

Proposed Item for Biobased Designation

The following biobased product information has been collected to support item designation by USDA for the BioPreferred Program. This summary reflects data available as of November 30, 2007.

Title: Floor Cleaners and Protectors

Description: Cleaning solutions for either direct application or use in scrubbers for wood, vinyl, tile, or similar hard surface floors. Products within this item are marketed specifically for use on industrial, commercial, and/or residential flooring.

Companies Supplying Item: 25 companies supplying Floor Cleaners and Protectors have been identified through internet searches, manufacturer's directories, trade associations, and company submissions.

Industry Associations Investigated: The following industry associations have been investigated for member companies supplying Floor Cleaners and Protectors:

- United Soybean Board
- North Dakota Soybean Council
- National Association of Floor Covering Distributors
- Association of Specialists in Cleaning and Restoration
- Tri-State Restorers & Specialty Cleaners Association
- World Floor Covering Association

Commercially Available Products Identified: Of the companies identified, 39 Floor Cleaners and Protectors are commercially available on the market.

Product Information Collected: Specific product information including company contact, intended use, biobased content, and performance characteristics have been collected on 14 Floor Cleaners and Protectors.

Industry Performance Standards: Product information submitted by biobased manufacturers and suppliers indicate that have typically been tested to the following industry standards:

- ASTM International D4488 Standard Guide for Testing Cleaning Performance of Products Intended for Use on Resilient Flooring and Washable Walls
- ASTM International D5343 Standard Guide for Evaluating Cleaning Performance of Ceramic Tile Cleaners

Samples Tested for Biobased Content: 6 samples of Floor Cleaners and Protectors have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

Biobased Content Data: Results from biobased content testing of Floor Cleaners and Protectors indicate a range of content percentages from 40% minimum to 99% maximum biobased content as

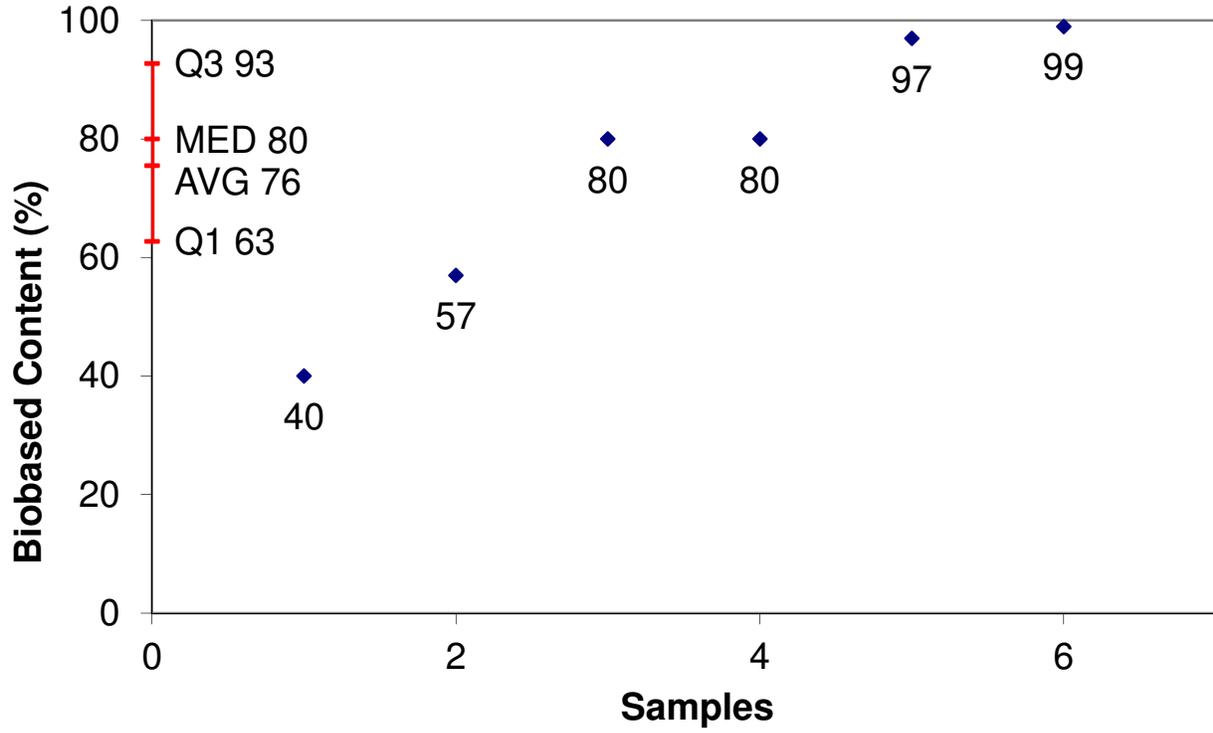
defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 2 Floor Cleaners and Protectors have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Floor Cleaners and Protectors range from 28.00 minimum to 94.95 maximum per usage unit. The environmental scores range from 0.0121 minimum to 0.0609 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Floor Cleaners and Protectors

