

**TECHNICAL SUPPORT DOCUMENT FOR
PROPOSED RULE - ROUND 6 DESIGNATED ITEMS**

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Office of Procurement and Property Management
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CHAPTER 1.0

ITEM DESIGNATIONS

For each item, USDA conducts an industry investigation of products within the item. The results of this investigation are presented in "item designation" reports. These reports cover the following information:

- A description of the item;
- The number of manufacturers producing biobased products within the item;
- The industry associations investigated in identifying the manufacturers of biobased products within the item;
- The number of commercially available biobased products within the item;
- The type of product information collected;
- The industry performance standards identified;
- The number of samples of biobased products within the item tested for biobased content;
- The biobased content data results;
- The products submitted for BEES testing; and
- The results of the BEES analysis.

The industry investigation reports for Round 6 items are presented in the remainder of this chapter. Additional

information is found in Chapter 2 (product descriptions) and Chapter 3 (test methods and performance standards).

Building for Environmental and Economic Sustainability (BEES) Analytical Tool

In considering the life-cycle costs of items proposed for designation, USDA uses the Building for Environmental and Economic Sustainability (BEES) analytical tool to test individual products within each proposed item. (Detailed information on this analytical tool can be found on the Web site <http://www.bfrel.nist.gov/oae/software/bees.html>.) One of the items measured by the BEES analytical tool is environmental performance.

Environmental performance is measured in the BEES analytical tool using the internationally-standardized and science-based life-cycle assessment approach specified in the International Organisation for Standardization (ISO) 14000 standards. The BEES environmental performance analysis, which includes human health as one of its components, is a "cradle-to-grave" assessment of a product. In it, all stages in the life of a product are analyzed: Raw material production; manufacture; transportation; installation; use; and recycling and waste management. The time period over which environmental performance is measured begins with raw material production and ends with

disposal (waste management). The BEES environmental performance analysis also addresses products made from biobased feedstocks.

The environmental performance results are reported as both an impact value and as an environmental performance score for twelve different environmental impact parameters:

- Acidification,
- Criteria pollutants,
- Ecological toxicity,
- Eutrophication,
- Fossil fuel depletion,
- Global warming,
- Habitat alteration,
- Human health,
- Indoor air quality,
- Ozone depletion,
- Smog, and
- Water intake.

The environmental performance scores of a product within each of the twelve environmental impact parameters are determined using the impact values. For each environmental impact parameter, BEES estimates the impact a product has on a parameter using certain units to standardize impacts. For example, acidification is measured as "millimoles of hydrogen equivalents," while eutrophication is measured as "grams of nitrogen equivalents." BEES, thus, for example, estimates how many millimoles of hydrogen equivalents and how many grams of

nitrogen equivalents a product generates as the result of its production and use. These values are referred to as "impact values" and are calculated on a per functional unit basis. For example, the impact value for acidification for a disposable tableware product was estimated to be 25.9 millimoles of hydrogen ion equivalents for one disposable plate (the functional unit). The impact values used in the BEES analytical tool for each of the Round 6 items are presented in this chapter.

The environmental performance score is a measure of the share a product contributes towards the annual per capita U.S. environmental impact in one of the twelve environmental impact areas. For example, the global warming impact value of a heat transfer fluid product was estimated to be 13,036 grams of carbon dioxide equivalents. The total amount of carbon dioxide equivalents emitted in the United States in one year is divided by the U.S. population to yield a "global warming per person" value. The product's global warming impact value is then divided by the "global warming per person" value to derive the product's share of global warming. Specifically, for this example, the global warming environmental performance score is estimated to be 0.0148. That is, every one gallon of this heat transfer fluid is estimated to contribute 0.0148

percent to the global warming per person value.

In reporting the environmental performance scores and impact values, the BEES analysis uses a single unit of comparison associated with each designated item. The basis for the unit of comparison is the "functional unit," defined so that the products compared within an item are true substitutes for one another. If significant differences have been identified in the useful lives of alternative products within a designated item (e.g., if one product lasts twice as long as another), the functional unit includes reference to a time dimension to account for the frequency of product replacement. The functional unit also accounts for products used in different amounts for equivalent service. For example, one surface coating product may be environmentally and economically preferable to another on a pound-for-pound basis, but may require twice the mass to cover one square foot of surface, and last half as long, as the other product. To account for these performance differences, the functional unit for the surface coating item could be "one square foot of application for 20 years" instead of "one pound of surface coating product." The functional unit provides the critical reference point to which all BEES results for products within an item are scaled. Because functional

units vary from item to item, performance comparisons are valid only among products within a designated item.

The following tables and graphs present the environmental performance scores and impact values for products within the Round 6 designated items that were analyzed using the BEES analytical tool.

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 May 18, 2007.

Title: Disposable Tableware

Description: One-time-use drinkware and dishware including cups, plates, bowls, and serving platters used for dining.

Manufacturers Identified: 19 manufacturers producing Disposable Tableware 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 producing Disposable Tableware:

- Biobased Manufacturers Association
- United Soybean Board
- The National Restaurant Association
- Green Restaurant Association
- National Corn Growers Association
- American Soybean Association
- The National Association of College and University Food Services
- Corn Refiners Association

Commercially Available Products Identified: Of the manufacturers identified, 65 Disposable Tableware 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 4 Disposable Tableware.

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

- Biodegradable Products Institute Certified Compostable plastic products will biodegrade and compost satisfactorily in actively managed compost facilities
- Waste Management
- ASTM International D6400 Standard specification for compostable plastics
- ASTM International D6868 standard specification for biodegradable plastics used as coatings on paper and other compostable substrates

Samples Tested for Biobased Content: 11 samples of Disposable Tableware have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

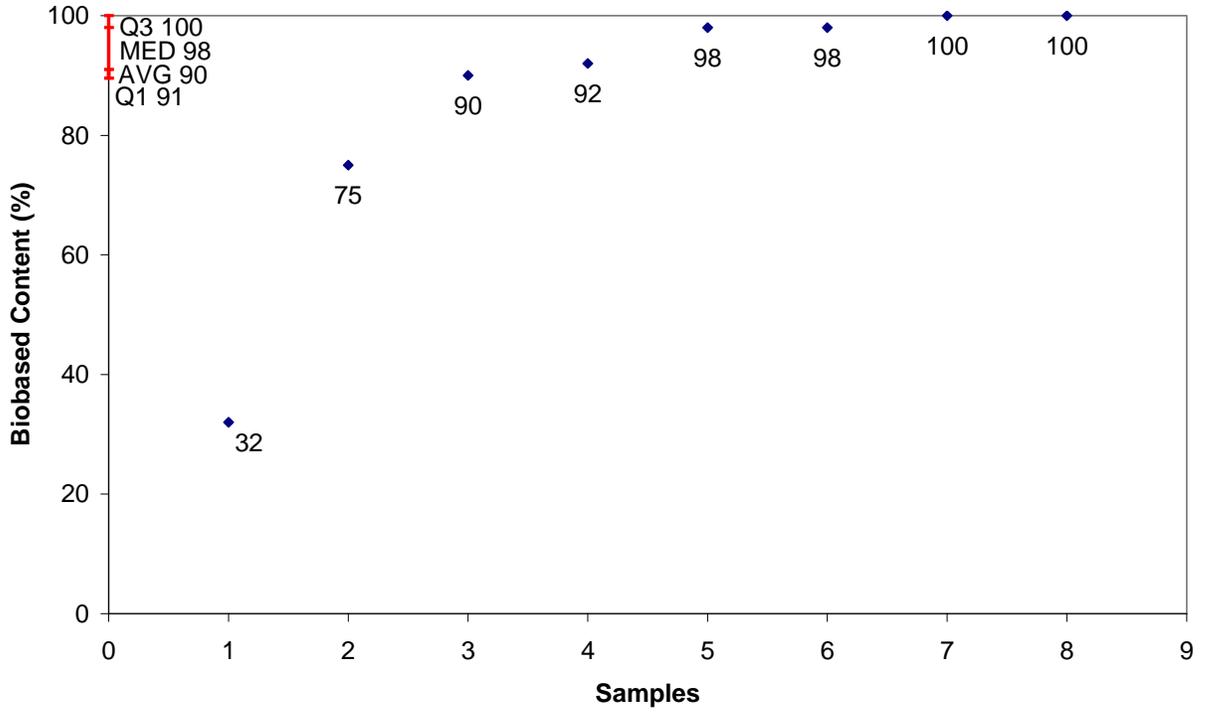
Biobased Content Data: Results from biobased content testing of Disposable Tableware indicate a range of content percentages from 32% minimum to 100% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 1 Disposable Tableware have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Disposable Tableware range from \$0.05 minimum to \$0.05 maximum per usage unit. The environmental scores range from 0.0003 minimum to 0.003 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

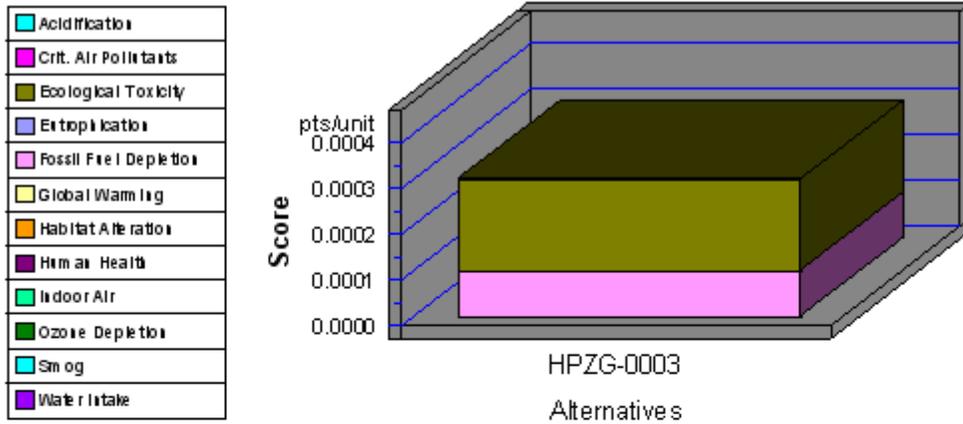
Disposable Tableware



	Manufacturers Identified	Products Identified	C14	BEES
1	OLX2	OLX2-0017	32	
2	HPZG	HPZG-0003	75	Yes
3	PXO9	PXO9-0001	90	
4	PXO9	PXO9-0005	92	
5	OLX2	OLX2-0001	98	
6	IF3W	IF3W-0006	98	
7	XPR6	XPR6-0006	100	
8	D3P3	D3P3-0030	100	
9	D3P3	D3P3-0026	100	
10	V865	V865-0023	100	
11	V865	V865-0022	100	

Appendix B - BEES Analysis Results
Functional Unit: 1 disposable plate

Environmental Performance

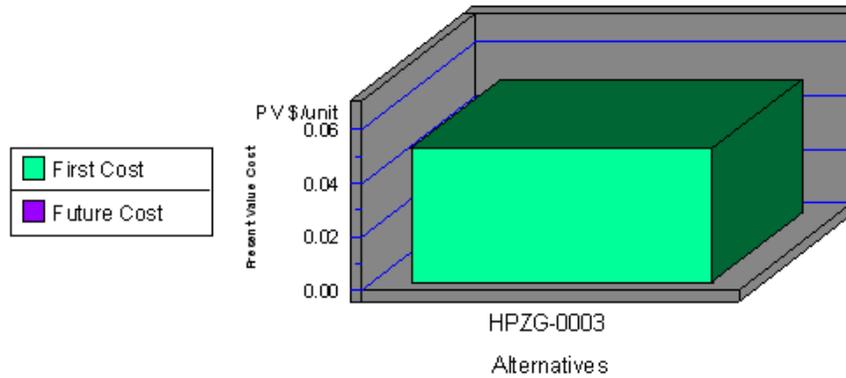


Note: Lower values are better

Category	HPZG-0003
Acidification-5%	0.0000
Crit. Air Pollutants-6%	0.0000
Ecolog. Toxicity-11%	0.0002
Eutrophication-5%	0.0000
Fossil Fuel Depl.-5%	0.0001
Global Warming-16%	0.0000
Habitat Alteration-16%	0.0000
Human Health-11%	0.0000
Indoor Air-11%	0.0000
Ozone Depletion-5%	0.0000
Smog-6%	0.0000
Water Intake-3%	0.0000
Sum	0.0003

Appendix B (continued)

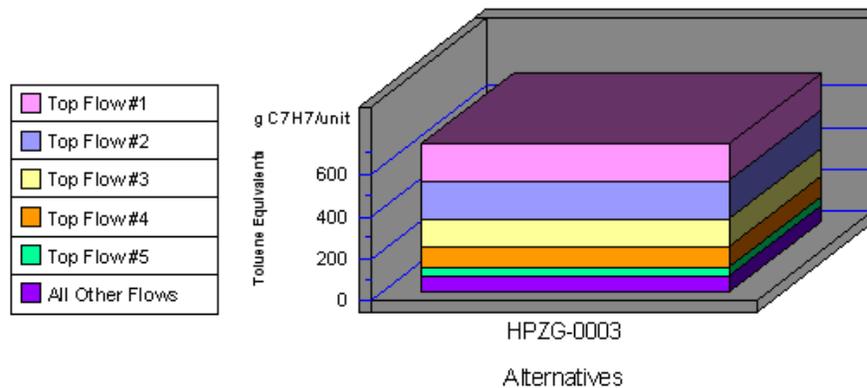
Economic Performance



Category	HPZG-0003
First Cost	0.05
Future Cost-- 3.9%	0.00
Sum	0.05

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

Human Health by Sorted Flows*



Note: Lower values are better

Category	HPZG-0003
Cancer--(a) Dioxins (unspecific)	177.68
Cancer--(a) Arsenic (As)	174.87
Cancer--(w) Phenol (C6H5OH)	132.30
Cancer--(w) Arsenic (As3+, As5+)	100.16
Cancer--(a) Atrazine (C8H14ClN5)	42.20
All Others	76.17
Sum	703.38

*Sorted by five topmost flows for worst-scoring product

Appendix B (continued)

Disposable Tableware		
Impacts	Units¹	HPZG-0003
Acidification	millimoles H ⁺ equivalents	2.59E+01
Criteria Air Pollutants	microDALYs	7.16E-03
Ecological Toxicity	g 2,4-D equivalents	1.24E+00
Eutrophication	g N equivalents	4.73E-02
Fossil Fuel Depletion	MJ surplus energy	8.07E-01
Global Warming	g CO ₂ equivalents	5.31E+01
Habitat Alteration	T&E count	0.00E+00
Human Health	g C ₇ H ₈ equivalents	7.03E+02
Indoor Air Quality	g TVOCs	0.00E+00
Ozone Depletion	g CFC-11 equivalents	1.93E-07
Smog	g NO _x equivalents	3.17E-01
Water Intake	liters of water	1.84E+00
Functional Unit	-----	1 disposable plate

¹Following 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: 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.

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 February 11, 2010.

Title: Expanded Polystyrene Foam Recyclers

Description: Products used to convert expanded polystyrene foam into recycled plastic for reuse as alternative products. These products can be used to reclaim and reduce discarded materials in landfills and waste disposal systems.

Manufacturers Identified: 2 manufacturers producing Expanded Polystyrene Foam Recyclers 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 producing Expanded Polystyrene Foam Recyclers:

- Biobased Manufacturers Association
- United Soybean Board
- Alliance of Foam Packaging Recyclers
- Association of Foam Packaging Recyclers
- American Chemistry Council
- Association of Postconsumer Plastic Recyclers
- EPS Molders Association
- Institute of Scrap Recycling Industries, Inc.
- Plastic Molders and Manufacturers Association
- The Society of the Plastics Industry, Inc.

Commercially Available Products Identified: Of the manufacturers identified, 2 Expanded Polystyrene Foam Recyclers 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 2 Expanded Polystyrene Foam Recyclers.

