
	1%	>5050	>5050	Minimally Irritating	Non-Irritating	0.0
Angus Hi-Combat A	Concentrate	>5050	>2020	Moderately Irritating	Moderately Irritating	1.0
	1%	>5050	>2000	Minimally Irritating	Practically Non-Irritating	0.2
Buckeye Platinum Class A	Concentrate	>5050	>2020	Moderately Irritating	Moderately Irritating	0.5
	1%	>5050	>2020	Practically Non-Irritating	Practically Non-Irritating	0.0
Solberg Fire-Brake 3150A	Concentrate	>5050	>2020	Moderately Irritating	Mildly Irritating	0.0
	1%	>5050	>2020	Practically Non-Irritating	Non-Irritating	0.0
First Response	Concentrate	>5050	>2020	Moderately Irritating	Moderately Irritating	0.6
	1%	>5050	>2020	Practically Non-Irritating	Minimally Irritating	0.2
Fomtec Enviro Class A	Concentrate	>5050	>2020	Moderately Irritating	Mildly Irritating	0.3
	1%	>5050	>2020	Practically Non-Irritating	Minimally Irritating	0.2

1 Standard Test Procedure 1.3, available at [http://www.fs.fed.us/rm/fire/wfcs/tests/stp-1\\_3.htm](http://www.fs.fed.us/rm/fire/wfcs/tests/stp-1_3.htm), gives information for the mammalian toxicity tests.

2 Lower values for LD<sub>50</sub> indicate greater toxicity.



**Mammalian Toxicity <sup>1</sup>**  
**Foam Concentrates and Solutions**



Product	Concentration	Acute Oral	Acute Dermal <sup>2</sup>	Eye Irritation		Skin Irritation
	(V/V)	LD <sub>50</sub> (mg/Kg)	LD <sub>50</sub> (mg/Kg)	24hr-Washed Eyes	Washed Eyes	Primary Irritation Index
Ansul Silv-Ex Plus Class A	Concentrate	>5050	>2020	Mildly Irritating	Minimally Irritating	0.0
	1%	>5050	>2020	Minimally Irritating	Practically Non-Irritating	0.0
1% Bushmaster "A" Class Foam	Concentrate	>5050	>2020	Severely Irritating	Moderately Irritating	0.5
	1%	>5050	>2020	Minimally Irritating	Practically Non-Irritating	0.1
Phos-Chek WD881A	Concentrate	>5050	>2020	Moderately Irritating	Mildly Irritating	1.8
	1%	>5050	>2020	Practically Non-Irritating	Practically Non-Irritating	0.0
Bio-Ex EcoPol-F	Concentrate	>5050	>2020	Mildly Irritating	NA <sup>3</sup>	0.0
	1%	>5050	>2020	Practically Non-Irritating	NA <sup>3</sup>	0.0
Spark Barrier	Concentrate	>5000	>2020	Severely Irritating	NA <sup>3</sup>	0.8
	1%	>5000	>2020	Minimally Irritating	NA <sup>3</sup>	0.1
1	Standard Test Procedure 1.3, available at <a href="http://www.fs.fed.us/rm/fire/wfcs/tests/stp-1_3.htm">http://www.fs.fed.us/rm/fire/wfcs/tests/stp-1_3.htm</a> , gives information for the mammalian toxicity tests.					
2	Lower values for LD <sub>50</sub> indicate greater toxicity.					
3	Changes to standard EPA method reporting at contract lab have removed the evaluation of non-washed eyes to conform to the base method; revised December 14, 2017.					