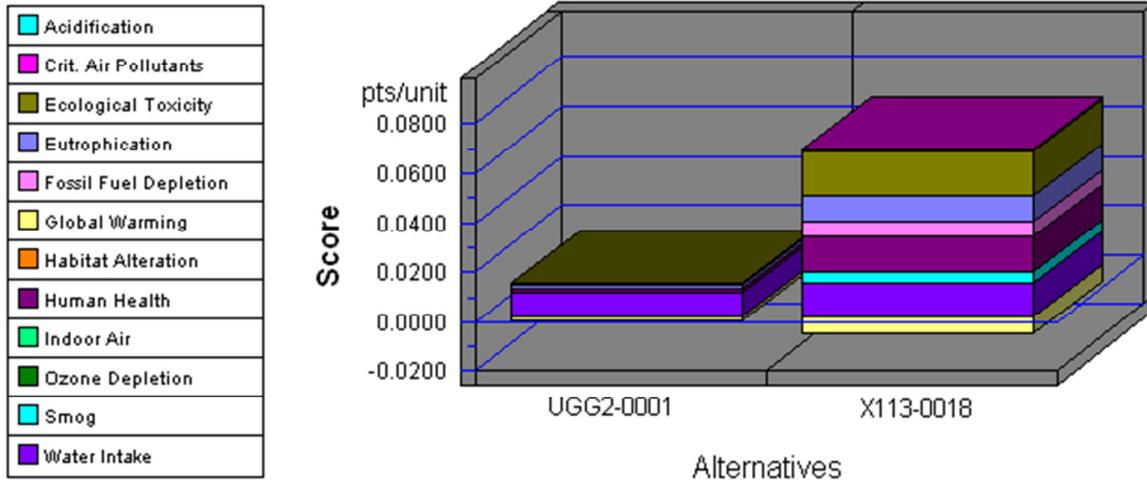


	Company	Product	C14	BEES
1	YJ3R	YJ3R-0014	40	
2	K4U8	K4U8-0006	57	
3	Y8EG	Y8EG-0013	80	
4	X4H4	X4H4-0001	80	
5	X113	X113-0018	97	Yes
6	UGG2	UGG2-0001	99	Yes