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

- None Reported

Samples Tested for Biobased Content: 1 samples of Expanded Polystyrene Foam Recyclers have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

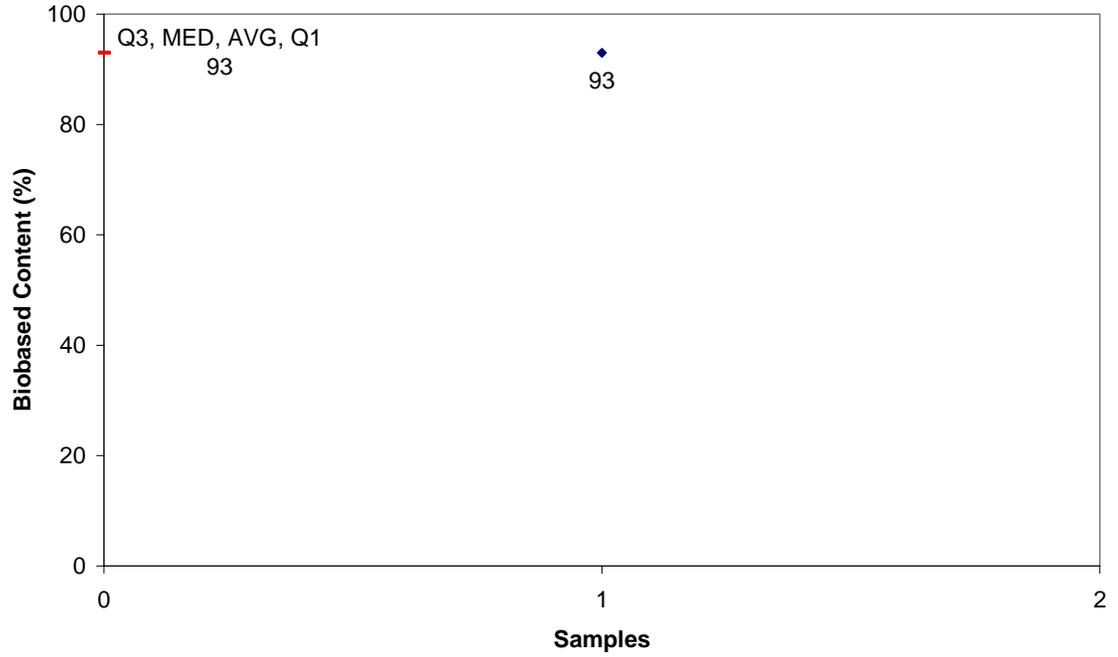
Biobased Content Data: Results from biobased content testing of Expanded Polystyrene Foam Recyclers indicate a range of content percentages from 93% minimum to 93% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 1 Expanded Polystyrene Foam Recyclers have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Expanded Polystyrene Foam Recyclers range from \$53.13 minimum to \$53.13 maximum per usage unit. The environmental scores range from 0.1400 minimum to 0.1400 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Expanded Polystyrene Foam Recyclers



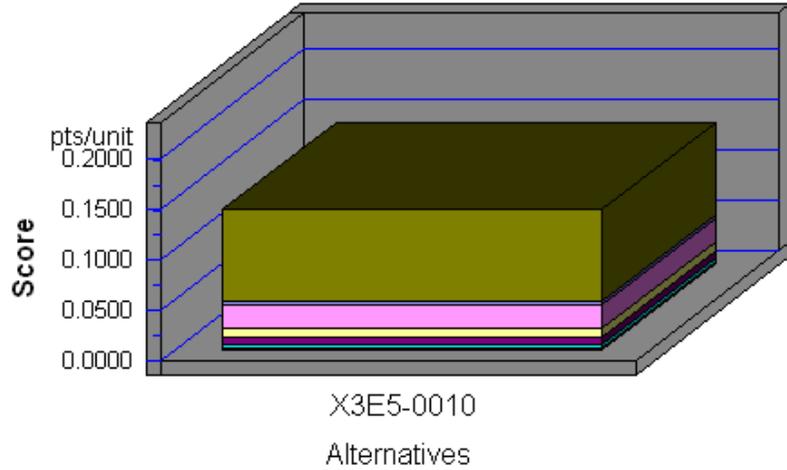
	Manufacturers Identified	Products Identified	C14	BEES
1	X3E5	X3E5-0010	93	yes

Appendix B - BEES Analysis Results

Functional Unit: Transforming 10 cubic yards of polystyrene foam waste into feedstock for new product

Environmental Performance

■ Acidification
■ Crit. Air Pollutants
■ Ecological Toxicity
■ Eutrophication
■ Fossil Fuel Depletion
■ Global Warming
■ Habitat Alteration
■ Human Health
■ Indoor Air
■ Ozone Depletion
■ Smog
■ Water Intake

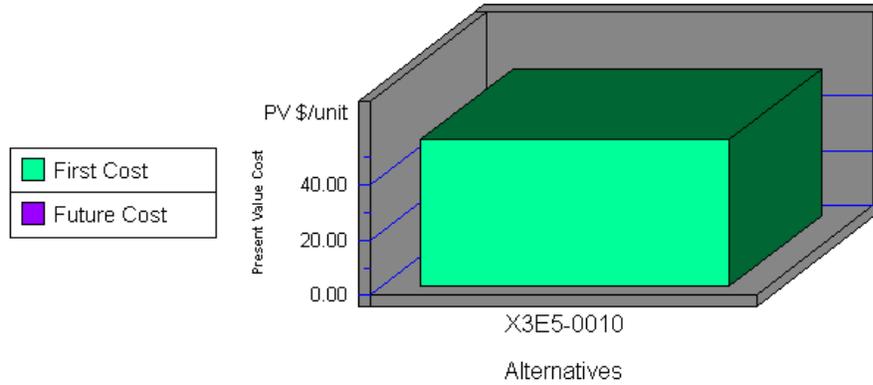


Note: Lower values are better

Category	X3E5-0010
Acidification--5%	0.0000
Crit. Air Pollutants--6%	0.0004
Ecolog. Toxicity--11%	0.0908
Eutrophication--5%	0.0027
Fossil Fuel Depl.--5%	0.0246
Global Warming--16%	0.0083
Habitat Alteration--16%	0.0000
Human Health--11%	0.0075
Indoor Air--11%	0.0000
Ozone Depletion--5%	0.0000
Smog--6%	0.0033
Water Intake--3%	0.0024
Sum	0.1400

Appendix B (continued)

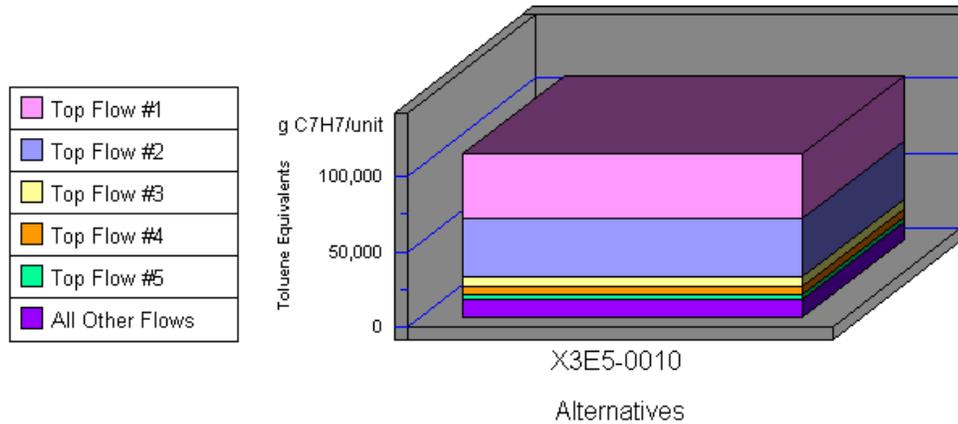
Economic Performance



Category	X3E5-0010
First Cost	53.13
Future Cost-- 3.9%	0.00
Sum	53.13

*No significant/quantifiable durability differences are expected among competing alternatives. Therefore, future costs were not calculated.

Human Health by Sorted Flows*



Note: Lower values are better

Category	X3E5-0010
Cancer--(w) Arsenic (As3+, As5+)	43,198.22
Cancer--(w) Phenol (C6H5OH)	38,165.68
Cancer--(a) Dioxins (unspecifie)	6,816.09
Cancer--(a) Arsenic (As)	4,886.56
Cancer--(a) Simazine	3,924.60
All Others	12,005.11
Sum	108,796.27

*Sorted by five topmost flows for worst-scoring product

Appendix B (continued)

Polystyrene Foam Recyclers		
Impacts	Units	X3E5-0010
Acidification	millimoles H ⁺ equivalents	3.93E+03
Criteria Air Pollutants	microDALYs	1.24E+00
Ecological Toxicity	g 2,4-D equivalents	6.74E+02
Eutrophication	g N equivalents	1.03E+01
Fossil Fuel Depletion	MJ surplus energy	1.74E+02
Global Warming	g CO ₂ equivalents	1.32E+04
Habitat Alteration	T&E count	0.00E+00
Human Health	g C ₇ H ₈ equivalents	1.09E+05
Indoor Air Quality	g TVOCs	0.00E+00
Ozone Depletion	g CFC-11 equivalents	2.52E-04
Smog	g NO _x equivalents	8.36E+01
Water Intake	liters of water	4.18E+02
Functional Unit	-----	Transforming 10 cubic yards of polystyrene foam waste into feedstock for new product

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: 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.

Appendix B (continued)

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 September 15, 2008.

Title: Heat Transfer Fluids

Description: Fluids with high thermal capacities that facilitate the transfer of heat from one location to another. Includes coolants or refrigerants for use in HVAC applications, internal combustion engines, personal cooling devices, thermal energy storage, or other heating or cooling closed-loops.

Companies Supplying Item: 5 companies supplying Heat Transfer Fluids 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 Heat Transfer Fluids:

- United Soybean Board Association
- National Corn Growers Association
- Antifreeze Recyclers Association of America
- The Antifreeze Coalition
- Automotive Aftermarket Industry Association
- Air Conditioning Contractors of America

Commercially Available Products Identified: Of the companies identified, 6 Heat Transfer Fluids 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 4 Heat Transfer Fluids.

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

- No Results

Samples Tested for Biobased Content: 3 samples of Heat Transfer Fluids have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

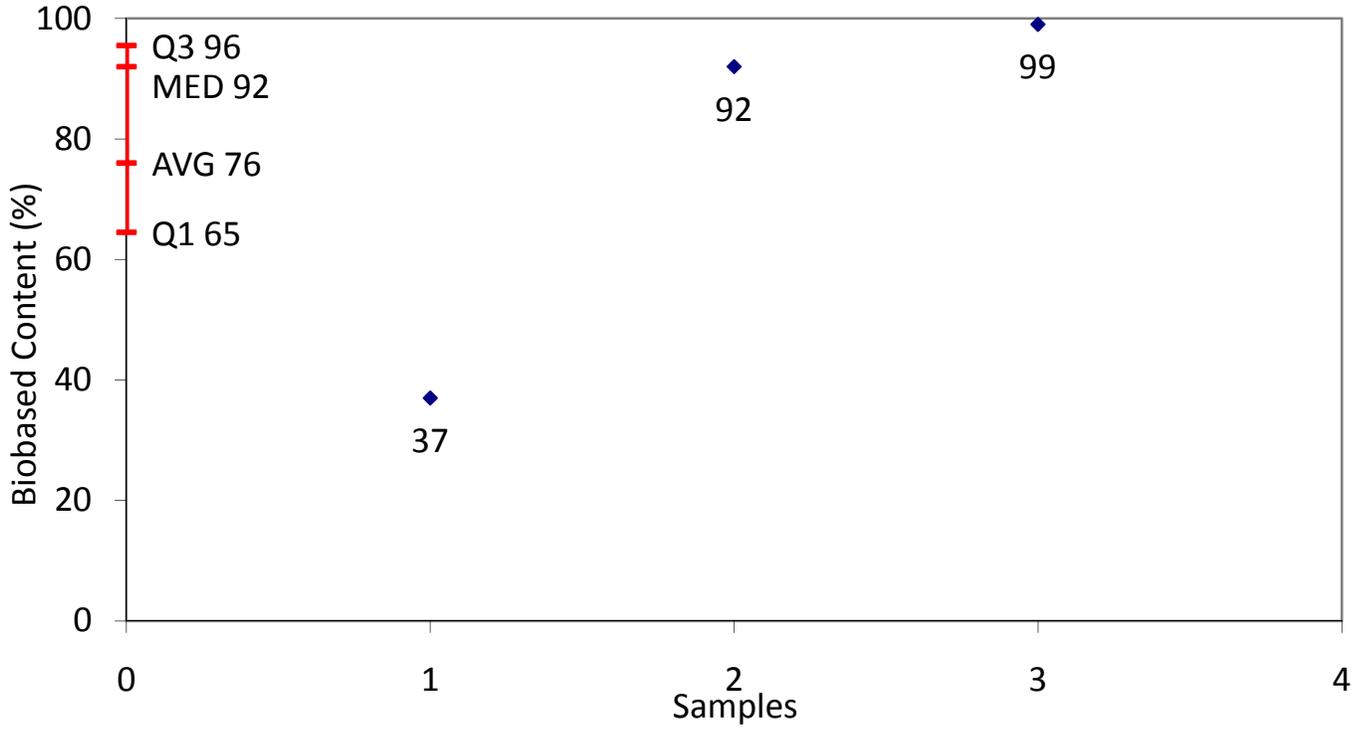
Biobased Content Data: Results from biobased content testing of Heat Transfer Fluids indicate a range of content percentages from 37% minimum to 99% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 2 Heat Transfer Fluids have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Heat Transfer Fluids range from \$19.00 minimum to \$21.99 maximum per usage unit. The environmental scores range from 0.0143 minimum to 0.0643 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Heat Transfer Fluids

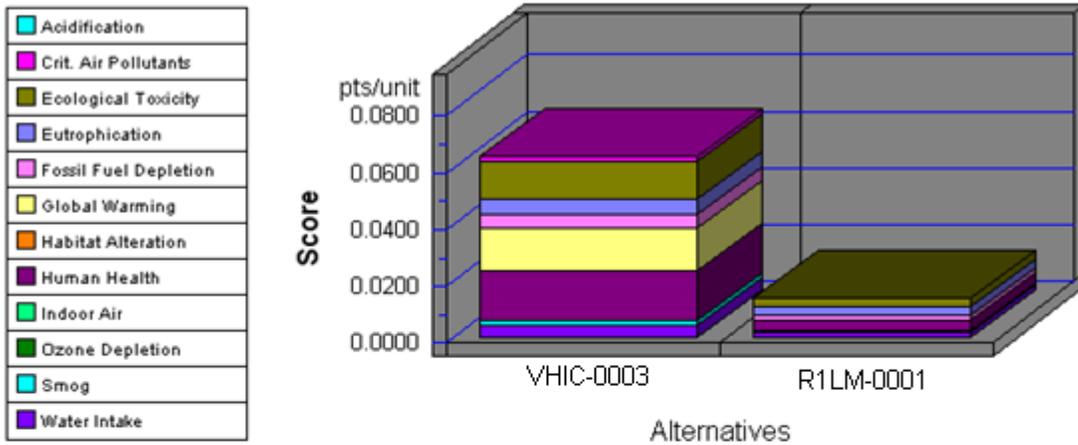


	Company	Product	C14	BEES
1	VHIC	VHIC-0002	37	
2	R1LM	R1LM-0001	92	Yes
3	VHIC	VHIC-0003	99	Yes

Appendix B - BEES Analysis Results

Functional Unit: 1 gallon of product

Environmental Performance

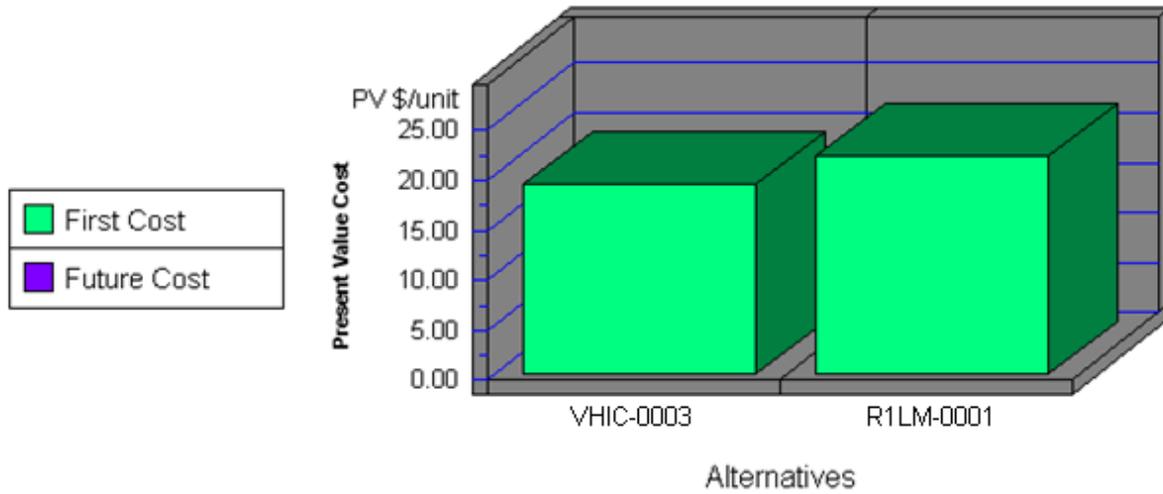


Note: Lower values are better

Category	VHIC-0003	R1LM-0001
Acidification--3%	0.0000	0.0000
Crit. Air Pollutants--9%	0.0022	0.0002
Ecolog. Toxicity--7%	0.0131	0.0031
Eutrophication--6%	0.0051	0.0029
Fossil Fuel Depl.--10%	0.0054	0.0019
Global Warming--29%	0.0148	0.0001
Habitat Alteration--6%	0.0000	0.0000
Human Health--13%	0.0175	0.0033
Indoor Air--3%	0.0000	0.0000
Ozone Depletion--2%	0.0000	0.0000
Smog--4%	0.0019	0.0006
Water Intake--8%	0.0043	0.0022
Sum	0.0643	0.0143

Heat Transfer Fluids			
Impacts	Units	VHIC-0003	R1LM-0001
Acidification	millimoles H ⁺ equivalents	1.27E+04	1.44E+03
Criteria Air Pollutants	microDALYs	4.61E+00	3.41E-01
Ecotoxicity	g 2,4-D equivalents	1.53E+02	3.65E+01
Eutrophication	g N equivalents	1.63E+01	9.19E+00
Fossil Fuel Depletion	MJ surplus energy	1.91E+01	6.69E+00
Global Warming	g CO ₂ equivalents	1.30E+04	5.59E+01
Habitat Alteration	T&E count	0.00E+00	0.00E+00
Human Health--Cancer	g C ₆ H ₆ equivalents	1.10E+01	2.09E+00
Human Health--NonCancer	g C ₇ H ₈ equivalents	2.28E+04	2.08E+03
Indoor Air Quality	g TVOCs	0.00E+00	0.00E+00
Ozone Depletion	g CFC-11 equivalents	1.46E-05	2.62E-06
Smog	g NO _x equivalents	7.21E+01	2.11E+01
Water Intake	liters of water	2.82E+02	1.49E+02
Functional Unit	-----	1 gallon of product	
<p>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.</p>			

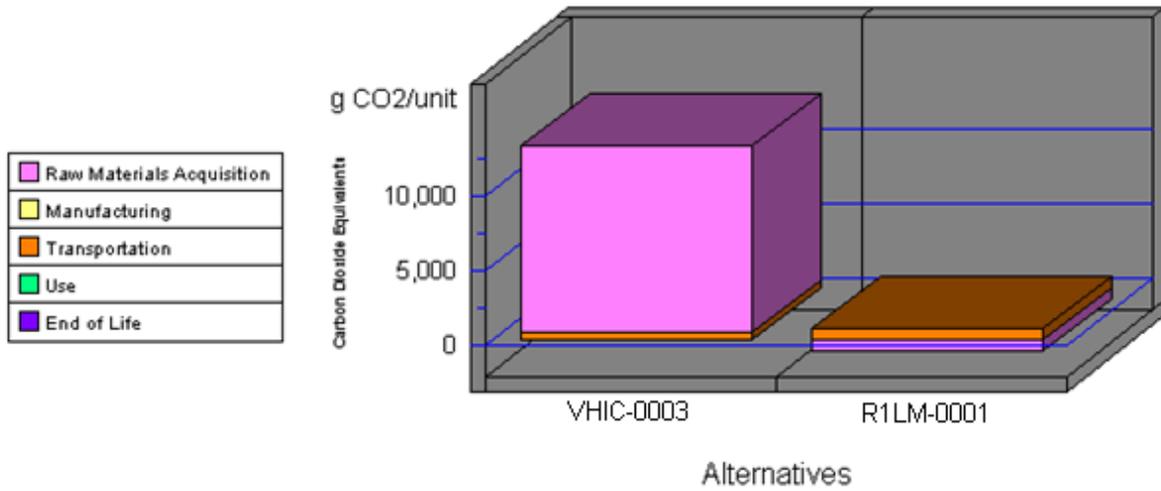
Economic Performance



Category	VHIC-0003	R1LM-0001
First Cost	19.00	21.99
Future Cost-- 3.0%	0.00	0.00
Sum	19.00	21.99

*This is a consumable product. Therefore, future costs are not calculated.

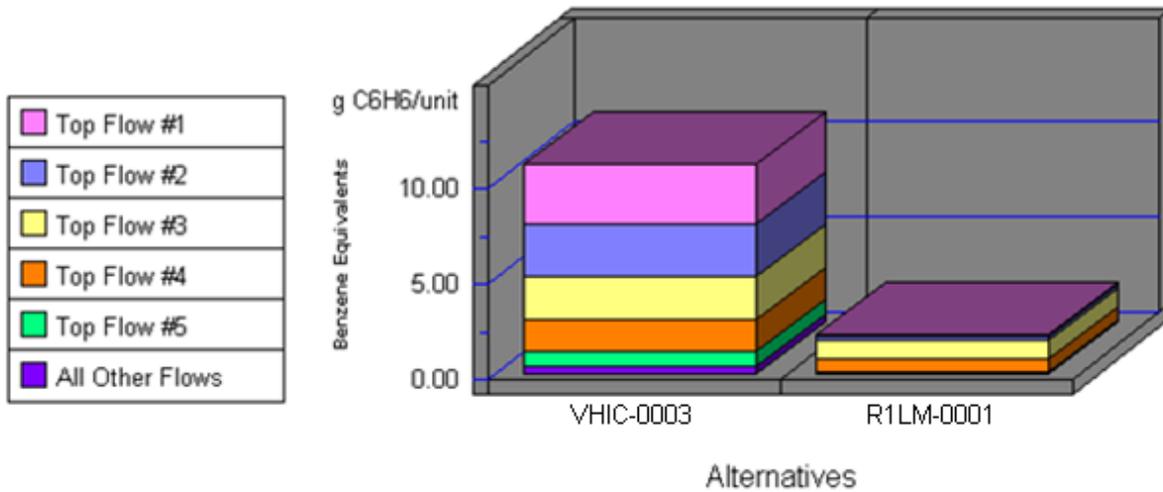
Global Warming by Life-Cycle Stage



Note: Lower values are better

Category	VHIC-0003	R1LM-0001
1. Raw Materials	12436	-751
2. Manufacturing	12	2
3. Transportation	588	805
4. Use	0	0
5. End of Life	0	0
Sum	13036	56

Human Health Cancer by Sorted Flows*

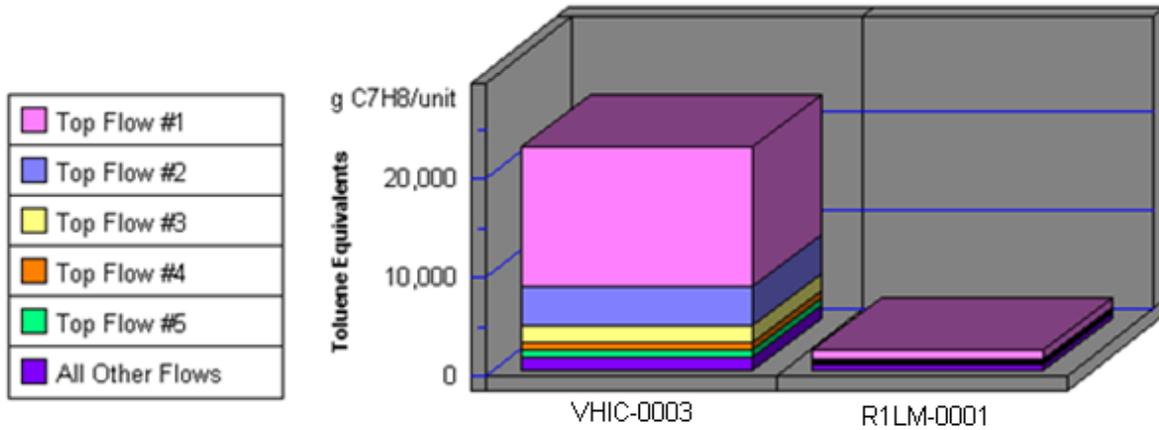


Note: Lower values are better

Category	VHIC-0003	R1LM-0001
Cancer--(a) Dioxins (unspecifie	3.11	0.12
Cancer--(a) Arsenic (As)	2.72	0.12
Cancer--(w) Arsenic (As3+, As5+	2.21	1.07
Cancer--(w) Phenol (C6H5OH)	1.71	0.67
Cancer--(a) Atrazine (C8H14ClN5	0.78	0.00
All Others	0.43	0.12
Sum	10.97	2.09

*Sorted by five topmost flows for worst-scoring product

Human Health Noncancer by Sorted Flows*



Alternatives

Note: Lower values are better

Category	VHIC-0003	R1LM-0001
Noncancer--(a) Mercury (Hg)	14,146.17	793.68
Noncancer--(a) Dioxins (unspeci	3,920.00	153.60
Noncancer--(a) Lead (Pb)	1,840.19	185.73
Noncancer--(a) Cadmium (Cd)	773.99	68.83
Noncancer--(w) Barium (Ba++)	590.61	294.48
All Others	1,482.50	586.80
Sum	22,753.47	2,083.11

*Sorted by five topmost flows for worst-scoring product

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 May 18, 2007.

Title: Ink Removers and Cleaners

Description: Chemical products designed to remove ink, haze, glaze, and other residual ink contaminants from the surfaces of equipment, such rollers, used in the textile and printing industries.

Manufacturers Identified: 9 manufacturers producing Ink Removers and Cleaners 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 producing Ink Removers and Cleaners:

- Biobased Manufacturers Association
- United Soybean Board
- Association of Specialists in Cleaning and Restoration
- Oregon Dry Cleaners Association
- Carpet & Rug Institute
- Unified Green Cleaning Alliance
- Washington Environmental Council
- Low Moisture Carpet Cleaners Association

Commercially Available Products Identified: Of the manufacturers identified, 17 Ink Removers and Cleaners 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 1 Ink Removers and Cleaners.

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

- None found

Samples Tested for Biobased Content: 4 samples of Ink Removers and Cleaners 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 Ink Removers and Cleaners indicate a range of content percentages from 5% minimum to 85% maximum biobased content as

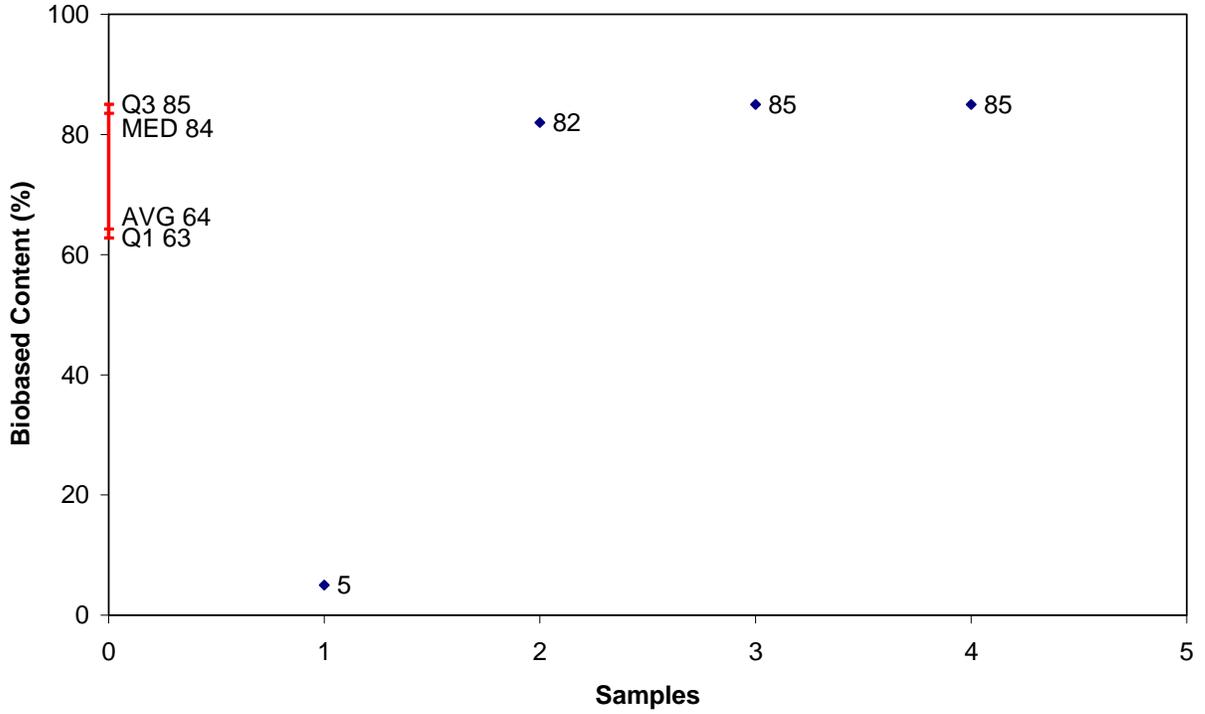
defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 1 Ink Removers and Cleaners have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Ink Removers and Cleaners range from \$16.90 minimum to \$16.90 maximum per usage unit. The environmental scores range from 0.0264 minimum to 0.0264 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Ink Removers and Cleaners

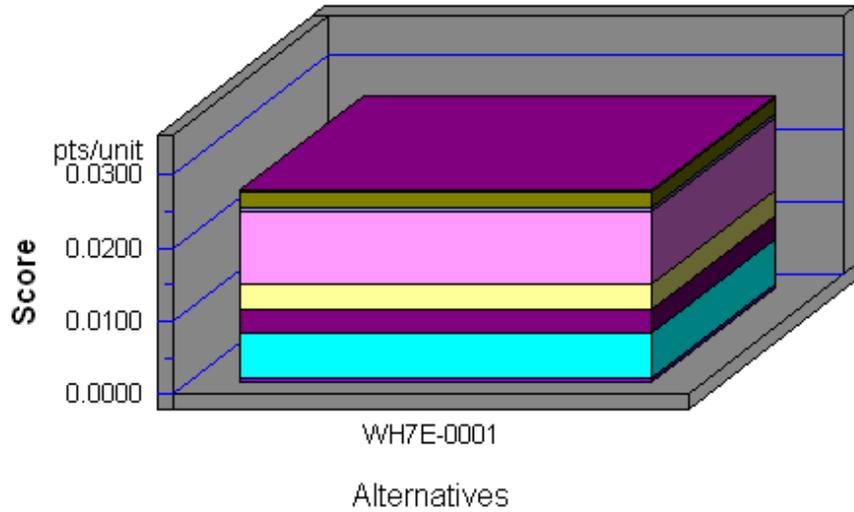


	Manufacturers Identified	Products Identified	C14	BEES
1	WP11	WP11-0004	5	
2	WH7E	WH7E-0001	82	Yes
3	B9D5	B9D5-0004	85	
4	WP11	WP11-0001	85	

Appendix B - BEES Analysis Results
 Units: 1 gallon of ink remover/cleaner

Environmental Performance

Acidification
Crit. Air Pollutants
Ecological Toxicity
Eutrophication
Fossil Fuel Depletion
Global Warming
Habitat Alteration
Human Health
Indoor Air
Ozone Depletion
Smog
Water Intake

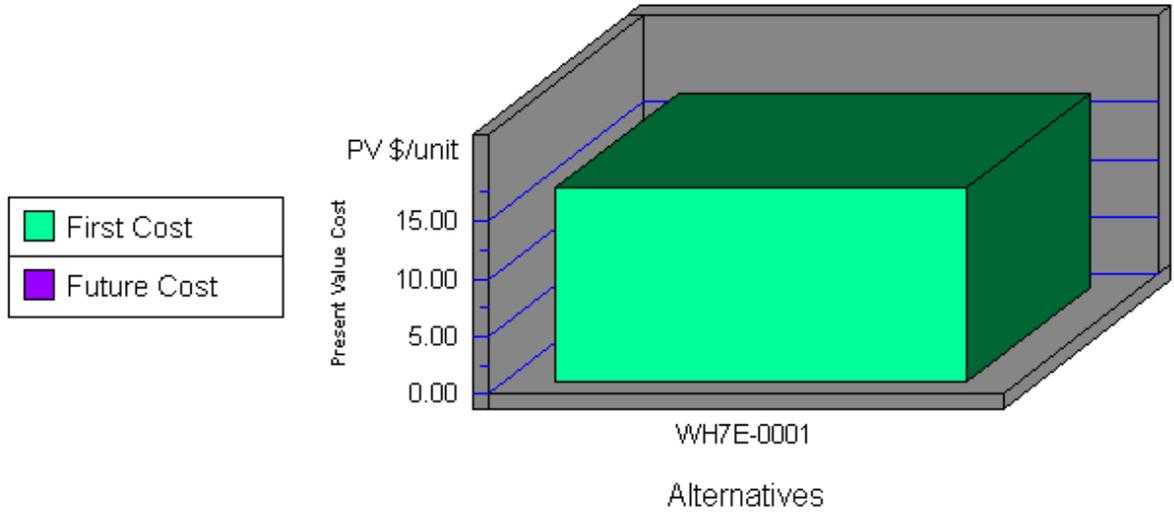


Note: Lower values are better

Category	WH7E-0001
Acidification--5%	0.0000
Crit. Air Pollutants--6%	0.0002
Ecolog. Toxicity--11%	0.0021
Eutrophication--5%	0.0006
Fossil Fuel Depl.--5%	0.0100
Global Warming--16%	0.0034
Habitat Alteration--16%	0.0000
Human Health--11%	0.0032
Indoor Air--11%	0.0000
Ozone Depletion--5%	0.0000
Smog--6%	0.0062
Water Intake--3%	0.0007
Sum	0.0264

Appendix B (continued)

Economic Performance

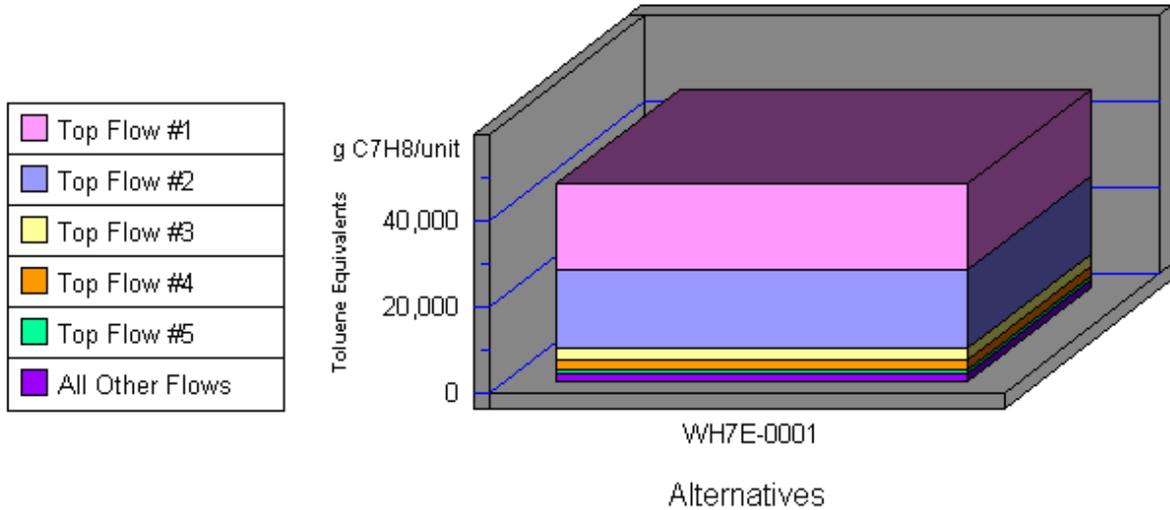


Category	WH7E-0001
First Cost	16.90
Future Cost-- 3.9%	0.00
Sum	16.90

*No significant/quantifiable durability differences are expected among competing alternatives. Therefore, future costs were not calculated.