Appendix B - BEES Analysis Results

Functional Unit: 100 gallons, as used

Environmental Performance



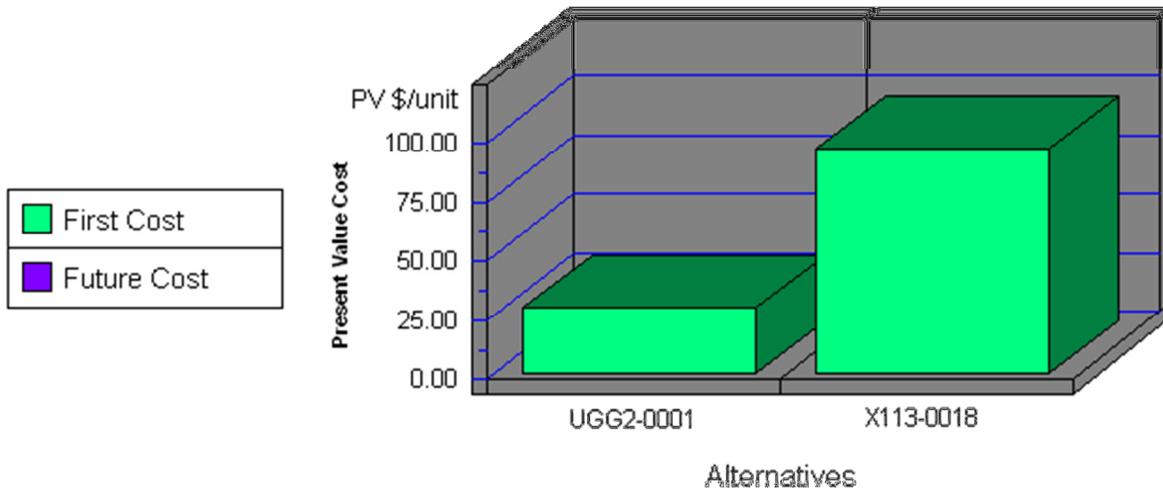
Note: Lower values are better

Category	UGG2-0001	X113-0018
Acidification--3%	0.0000	0.0000
Crit. Air Pollutants--9%	0.0001	0.0013
Ecolog. Toxicity--7%	0.0006	0.0178
Eutrophication--5%	0.0014	0.0109
Fossil Fuel Depl.--10%	0.0004	0.0058
Global Warming--29%	-0.0013	-0.0070
Habitat Alteration--6%	0.0000	0.0000
Human Health--13%	0.0011	0.0140
Indoor Air--3%	0.0000	0.0000
Ozone Depletion--2%	0.0000	0.0000
Smog--4%	0.0003	0.0043
Water Intake--8%	0.0095	0.0138
Sum	0.0121	0.0609

Floor Cleaners and Protectors			
Impacts	Units	UGG2-0001	X113-0018
Acidification	millimoles H ⁺ equivalents	5.28E+02	8.69E+03
Criteria Air Polutants	microDALYs	1.50E-01	2.86E+00
Ecotoxicity	g 2,4-D equivalents	7.19E+00	2.08E+02
Eutrophication	g N equivalents	4.42E+00	3.51E+01
Fossil Fuel Depletion	MJ surplus energy	1.40E+00	2.06E+01
Global Warming	g CO ₂ equivalents	-1.17E+03	-6.18E+03
Habitat Alteration	T&E count	0.00E+00	0.00E+00
Human Health--Cancer	g C ₆ H ₆ equivalents	7.09E-01	8.94E+00
Human Health--NonCancer	g C ₇ H ₈ equivalents	1.18E+03	8.70E+03
Indoor Air Quality	g TVOCs	0.00E+00	0.00E+00
Ozone Depletion	g CFC-11 equivalents	5.95E-06	4.05E-04
Smog	g NO _x equivalents	1.08E+01	1.63E+02
Water Intake	liters of water	6.30E+02	9.13E+02
Functional Unit	-----	100 gallons of floor cleaner, as used	

1 Following are more complete descriptions of units: Acidification: millimoles of hydrogen ion equivalents; Criteria Air Pollutants: micro Disability-Adjusted Life Years; Ecological Toxicity: grams of 2,4-dichlorophenoxy-acetic acid equivalents; Eutrophication: grams of nitrogen equivalents; Fossil Fuel Depletion: megajoules of surplus energy; Global Warming: grams of carbon dioxide equivalents; Habitat Alteration: threatened and endangered species count; Human Health-Cancer: grams of benzene equivalents; Human Health-NonCancer: grams of toluene equivalents; Indoor Air Quality: grams of Total Volatile Organic Compounds; Ozone Depletion: grams of chloroflourocarbon-11 equivalents; Smog: grams of nitrogen oxide equivalents; and Water Intake: liters of water.