Appendix B (continued)

Human Health by Sorted Flows*



Note: Lower values are better

Category	WH7E-0001
Cancer--(w) Arsenic (As3+, As5+	20,013.87
Cancer--(w) Phenol (C6H5OH)	18,052.68
Cancer--(a) Dioxins (unspecifie	2,776.79
Cancer--(a) Arsenic (As)	2,125.32
Cancer--(a) Benzene (C6H6)	1,351.39
All Others	1,814.34
Sum	46,134.39

*Sorted by five topmost flows for worst-scoring product

Appendix B (continued)

Ink Removers and Cleaners		
Impacts	Units	WH7E-0001
Acidification	millimoles H ⁺ equivalents	2.01E+03
Criteria Air Pollutants	microDALYs	4.97E-01
Ecological Toxicity	g 2,4-D equivalents	1.56E+01
Eutrophication	g N equivalents	2.26E+00
Fossil Fuel Depletion	MJ surplus energy	7.07E+01
Global Warming	g CO ₂ equivalents	5.50E+03
Habitat Alteration	T&E count	0.00E+00
Human Health	g C ₇ H ₈ equivalents	4.61E+04
Indoor Air Quality	G TVOCs	0.00E+00
Ozone Depletion	g CFC-11 equivalents	2.98E-07
Smog	g NO _x equivalents	1.56E+02
Water Intake	liters of water	1.23E+02

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: 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.

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 September 15, 2008.

Title: Mulch and Compost

Description: Mulch is a protective cover placed over the soil, primarily to keep down weeds, and to increase the appearance of the landscaping. Compost is the aerobically decomposed remnants of organic materials used in gardening and agriculture as a soil amendment, and commercially by the landscaping and container nursery industries.

Companies Supplying Item: 67 companies supplying Mulch and Composts 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 Mulch and Composts:

- United Soybean Board
- National Corn Growers Association
- The Association for Organics Recycling
- National Gardening Association
- Association of Compost Producers
- Ohio Compost Association, Inc.
- US Composting Council

Commercially Available Products Identified: Of the companies identified, 232 Mulch and Composts 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 53 Mulch and Composts.

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

- ASTM International C16 Standard Test Method for Load Testing Refractory Shapes at High Temperatures
- ASTM International D18 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- ASTM International D790 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

Samples Tested for Biobased Content: 7 samples of Mulch and Composts have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

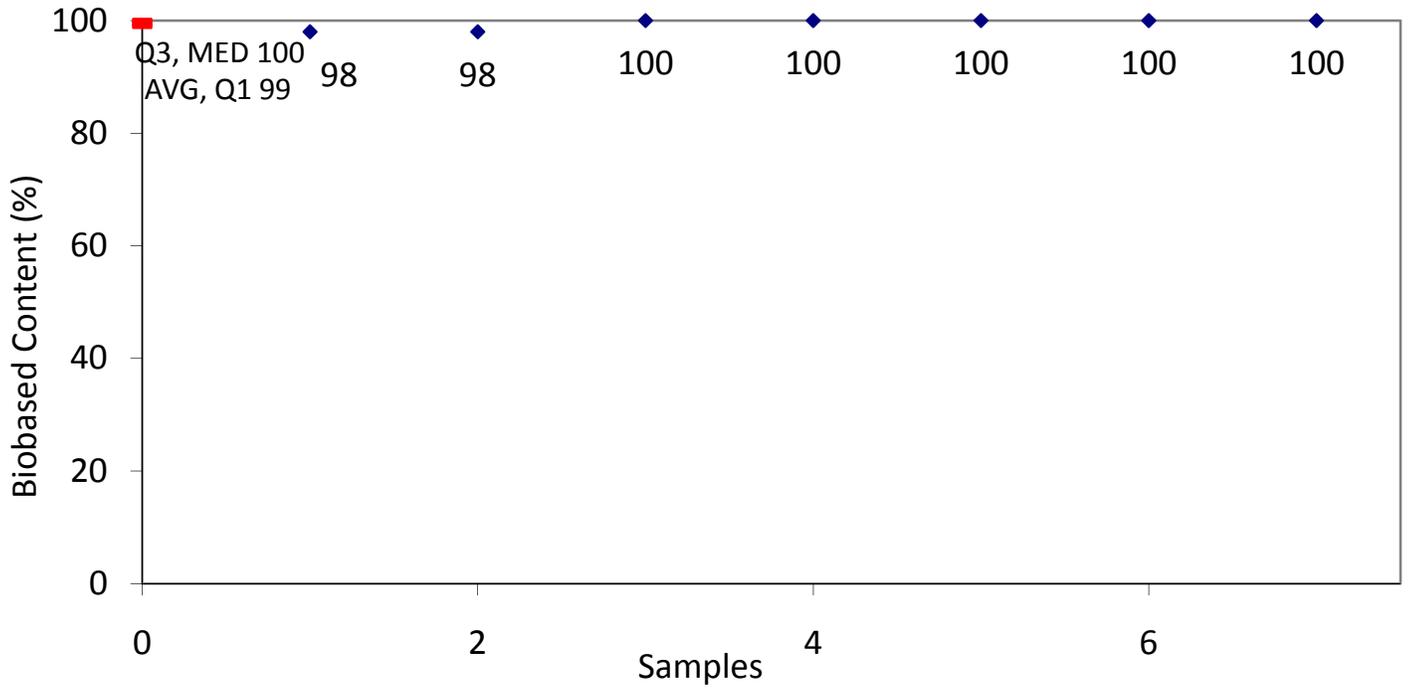
Biobased Content Data: Results from biobased content testing of Mulch and Composts indicate a range of content percentages from 98% minimum to 100% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 1 Mulch and Compost product has been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle cost of the submitted Mulch and Compost is \$9,213.75 per usage unit. The environmental score is 0.4064. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Mulch and Compost

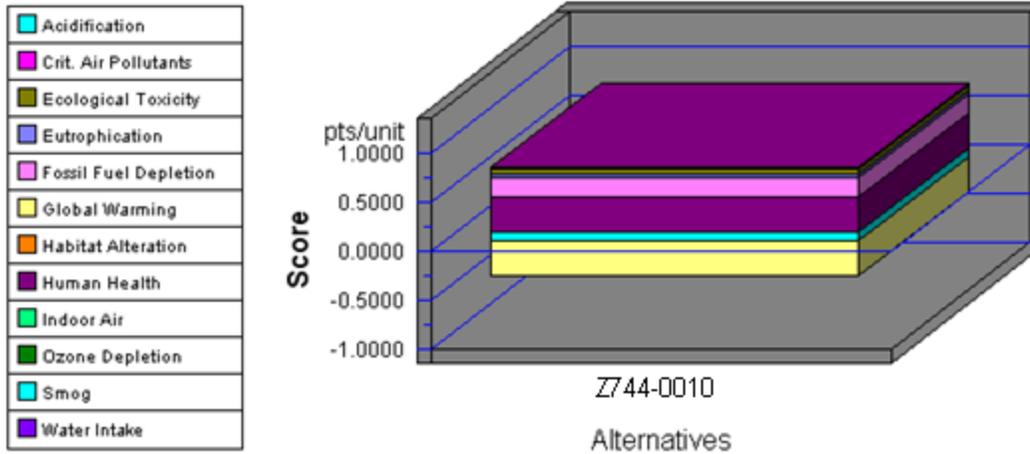


	Company	Product	C14	BEES
1	X2J2	X2J2-0004	98	
2	TR8G	TR8G-0001	98	
3	RX8H	RX8H-0001	100	
4	Z744	Z744-0010	100	Yes
5	U1V8	U1V8-0001	100	
6	P1RE	P1RE-0004	100	
7	P1RE	P1RE-0002	100	

Appendix B - BEES Analysis Results

Functional Unit: 1 acre of coverage

Environmental Performance

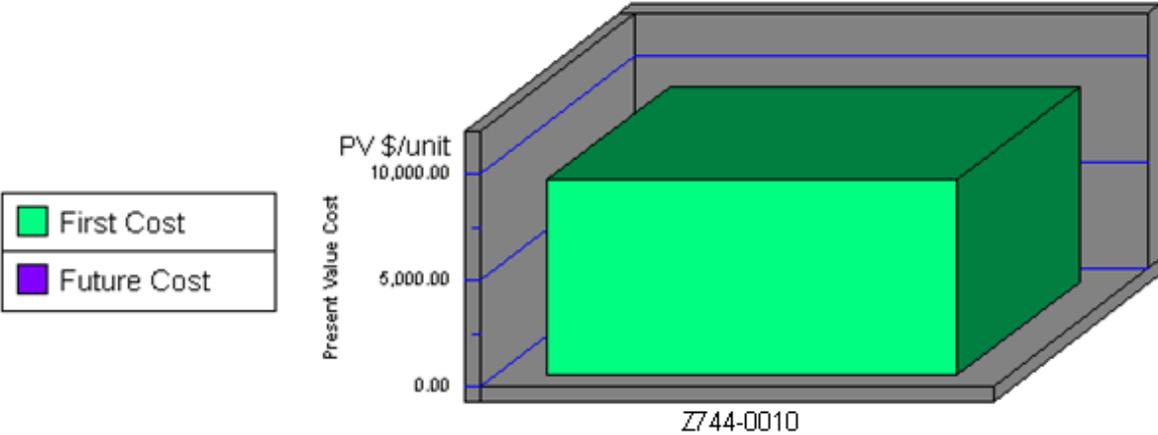


Note: Lower values are better

Category	Z744-0010
Acidification--3%	0.0001
Crit. Air Pollutants--9%	0.0143
Ecolog. Toxicity--7%	0.0600
Eutrophication--6%	0.0446
Fossil Fuel Depl.--10%	0.1898
Global Warming--29%	-0.3571
Habitat Alteration--6%	0.0000
Human Health--13%	0.3491
Indoor Air--3%	0.0000
Ozone Depletion--2%	0.0000
Smog--4%	0.1035
Water Intake--8%	0.0021
Sum	0.4064

Mulch and Compost		
Impacts	Units	Z744-0010
Acidification	millimoles H ⁺ equivalents	1.70E+05
Criteria Air Pollutants	microDALYs	3.05E+01
Ecotoxicity	g 2,4-D equivalents	7.00E+02
Eutrophication	g N equivalents	1.43E+02
Fossil Fuel Depletion	MJ surplus energy	6.70E+02
Global Warming	g CO ₂ equivalents	-3.15E+05
Habitat Alteration	T&E count	0.00E+00
Human Health--Cancer	g C ₆ H ₆ equivalents	2.24E+02
Human Health--NonCancer	g C ₇ H ₈ equivalents	2.04E+05
Indoor Air Quality	g TVOCs	0.00E+00
Ozone Depletion	g CFC-11 equivalents	2.66E-05
Smog	g NO _x equivalents	3.92E+03
Water Intake	liters of water	1.37E+02
Functional Unit	-----	1 acre of coverage
<p>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.</p>		

Economic Performance

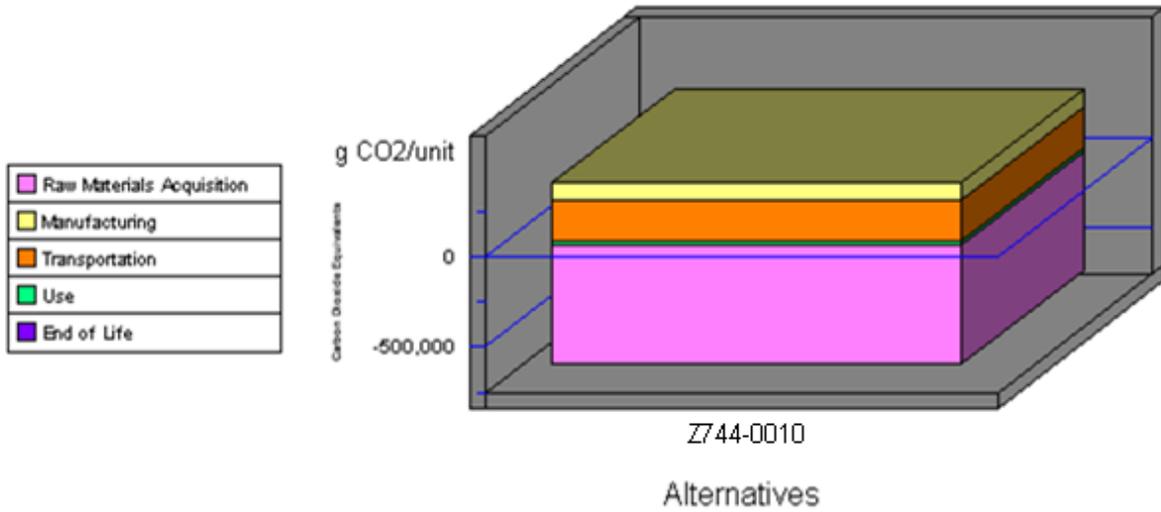


Alternatives

Category	Z744-0010
First Cost	9213.75
Future Cost-- 3.0%	0.00
Sum	9213.75

*This is a consumable product. Therefore, future costs are not calculated.

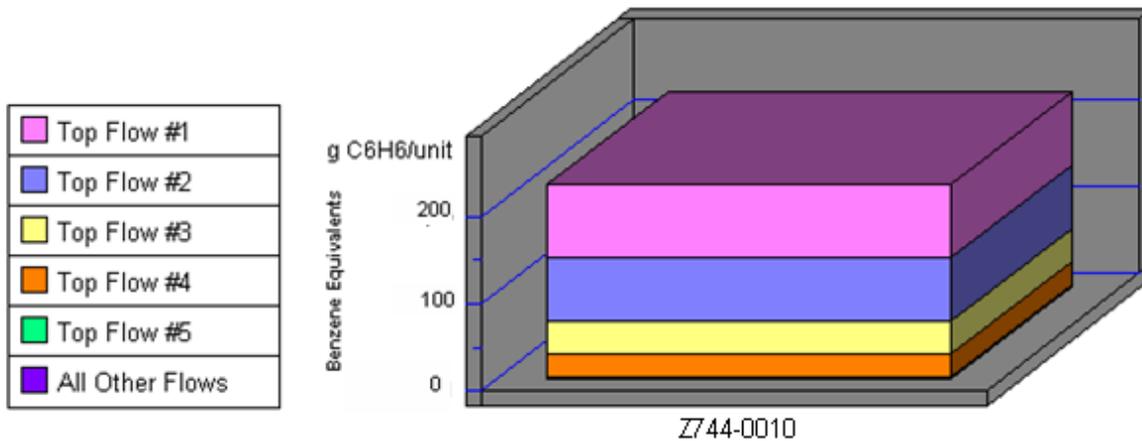
Global Warming by Life-Cycle Stage



Note: Lower values are better

Category	Z744-0010
1. Raw Materials	-658805
2. Manufacturing	95666
3. Transportation	230649
4. Use	17511
5. End of Life	0
Sum	-314979

Human Health Cancer by Sorted Flows*

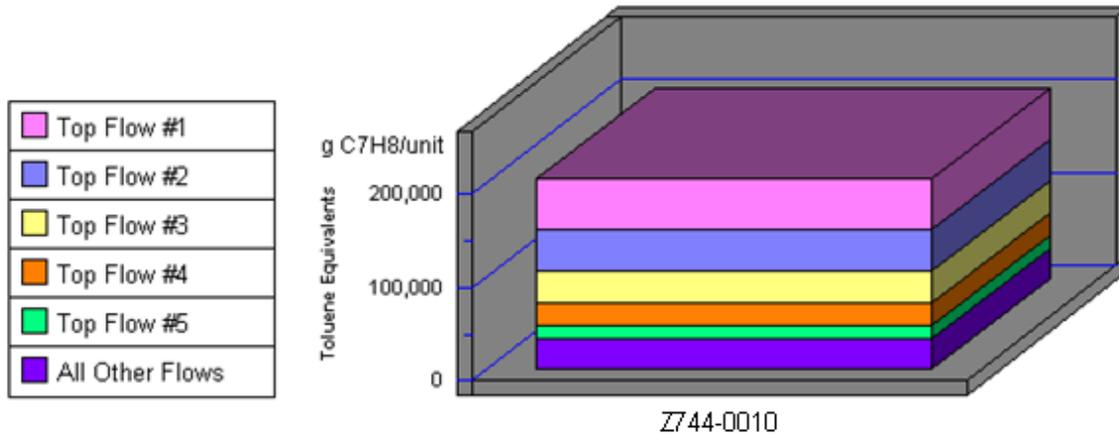


Note: Lower values are better

Category	Z744-0010
Cancer--(w) Arsenic (As3+, As5+	84.66
Cancer--(w) Phenol (C6H5OH)	72.78
Cancer--(a) Dioxins (unspecifie	35.59
Cancer--(a) Arsenic (As)	27.13
Cancer--(a) Benzene (C6H6)	0.97
All Others	2.65
Sum	223.78

*Sorted by five topmost flows for worst-scoring product

Human Health Noncancer by Sorted Flows*



Alternatives

Note: Lower values are better

Category	Z744-0010
Noncancer--(w) Barium (Ba++)	54,096.78
Noncancer--(a) Dioxins (unspeci	44,836.00
Noncancer--(a) Mercury (Hg)	34,858.81
Noncancer--(w) Lead (Pb++, Pb4+	23,259.16
Noncancer--(a) Lead (Pb)	14,837.90
All Others	32,118.39
Sum	204,007.04

*Sorted by five topmost flows for worst-scoring product

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 May 18, 2007.

Title: Multipurpose Lubricants

Description: Lubricants used in a variety of industrial settings to prevent friction or rust.

Manufacturers Identified: 16 manufacturers producing Multipurpose Lubricants 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 producing Multipurpose Lubricants:

- Biobased Manufacturers Association
- United Soybean Board
- Independent Lubricants Manufacturers Association
- National Corn Growers Association
- American Corn Growers Association
- Corn Refiners Association
- American Soybean Association
- The Society of Tribologists and Lubrication Engineers
- The American Society of Mechanical Engineers, Tribology and Lubrication Division
- The National Lubricating Grease Institute

Commercially Available Products Identified: Of the manufacturers identified, 30 Multipurpose Lubricants 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 4 Multipurpose Lubricants.

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

- API GL-1 Service Designation denotes lubricants intended for manual transmissions operating under such mild conditions that straight petroleum or refined petroleum oil may be used
- satisfactorily
- ASTM D1748 Standard Test Method for Rust Protection by Metal Preservatives in the Humidity Cabinet
- ASTM D130 Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test

- ASTM D665 Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water
- ASTM D2266 Standard Test Method for Wear Preventive Characteristics of Lubricating Grease (Four-Ball Method)
- ASTM D482 Standard Test Method for Ash from Petroleum Products
- ASTM D92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- ASTM D97 Standard Test Method for Pour Point of Petroleum Products
- ASTM D972 Standard Test Method for Evaporation Loss of Lubricating Greases and Oils
- ISO 32 Calibration in analytical chemistry and use of certified reference materials
- ISO 68 International Standards Organization Viscosity Grade
- SAE 30 J300 Engine Oil Viscosity Classification
- Vickers I-286-S Tests for pump wear
- ASTM International D5864 Standard test method for determining aerobic aquatic biodegradation of lubricants or their components

Samples Tested for Biobased Content: 5 samples of Multipurpose Lubricants have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

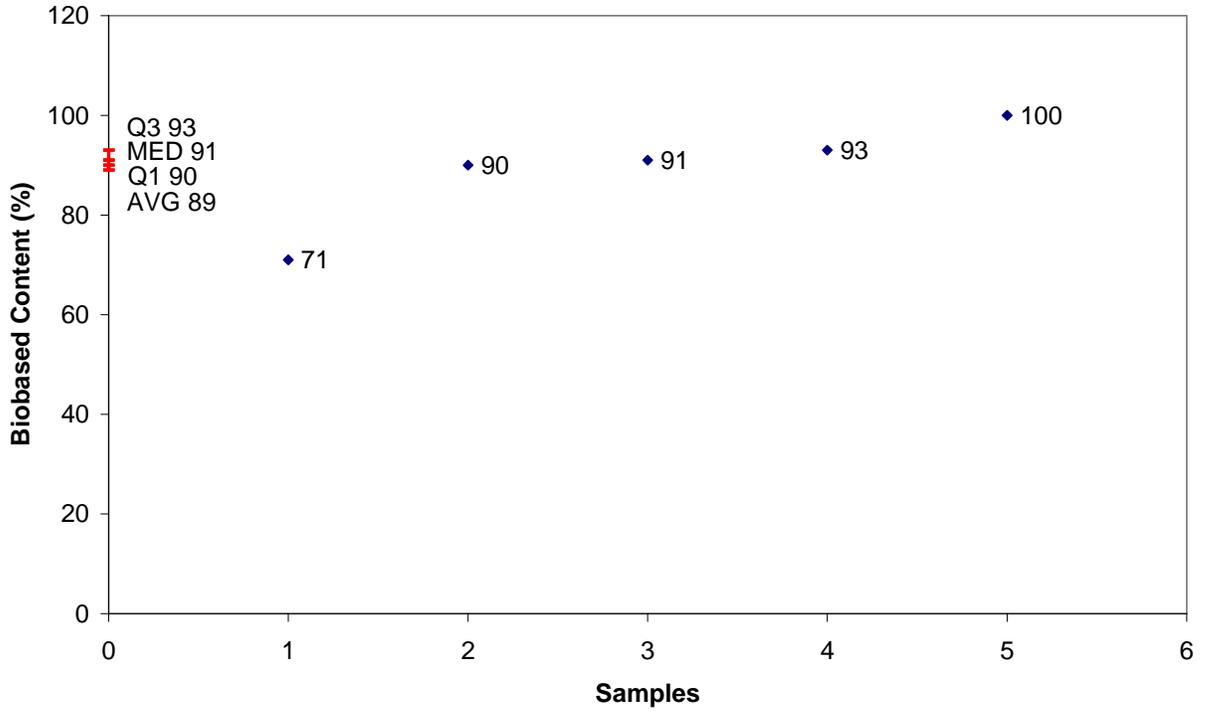
Biobased Content Data: Results from biobased content testing of Multipurpose Lubricants indicate a range of content percentages from 71% minimum to 100% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

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

BEES Analysis: The life-cycle costs of the submitted Multipurpose Lubricants range from \$11.25 minimum to \$11.78 maximum per usage unit. The environmental scores range from 0.0188 minimum to 0.0500 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

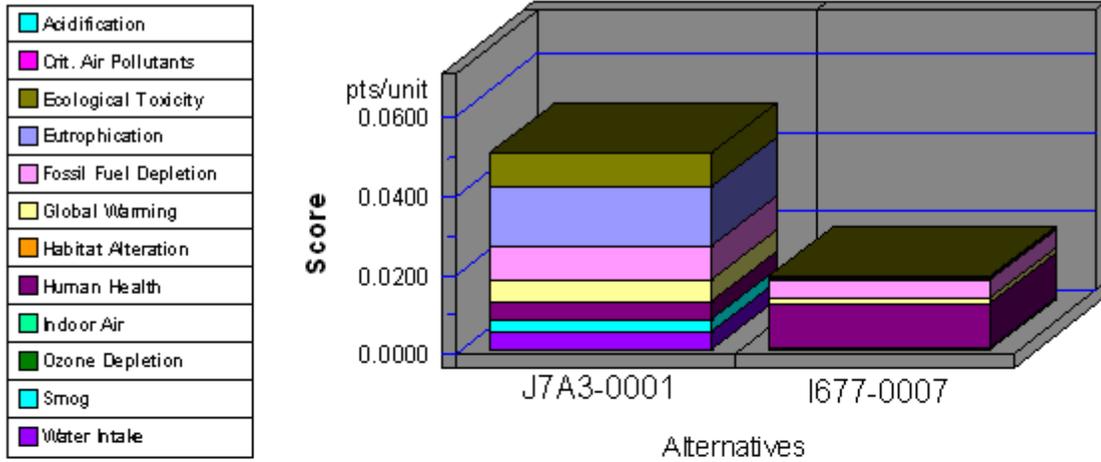
Multi-Purpose Lubricants



	Manufacturers Identified	Products Identified	C14	BEES
1	EPBV	EPBV-0002	71	
2	JY3G	JY3G-0037	90	
3	BP37	BP37-0009	91	
4	I677	I677-0007	93	Yes
5	J7A3	J7A3-0001	100	Yes

Appendix B - BEES Analysis Results
 Functional Unit: 1 Gallon of Multipurpose Lubricant

Environmental Performance

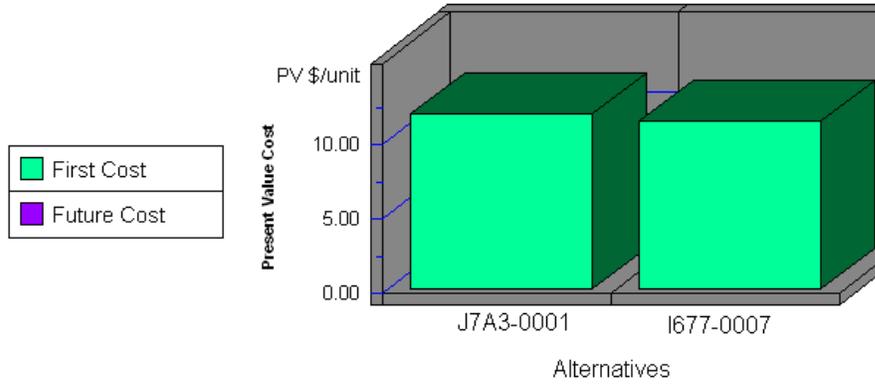


Note: Lower values are better

Category	J7A3-0001	I677-0007
Acidification-5%	0.0000	0.0000
Crit. Air Pollutants-6%	0.0002	0.0001
Ecolog. Toxicity-11%	0.0083	0.0006
Eutrophication-5%	0.0152	0.0005
Fossil Fuel Depl.-5%	0.0086	0.0044
Global Warming-16%	0.0055	0.0013
Habitat Alteration-16%	0.0000	0.0000
Human Health-11%	0.0045	0.0112
Indoor Air-11%	0.0000	0.0000
Ozone Depletion-5%	0.0000	0.0000
Smog-6%	0.0031	0.0006
Water Intake-3%	0.0046	0.0001
Sum	0.0500	0.0188

Appendix B (continued)

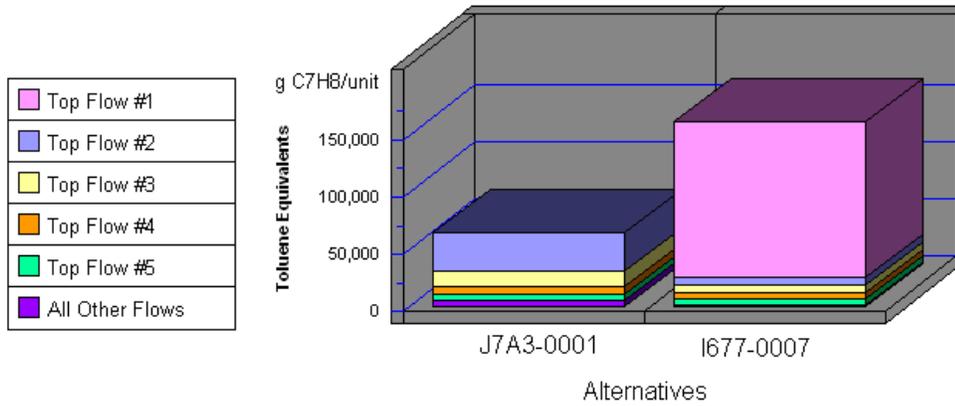
Economic Performance



Category	J7A3-0001	I677-0007
First Cost	11.78	11.25
Future Cost-- 3.9%	0.00	0.00
Sum	11.78	11.25

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

Human Health by Sorted Flows*



Note: Lower values are better

Category	J7A3-0001	I677-0007
Cancer--(a) Ethylene Oxide (C2H	0.00	136,292.97
Cancer--(w) Arsenic (As3+, As5+	33,490.85	6,438.38
Cancer--(w) Phenol (C6H5OH)	12,690.06	6,269.63
Cancer--(a) Dioxins (unspecifie	6,598.47	6,086.20
Cancer--(a) Arsenic (As)	6,344.73	4,607.81
All Others	5,621.64	2,340.67
Sum	64,745.74	162,035.66

*Sorted by five topmost flows for worst-scoring product

Appendix B (continued)

Multipurpose Lubricants			
Impacts	Units	J7A3-0001	I677-0007
Acidification	millimoles H ⁺ equivalents	4.70E+03	8.63E+02
Criteria Air Pollutants	microDALYs	5.33E-01	1.95E-01
Ecological Toxicity	g 2,4-D equivalents	6.13E+01	4.64E+00
Eutrophication	g N equivalents	5.85E+01	1.82E+00
Fossil Fuel Depletion	MJ surplus energy	6.06E+01	3.10E+01
Global Warming	g CO ₂ equivalents	8.72E+03	2.11E+03
Habitat Alteration	T&E count	0.00E+00	0.00E+00
Human Health	g C ₇ H ₈ equivalents	6.47E+04	1.62E+05
Indoor Air Quality	g TVOCs	0.00E+00	0.00E+00
Ozone Depletion	g CFC-11 equivalents	2.86E-05	9.55E-06
Smog	g NO _x equivalents	7.82E+01	1.40E+01
Water Intake	liters of water	8.11E+02	2.02E+01
Functional Unit	-----	1 gallon of multipurpose lubricant	

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: grams of toluene equivalents; Indoor Air Quality: grams of Total Volatile Organic Compounds; Ozone Depletion: grams of chlorofluorocarbon-11 equivalents; Smog: grams of nitrogen oxide equivalents; and Water Intake: liters of water.

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 September 15, 2008.

Title: Office Paper

Description: Paper for office printer and copier applications, writing, and coated papers for publications.

Companies Supplying Item: 13 companies supplying Office Paper 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 Office Paper:

- United Soybean Board
- Technical Association of the Pulp and Paper Industry
- Paper Industry Association Council
- American Forest & Paper Association
- Forest Products Society
- Forest Resources Association Inc.
- National Paper Trade Association Inc.
- Newspaper Association of America
- Paper Industry International Hall of Fame Inc.
- Paper Industry Management Association
- Printing Industries of America, Inc.
- Green Press Initiative
- Conservatree
- Fiber Futures

Commercially Available Products Identified: Of the companies identified, 20 Office Papers 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 8 Office Papers.

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

- JCP A230 Printing Paper - High Yield Coated Opaque Offset (Light Coating)

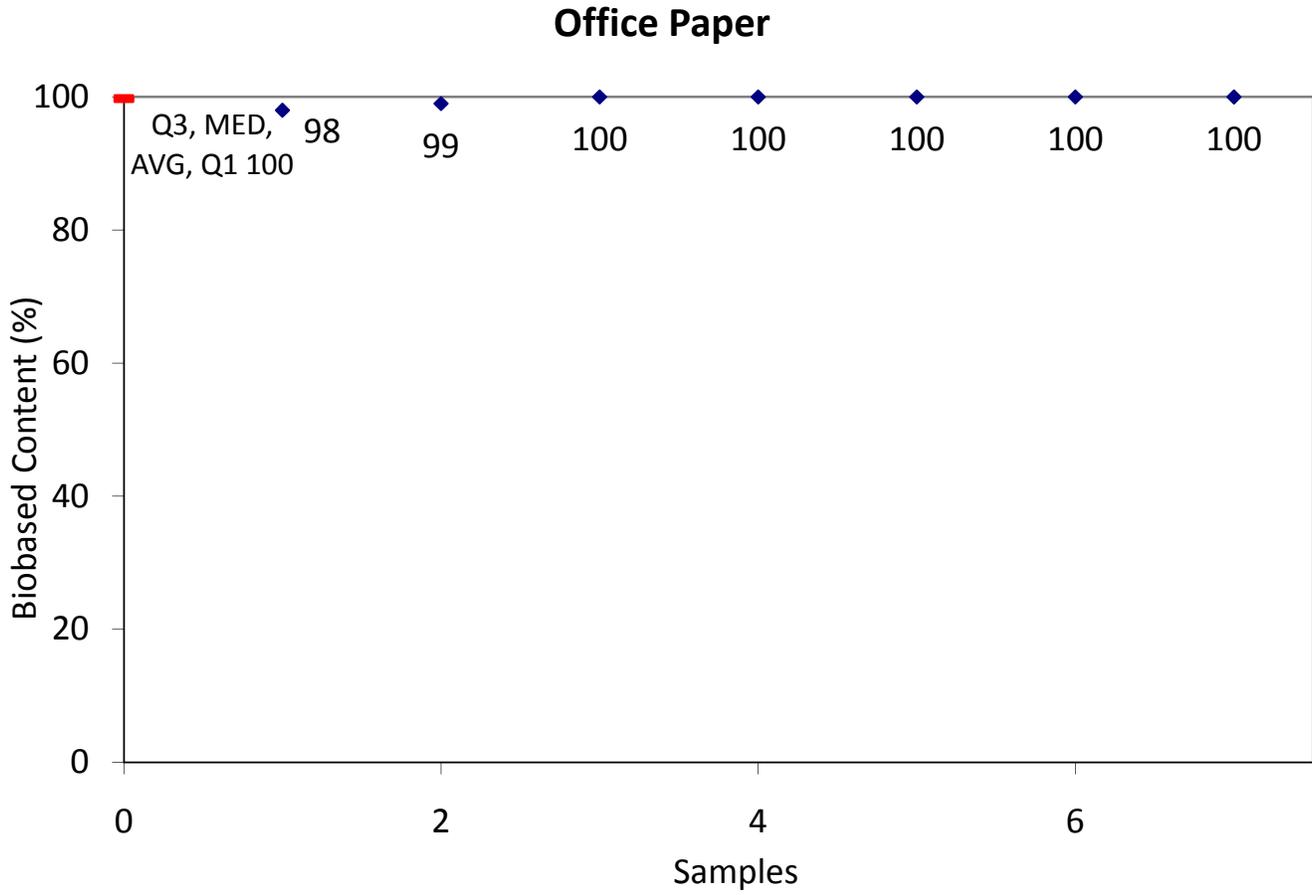
Samples Tested for Biobased Content: 7 samples of Office Paper have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