Economic Performance

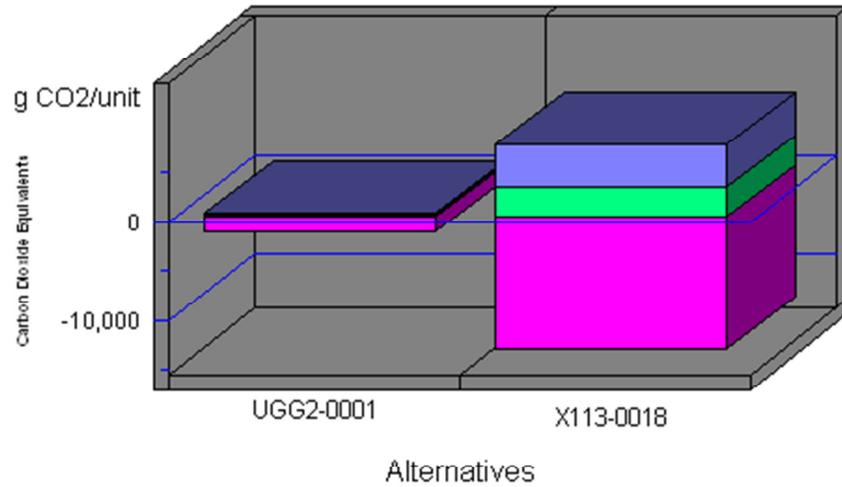


Category	Alternatives	
	UGG2-0001	X113-0018
First Cost	28.00	94.95
Future Cost-- 3.0%	0.00	0.00
Sum	28.00	94.95

**No significant/quantifiable performance differences were identified among competing alternatives. Therefore, future costs were not calculated.*

Global Warming by Flow

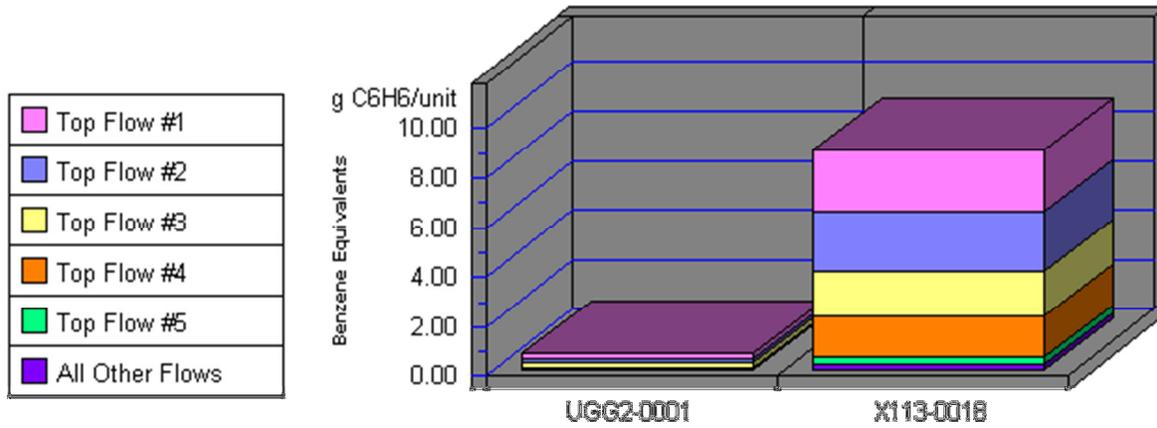
Carbon Dioxide
Carbon Tetrachloride
Carbon Tetrafluoride
CFC 12
Chloroform
Halon 1301
HCFC 22
Methane
Methyl Bromide
Methyl Chloride
Methylene Chloride
Nitrous Oxide
Trichloroethane