Biobased Content Data: Results from biobased content testing of Office Paper indicate a range of content percentages from 98% minimum to 100% 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 1 Office Paper has been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle cost of the submitted Office Paper is \$29.95 per usage unit. The environmental score is 0.2793. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data



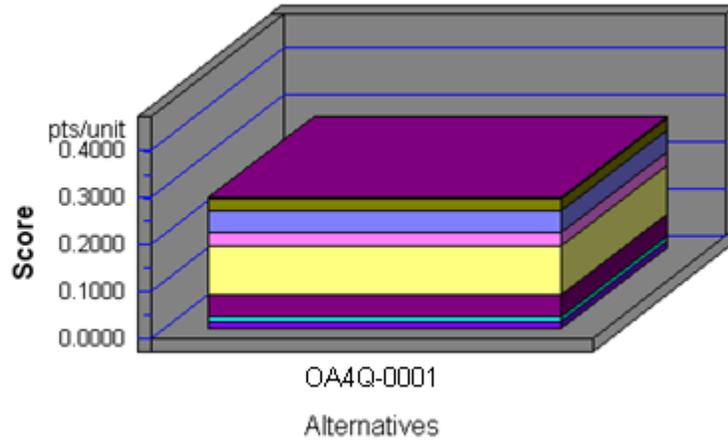
	Company	Product	C14	BEES
1	QW4J	QW4J-0002	98	
2	DPKX	DPKX-0004	99	
3	WS82	WS82-0001	100	
4	WV3A	WV3A-0001	100	
5	OA4Q	OA4Q-0001	100	Yes
6	QW4J	QW4J-0003	100	
7	WS82	WS82-0002	100	

Appendix B - BEES Analysis Results

Functional Unit: 1 carton

Environmental Performance

Acidification
Crit. Air Pollutants
Ecological Toxicity
Eutrophication
Fossil Fuel Depletion
Global Warming
Habitat Alteration
Human Health
Indoor Air
Ozone Depletion
Smog
Water Intake

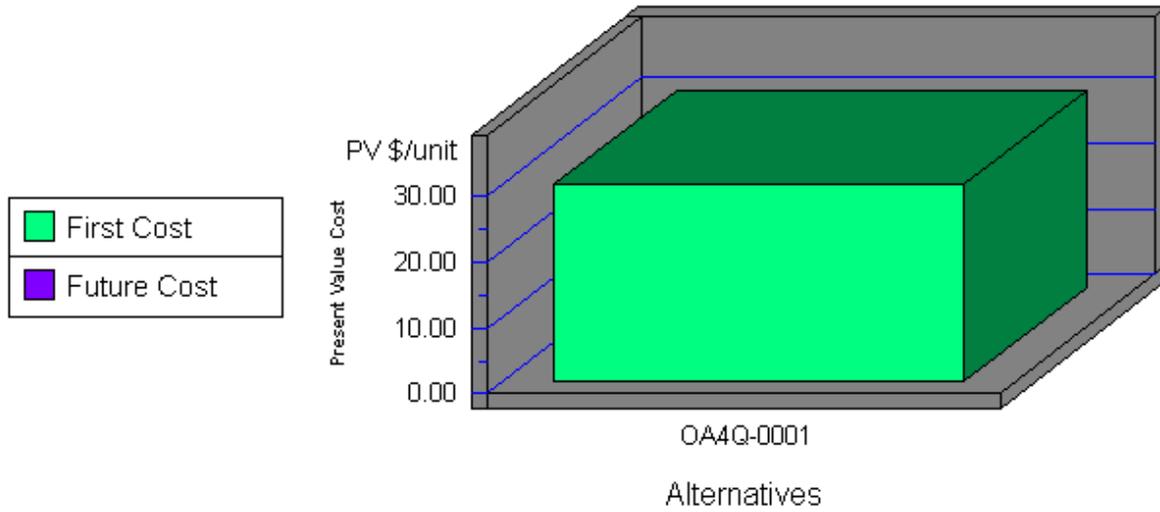


Note: Lower values are better

Category	OA4Q-0001
Acidification--3%	0.0000
Crit. Air Pollutants--9%	0.0021
Ecolog. Toxicity--7%	0.0268
Eutrophication--6%	0.0455
Fossil Fuel Depl.--10%	0.0281
Global Warming--29%	0.1053
Habitat Alteration--6%	0.0000
Human Health--13%	0.0464
Indoor Air--3%	0.0000
Ozone Depletion--2%	0.0000
Smog--4%	0.0097
Water Intake--8%	0.0154
Sum	0.2793

Paper (Printing and Writing)		
Impacts	Units	OA4Q-0001
Acidification	millimoles H ⁺ equivalents	2.17E+04
Criteria Air Pollutants	microDALYs	4.44E+00
Ecotoxicity	g 2,4-D equivalents	3.12E+02
Eutrophication	g N equivalents	1.46E+02
Fossil Fuel Depletion	MJ surplus energy	9.90E+01
Global Warming	g CO ₂ equivalents	9.29E+04
Habitat Alteration	T&E count	0.00E+00
Human Health--Cancer	g C ₆ H ₆ equivalents	2.97E+01
Human Health--NonCancer	g C ₇ H ₈ equivalents	2.78E+04
Indoor Air Quality	g TVOCs	0.00E+00
Ozone Depletion	g CFC-11 equivalents	2.07E-05
Smog	g NO _x equivalents	3.68E+02
Water Intake	liters of water	1.02E+03
Functional Unit	-----	1 carton
<p>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.</p>		

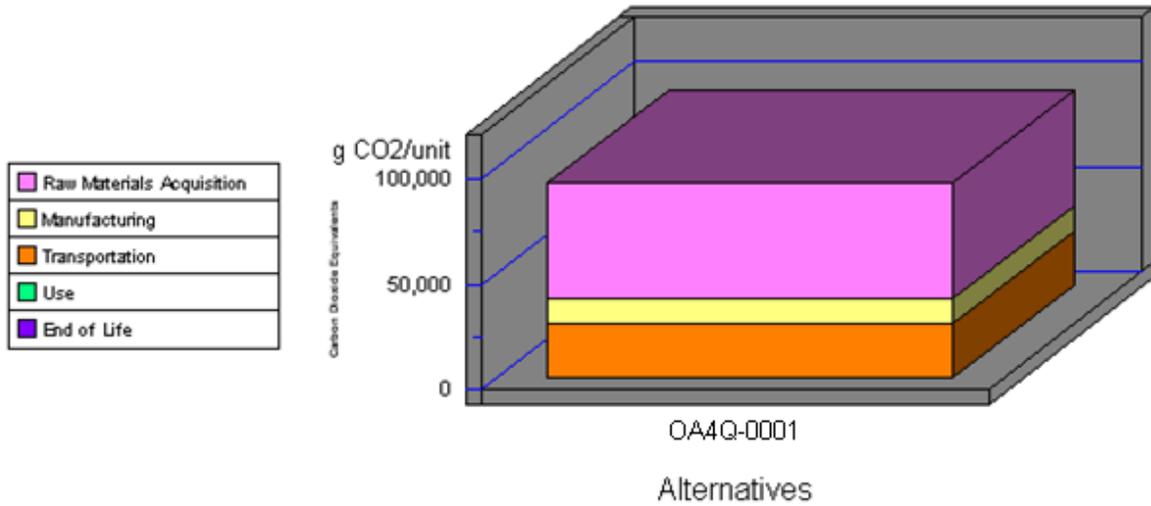
Economic Performance



Category	OA4Q-0001
First Cost	29.95
Future Cost-- 3.0%	0.00
Sum	29.95

*This is a consumable product. Therefore, future costs are not calculated.

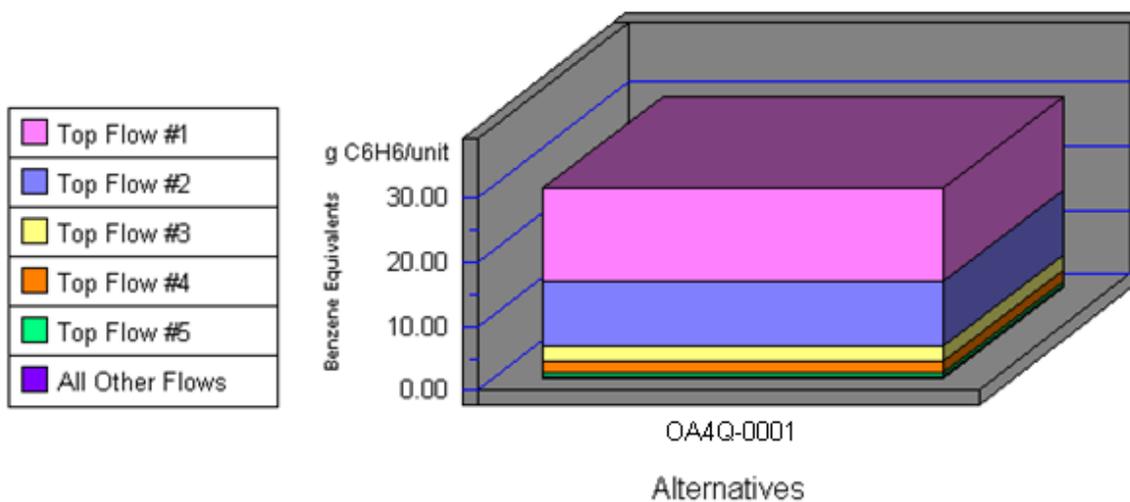
Global Warming by Life-Cycle Stage



Note: Lower values are better

Category	OA4Q-0001
1. Raw Materials	54671
2. Manufacturing	11794
3. Transportation	26429
4. Use	0
5. End of Life	0
Sum	92894

Human Health Cancer by Sorted Flows*

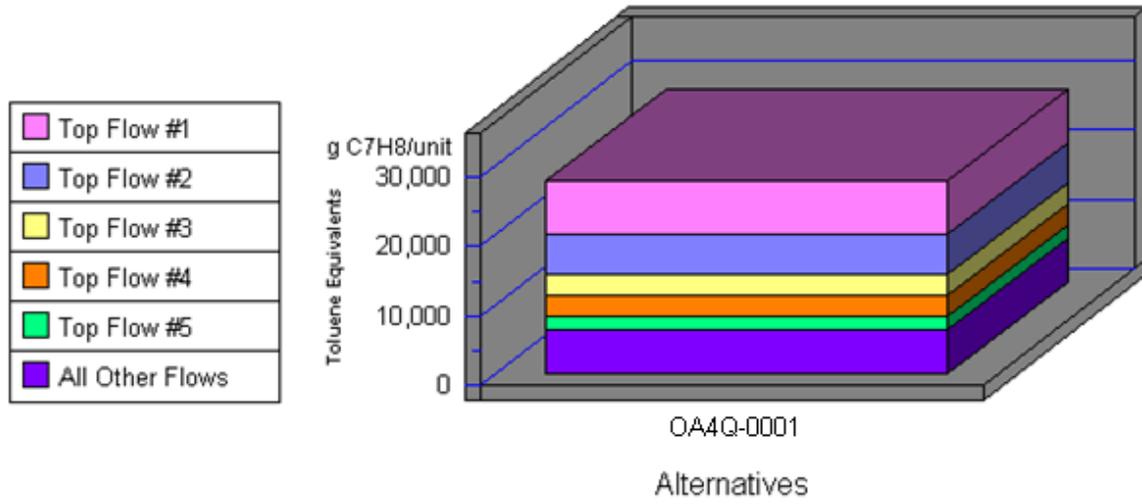


Note: Lower values are better

Category	OA4Q-0001
Cancer--(w) Arsenic (As3+, As5+)	14.39
Cancer--(w) Phenol (C6H5OH)	10.29
Cancer--(a) Dioxins (unspecifie)	2.29
Cancer--(a) Arsenic (As)	1.79
Cancer--(a) Benzene (C6H6)	0.53
All Others	0.41
Sum	29.70

*Sorted by five topmost flows for worst-scoring product

Human Health Noncancer by Sorted Flows*



Note: Lower values are better

Category	OA4Q-0001
Noncancer--(a) Mercury (Hg)	7,795.18
Noncancer--(w) Barium (Ba++)	5,688.99
Noncancer--(w) Lead (Pb++, Pb4+)	3,062.73
Noncancer--(a) Dioxins (unspeci)	2,884.42
Noncancer--(a) Lead (Pb)	1,876.83
All Others	6,501.71
Sum	27,809.86

*Sorted by five topmost flows for worst-scoring product

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 September 17, 2008.

Title: Topical Pain Relief

Description: Balms, creams and other topical treatments for the relief of muscle, joint, headache, and nerve pain, as well as sprains, bruises, swelling, and other aches.

Companies Supplying Item: 30 companies supplying Topical Pain Reliefs 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 Topical Pain Reliefs:

- United Soybean Board
- National Corn Growers Association
- American Massage Therapy Association
- IDEA Health & Fitness Association

Commercially Available Products Identified: Of the companies identified, 48 Topical Pain Relief products 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 11 Topical Pain Relief.

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

- No Results

Samples Tested for Biobased Content: 5 samples of Topical Pain Relief have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

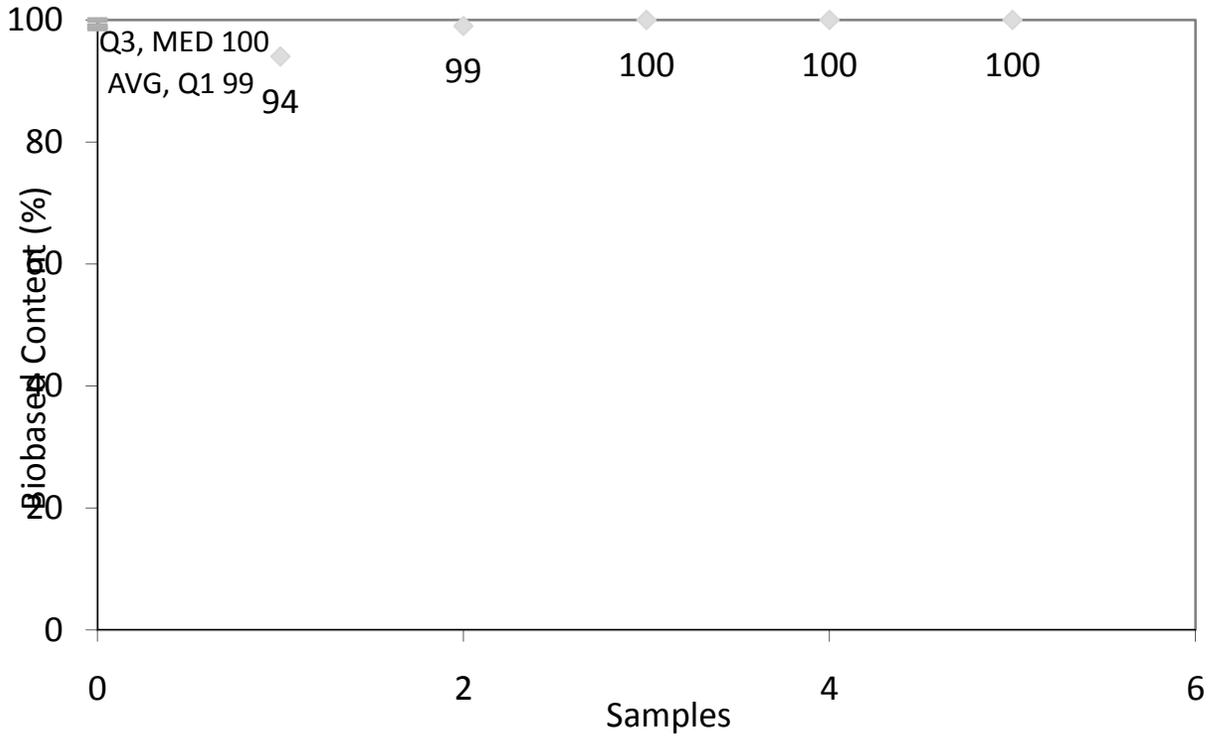
Biobased Content Data: Results from biobased content testing of Topical Pain Relief indicate a range of content percentages from 94% minimum to 100% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 2 Topical Pain Relief have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Topical Pain Relief range from \$88.00 minimum to \$156.99 maximum per usage unit. The environmental scores range from 0.0052 minimum to 0.0081 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Topical Pain Relief