Note: Lower values are better

Category	UGG2-0001	X113-0018
(a) Carbon Dioxide (CO ₂ , net)	-1507	-13522
(a) Carbon Tetrachloride (CCl ₄)	0	0
(a) Carbon Tetrafluoride (CF ₄)	0	0
(a) CFC 12 (CCl ₂ F ₂)	0	0
(a) Chloroform (CHCl ₃ , HC-20)	0	0
(a) Halon 1301 (CF ₃ Br)	0	0
(a) HCFC 22 (CHF ₂ Cl)	0	0
(a) Methane (CH ₄)	146	4490
(a) Methyl Bromide (CH ₃ Br)	0	0
(a) Methyl Chloride (CH ₃ Cl)	0	0
(a) Methylene Chloride (CH ₂ Cl ₂)	0	0
(a) Nitrous Oxide (N ₂ O)	195	2052
(a) Trichloroethane (1,1,1-CH ₃ CCl ₃)	0	0
Sum	-1166	-6180

Human Health Cancer by Sorted Flows*



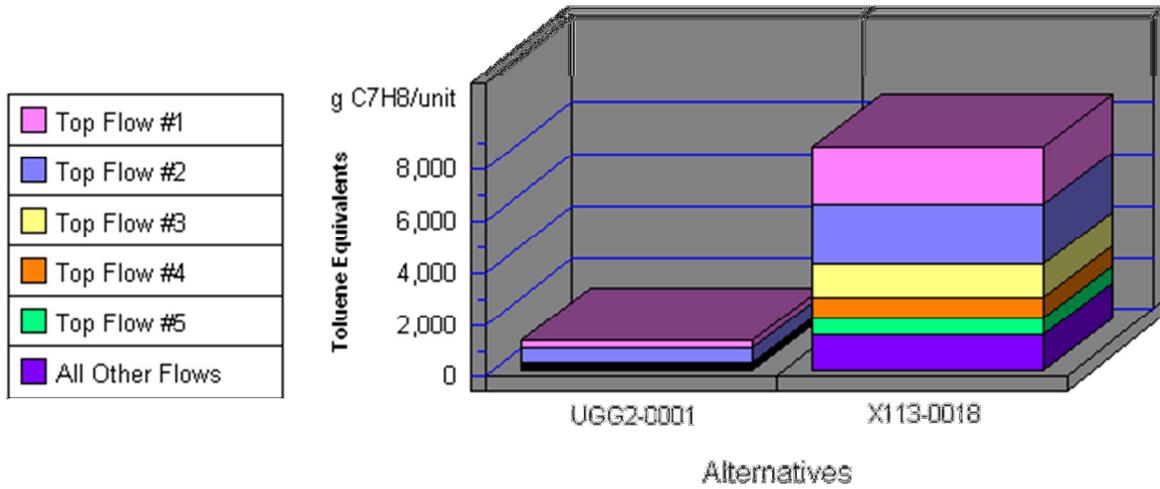
Alternatives

Note: Lower values are better

Category	UGG2-0001	X113-0018
Cancer--(w) Arsenic (As3+, As5+)	0.25	2.54
Cancer--(w) Phenol (C6H5OH)	0.15	2.34
Cancer--(a) Dioxins (unspecifie)	0.22	1.81
Cancer--(a) Arsenic (As)	0.05	1.69
Cancer--(a) Bromoxynil (C7H3Br2)	0.00	0.30
All Others	0.04	0.25
Sum	0.71	8.94

*Sorted by five topmost flows for worst-scoring product

Human Health Noncancer by Sorted Flows*



Note: Lower values are better

Category	UGG2-0001	X113-0018
Noncancer--(a) Dioxine (unspeci)	274.25	2,285.50
Noncancer--(a) Mercury (Hg)	558.52	2,248.63
Noncancer--(w) Barium (Ba++)	97.47	1,315.77
Noncancer--(a) Lead (Pb)	71.23	831.14
Noncancer--(w) Lead (Pb++, Pb4+)	49.55	622.17
All Others	125.61	1,389.06
Sum	1,176.63	8,696.27

*Sorted by five topmost flows for worst-scoring product