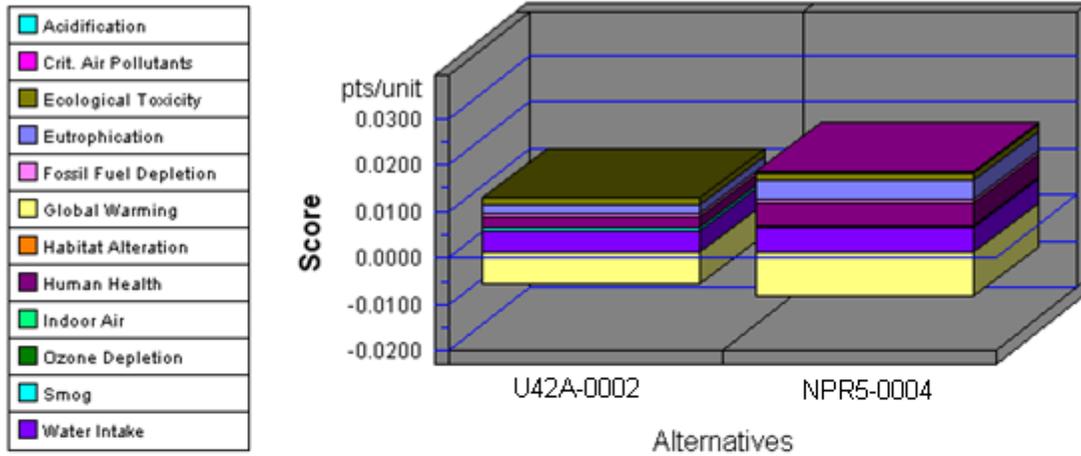


	Company	Product	C14	BEES
1	Q5ON	Q5ON-0018	94	
2	Q5ON	Q5ON-0023	99	
3	Q5ON	Q5ON-0024	100	
4	NPR5	NPR5-0004	100	Yes
5	U42A	U42A-0002	100	Yes

Appendix B - BEES Analysis Results

Functional Unit: 1 kg of product

Environmental Performance

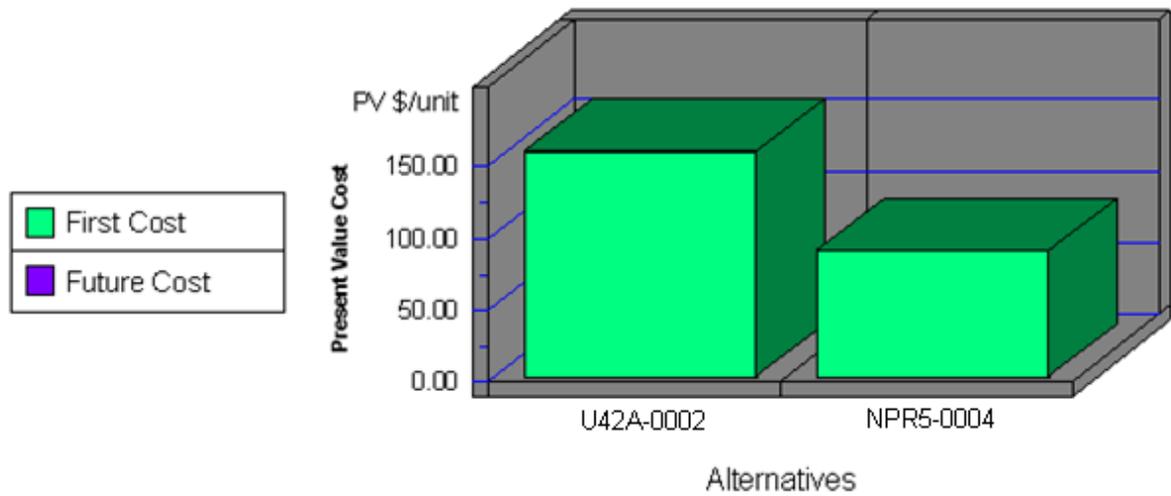


Note: Lower values are better

Category	U42A-0002	NPR5-0004
Acidification--3%	0.0000	0.0000
Crit. Air Pollutants--9%	0.0001	0.0002
Ecolog. Toxicity--7%	0.0016	0.0018
Eutrophication--6%	0.0019	0.0039
Fossil Fuel Depl.--10%	0.0006	0.0007
Global Warming--29%	-0.0067	-0.0093
Habitat Alteration--6%	0.0000	0.0000
Human Health--13%	0.0024	0.0050
Indoor Air--3%	0.0000	0.0000
Ozone Depletion--2%	0.0000	0.0000
Smog--4%	0.0006	0.0006
Water Intake--8%	0.0047	0.0052
Sum	0.0052	0.0081

Topical Pain Relief			
Impacts	Units	U42A-0002	NPR5-0004
Acidification	millimoles H ⁺ equivalents	9.81E+02	1.27E+03
Criteria Air Pollutants	microDALYs	2.50E-01	3.95E-01
Ecotoxicity	g 2,4-D equivalents	1.82E+01	2.11E+01
Eutrophication	g N equivalents	6.07E+00	1.25E+01
Fossil Fuel Depletion	MJ surplus energy	2.18E+00	2.39E+00
Global Warming	g CO ₂ equivalents	-5.93E+03	-8.24E+03
Habitat Alteration	T&E count	0.00E+00	0.00E+00
Human Health--Cancer	g C ₆ H ₆ equivalents	1.49E+00	3.18E+00
Human Health--NonCancer	g C ₇ H ₈ equivalents	3.48E+03	5.70E+03
Indoor Air Quality	g TVOCs	0.00E+00	0.00E+00
Ozone Depletion	g CFC-11 equivalents	3.44E-05	9.79E-05
Smog	g NO _x equivalents	2.18E+01	2.17E+01
Water Intake	liters of water	3.15E+02	3.45E+02
Functional Unit	-----	1 kg of product	
<p>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.</p>			

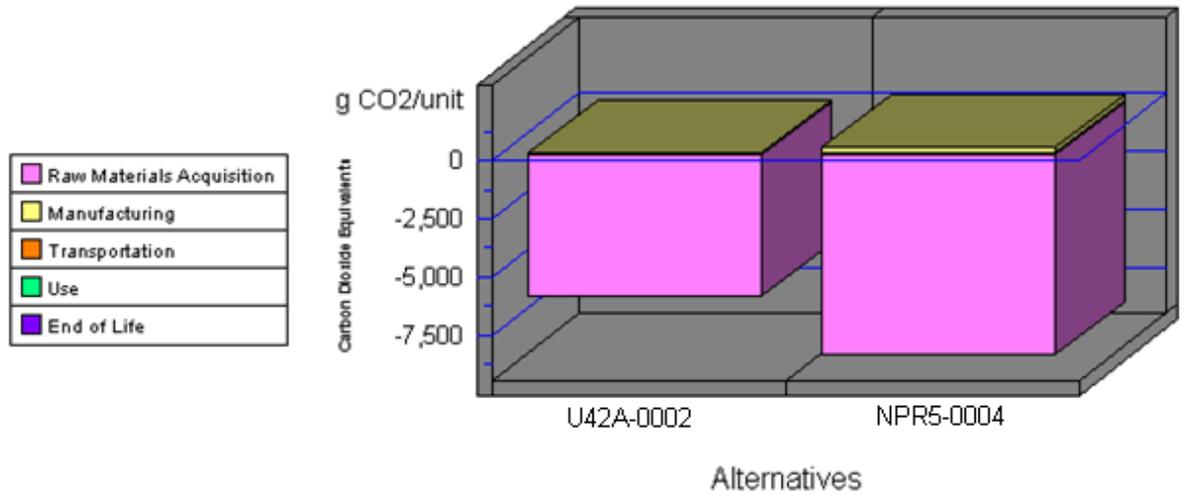
Economic Performance*



Category	U42A-0002	NPR5-0004
First Cost	156.99	88.00
Future Cost-- 3.0%	0.00	0.00
Sum	156.99	88.00

*This is a consumable product. Therefore, future costs are not calculated.

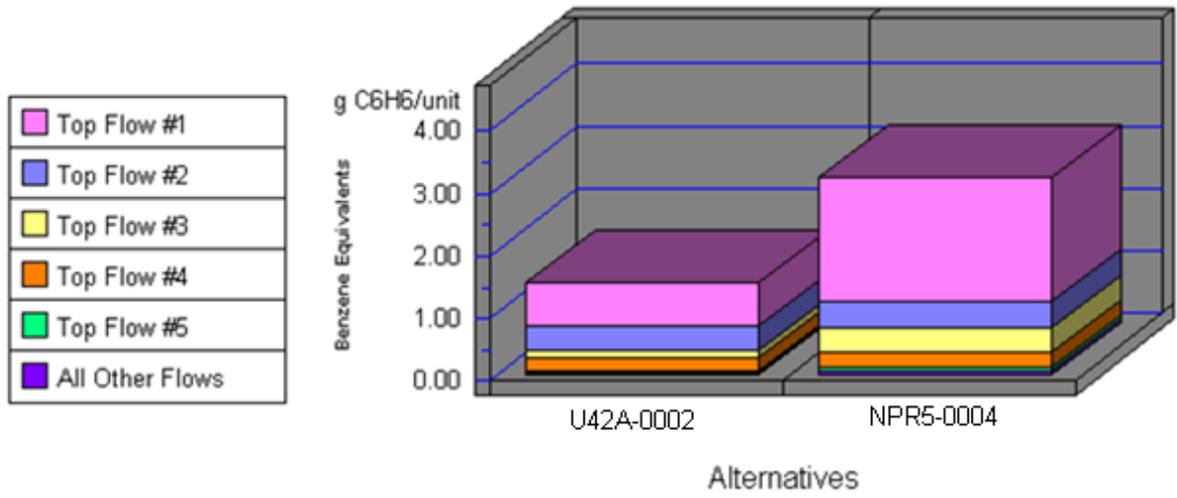
Global Warming by Life-Cycle Stage



Note: Lower values are better

Category	U42A-0002	NPR5-0004
1. Raw Materials	-6065	-8616
2. Manufacturing	111	275
3. Transportation	20	97
4. Use	0	0
5. End of Life	0	0
Sum	-5934	-8244

Human Health Cancer by Sorted Flows*

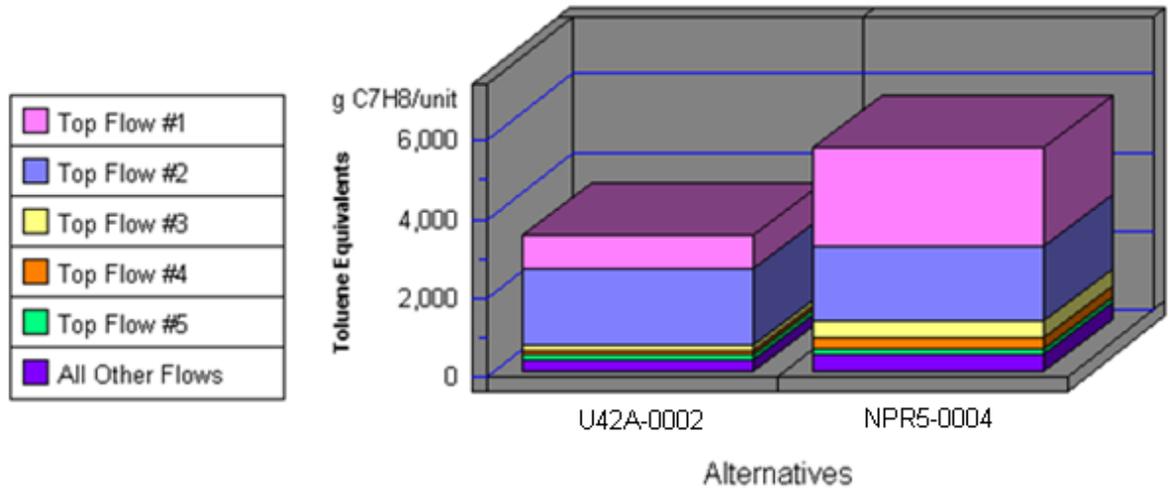


Note: Lower values are better

Category	U42A-0002	NPR5-0004
Cancer--(a) Dioxins (unspecifie	0.68	1.99
Cancer--(w) Arsenic (As3+, As5+	0.42	0.43
Cancer--(a) Arsenic (As)	0.11	0.39
Cancer--(w) Phenol (C6H5OH)	0.22	0.24
Cancer--(a) Carbon Tetrachlorid	0.03	0.07
All Others	0.04	0.06
Sum	1.49	3.18

*Sorted by five topmost flows for worst-scoring product

Human Health Noncancer by Sorted Flows*



Note: Lower values are better

Category	U42A-0002	NPR5-0004
Noncancer--(a) Dioxins (unspeci	858.68	2,506.39
Noncancer--(w) Mercury (Hg+, Hg	1,947.55	1,872.76
Noncancer--(a) Mercury (Hg)	126.60	455.36
Noncancer--(a) Lead (Pb)	78.98	261.59
Noncancer--(w) Barium (Ba++)	152.80	136.35
All Others	311.30	463.77
Sum	3,475.90	5,696.23

*Sorted by five topmost flows for worst-scoring product

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 October 3, 2008.

Title: Turbine Drip Oils

Description: Lubricants for use in drip lubrication systems for water well line shaft bearings, water turbine bearings for irrigation pumps, and other turbine bearing applications.

Companies Supplying Item: 4 companies supplying Turbine Drip Oils 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 Turbine Drip Oils:

- United Soybean Board Association
- Independent Lubricant Manufacturers Association
- American Soybean Association
- National Association of Wheat Growers
- National Corn Growers Association

Commercially Available Products Identified: Of the companies identified, 4 Turbine Drip Oils 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 3 Turbine Drip Oils.

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

- ASTM International D2619 Standard Test Method for Hydrolytic Stability of Hydraulic Fluids (Beverage Bottle Method)
- ASTM International D2983 Standard Test Method for Low-Temperature Viscosity of Lubricants Measured by Brookfield Viscometer
- ASTM International D5864 Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components
- ASTM International D665 Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the presence of Water
- ASTM International D892 Standard Test Method for Foaming Characteristics of Lubricating Oils
- International Organization for Standardization ISO 32 Oil Viscosity Grade
- International Organization for Standardization ISO 46 Oil Viscosity Grade

- Society of Automotive Engineers SAE 10W20 J300 Engine Oil Viscosity Classification
- Society of Automotive Engineers SAE 10W30 J300 Engine Oil Viscosity Classification

Samples Tested for Biobased Content: 3 samples of Turbine Drip Oils have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

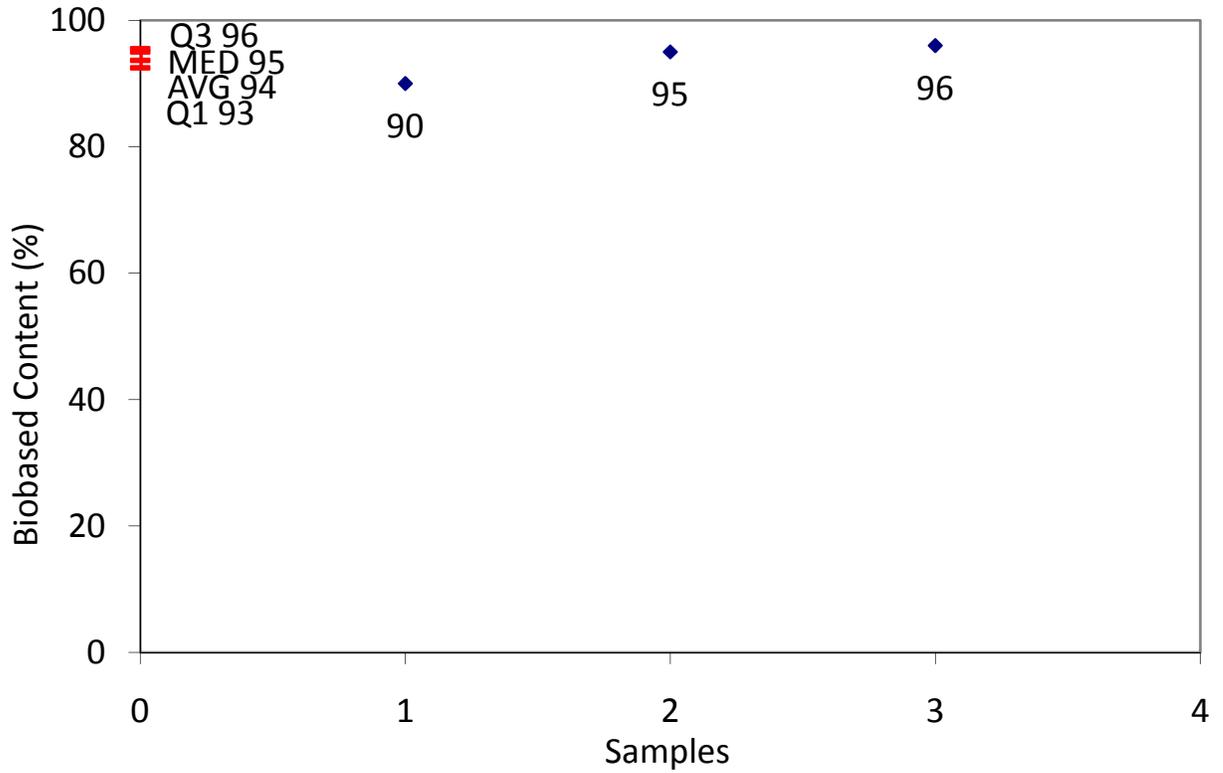
Biobased Content Data: Results from biobased content testing of Turbine Drip Oils indicate a range of content percentages from 90% minimum to 96% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 1 Turbine Drip Oil has been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle cost of the submitted Erosion Control Product is \$20.38 per usage unit. The environmental score is 0.0682. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Turbine Drip Oils

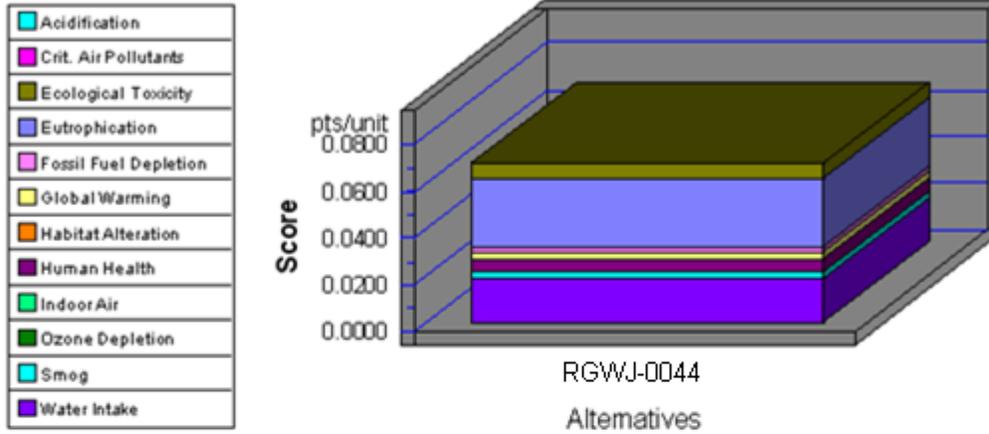


	Company	Product	C14	BEES
1	DRL2	DRL2-0005	90	
2	JCX4	JCX4-0001	95	
3	RGWJ	RGWJ-0044	96	Yes

Appendix B - BEES Analysis Results

Functional Unit: 1 gallon of product

Environmental Performance

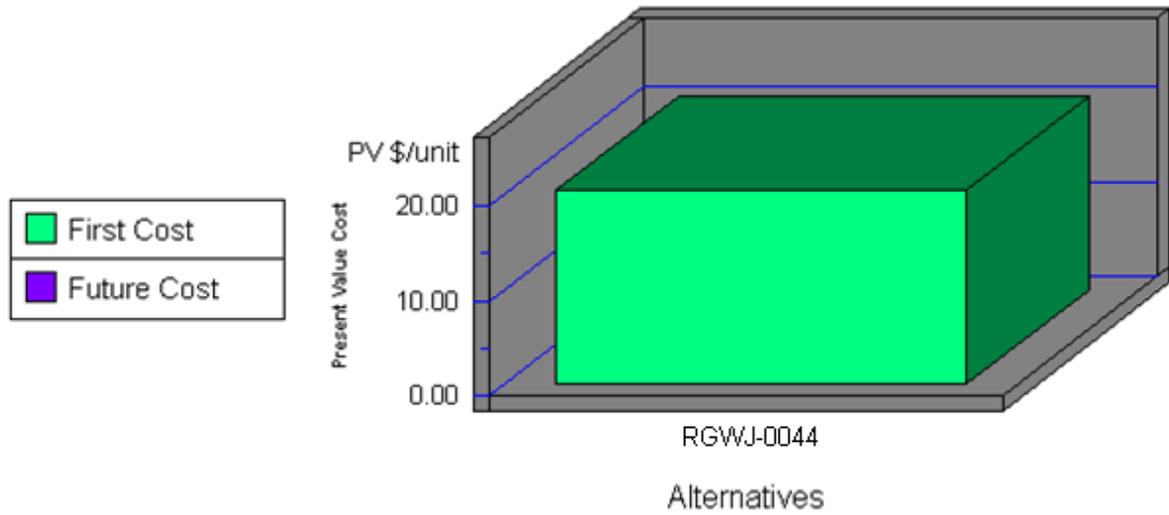


Note: Lower values are better

Category	RGWJ-0044
Acidification--3%	0.0000
Crit. Air Pollutants--9%	0.0003
Ecolog. Toxicity--7%	0.0063
Eutrophication--6%	0.0289
Fossil Fuel Depl.--10%	0.0020
Global Warming--29%	0.0032
Habitat Alteration--6%	0.0000
Human Health--13%	0.0054
Indoor Air--3%	0.0000
Ozone Depletion--2%	0.0000
Smog--4%	0.0030
Water Intake--8%	0.0191
Sum	0.0682

Turbine Drip Oil		
Impacts	Units	RGWJ-0044
Acidification	millimoles H ⁺ equivalents	6.64E+03
Criteria Air Pollutants	microDALYs	5.61E-01
Ecotoxicity	g 2,4-D equivalents	7.30E+01
Eutrophication	g N equivalents	9.26E+01
Fossil Fuel Depletion	MJ surplus energy	6.91E+00
Global Warming	g CO ₂ equivalents	2.86E+03
Habitat Alteration	T&E count	0.00E+00
Human Health--Cancer	g C ₆ H ₆ equivalents	3.48E+00
Human Health--NonCancer	g C ₇ H ₈ equivalents	3.28E+03
Indoor Air Quality	g TVOCs	0.00E+00
Ozone Depletion	g CFC-11 equivalents	1.57E-07
Smog	g NO _x equivalents	1.12E+02
Water Intake	liters of water	1.27E+03
Functional Unit	-----	1 gallon of product
<p>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.</p>		

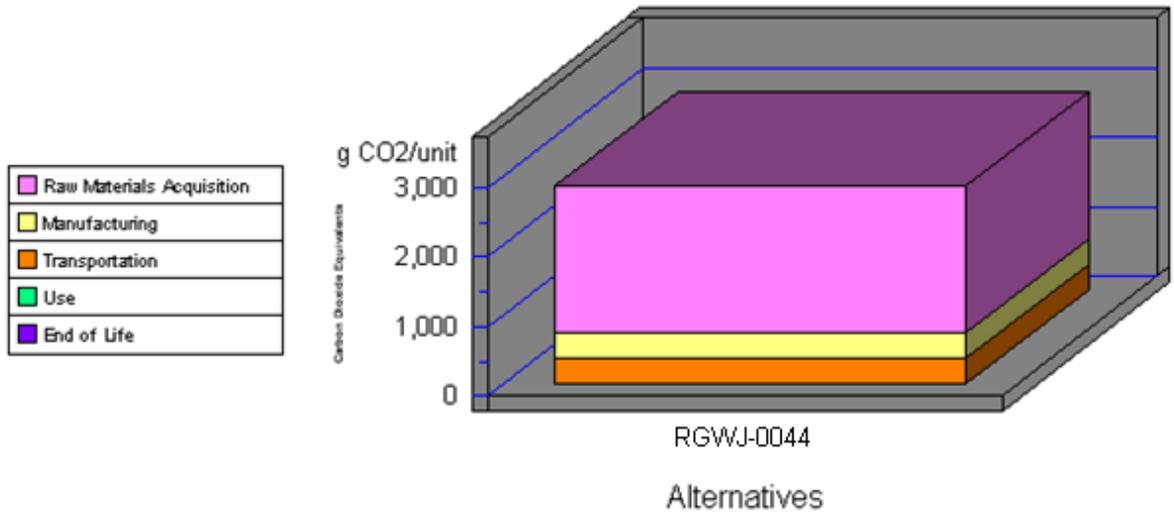
Economic Performance*



Category	RGWJ-0044
First Cost	20.38
Future Cost-- 3.0%	0.00
Sum	20.38

*This is a consumable product. Therefore, future costs are not calculated.

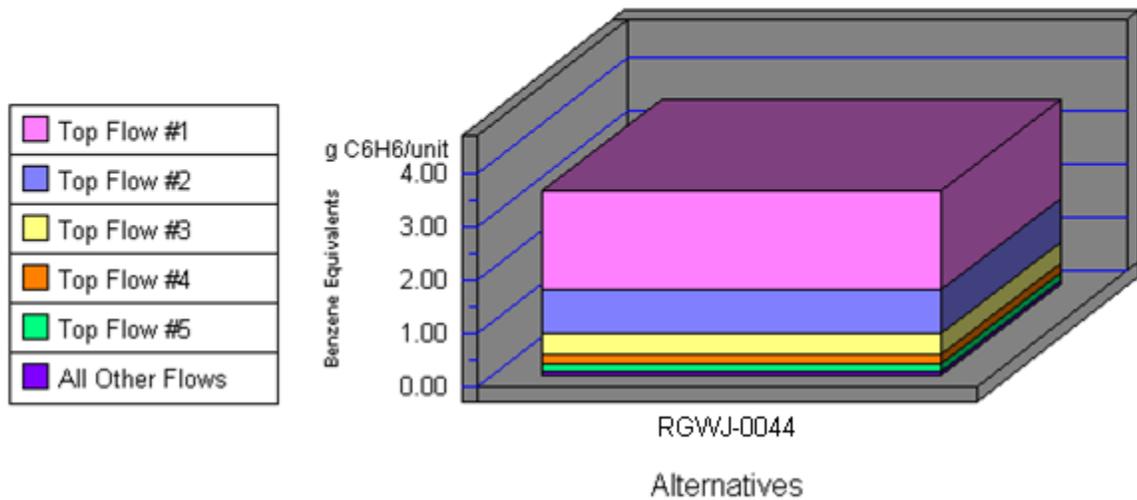
Global Warming by Life-Cycle Stage



Note: Lower values are better

Category	RGWJ-0044
1. Raw Materials	2131
2. Manufacturing	347
3. Transportation	387
4. Use	0
5. End of Life	0
Sum	2865

Human Health Cancer by Sorted Flows*

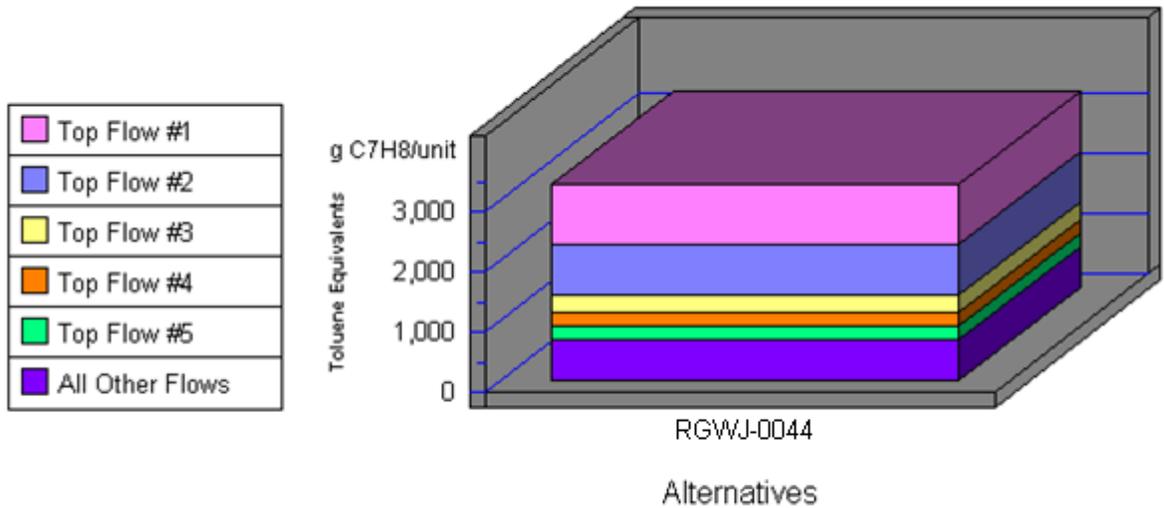


Note: Lower values are better

Category	RGWJ-0044
Cancer--(w) Arsenic (As3+, As5+)	1.84
Cancer--(w) Phenol (C6H5OH)	0.83
Cancer--(a) Benzo(a)pyrene (C20)	0.40
Cancer--(a) Dioxins (unspecifie)	0.19
Cancer--(a) Arsenic (As)	0.13
All Others	0.09
Sum	3.48

*Sorted by five topmost flows for worst-scoring product

Human Health Noncancer by Sorted Flows*



Note: Lower values are better

Category	RGWJ-0044
Noncancer--(w) Mercury (Hg+, Hg)	1,019.64
Noncancer--(a) Mercury (Hg)	838.46
Noncancer--(w) Barium (Ba++)	272.06
Noncancer--(a) Dioxins (unspeci)	239.90
Noncancer--(w) Lead (Pb++, Pb4+)	223.89
All Others	685.02
Sum	3,278.97

*Sorted by five topmost flows for worst-scoring product

CHAPTER 2.0

ITEM DESCRIPTIONS AND BIOBASED CONTENTS

The tables in this chapter present detailed description of the products identified in each of the Round 6 items. Included in these tables are the biobased contents of the products tested. These products are presented first, in descending order of their tested biobased contents.

Item Description Background
Round 6

8/26/2009

Item	Company	Product	Description	Biobased Content	Comment
Disposable Tableware	D3P3	D3P3-0026	Our new materials are biobased, moisture resistant and can be used in food service items as well as general packaging. Competitive in cost and performance, PPM (Primary Packaging Material) technology is a commercially viable solution for manufactures and consumers alike. Available in small, narrow, mid-size, large, extra large, deep draw, buffet, 5-compartment, mushroom, or crab shell sizes.	100	
	D3P3	D3P3-0030	Edible formulation of disposable tableware.	100	
	V865	V865-0022	We have a selection of tree-free biodegradable plates made from bagasse, a sugarcane byproduct. These premium strength plates can be disposed of in compost bins and are priced better than their paper counterparts. Available in 7, 9, or 10 inches, or a 10	100	
	V865	V865-0023	These bowls are made from bagasse, a sugarcane byproduct. These premium strength bowls can be disposed of in compost bins and are priced better than their paper counterparts.	100	
	XPR6	XPR6-0006	9" Biodegradable Flat Dinner Plate	100	
	IF3W	IF3W-0006	These clear, compostable cups are idea for large venues and events. They are not suitable for hot food service or microwave use. Available in 3, 8, 12, or 18 oz. cold cups or 9-12, 12-14, 16-18, 20, or 24 oz. squat cups. Lids are also available.	98	
	OLX2	OLX2-0001	Our products are 100% Bio Based made from annual renewable resources: sugarcane. For prepared meals, use these trays & bowls in conjunction with our heat seal-able films for a 100% biobased package that is microwave able and cost effective.	98	
	PXO9	PXO9-0005	Cup composed of a biodegradable resin made from corn and potato starch. This biodegradable resin actually qualifies as a "compostable" plastic, which means it composts more readily than "biodegradable" bioplastic. It was created as a cost competitive alternative to plastic, and it can actually be processed with conventional plastic equipment.	92	
	PXO9	PXO9-0001	Plate composed of a biodegradable resin made from corn and potato starch. This biodegradable resin actually qualifies as a "compostable" plastic, which means it composts more readily than "biodegradable" bioplastic. It was created as a cost competitive alternative to plastic, and it can actually be processed with conventional plastic equipment.	90	

	HPZG	HPZG-0003	These plates and bowls are made primarily from limestone and potato starch, and serve as an environmentally preferable alternative to traditional food service disposable packaging. The plates and bowls are strong and sturdy, microwaveable, and cut, puncture, grease and stain resistant. They are great for use with a variety of hot and cold foods.	75	
	OLX2	OLX2-0017	This hot cup lid fit most paper cups, sizes 12, 16, 20 once. Certified GMO Free, bio based and heat stable to 350f. The hot cup lid is 100% biodegradable and made from renewable resources potatoes starch. The hot cup lid offers an environmental alternative to petroleum based hot cup lids at a very competitive price. It gives brand owners an environmental stewardship and impact they expect. Fully compost able and submitted for ASTM certification for composting and US navy for marine degradation. This product is viewed by microbes as organic mater which they eat and digest into carbon dioxide and water.	32	
	D3P3	D3P3-0016	Our new materials are biobased, moisture resistant and can be used in food service items as well as general packaging. Competitive in cost and performance, PPM (Primary Packaging Material) technology is a commercially viable solution for manufactures and consumers alike. Available in small, narrow, mid-size, large, extra large, deep draw, buffet, 5-compartment, mushroom, or crab shell sizes.		
	D3P3	D3P3-0027	Our new materials are biobased, moisture resistant and can be used in food service items as well as general packaging. Competitive in cost and performance, PPM (Primary Packaging Material) technology is a commercially viable solution for manufactures and consumers alike. Available in small, narrow, mid-size, large, extra large, deep draw, buffet, 5-compartment, mushroom, or crab shell sizes.		
	D3P3	D3P3-0028	Our new materials are biobased, moisture resistant and can be used in food service items as well as general packaging. Competitive in cost and performance, PPM (Primary Packaging Material) technology is a commercially viable solution for manufactures and consumers alike. Available in small, narrow, mid-size, large, extra large, deep draw, buffet, 5-compartment, mushroom, or crab shell sizes.		
	DBEI	DBEI-0002	This product is made from sugar cane and reed pulp and is biodegradable and compostable as well as heat-tolerant. Available in 5, 6, 7, 8, 9, and 10 inches of several styles and shapes.		
	DBEI	DBEI-0005	Three different sizes available.		
	DBEI	DBEI-0006	This product is made from sugar cane and reed pulp and is biodegradable and compostable as well as heat-tolerant. Many sizes and styles available.		
	E2BZ	E2BZ-0001	These cups are manufactured from PLA and are 100% compostable, with a crystal clear slanted rib design. Available in 7, 10, 20, and 24 oz. clear cups, 9 oz. clear old-fashioned cups, and 12-14 or 16-18 oz. clear squat cups. Lids available.		
	H7W2	H7W2-0001	Biodegradable & Compostable clear cup Case of 100 10oz cup with our logo. Made of renewable resources		

H7W2	H7W2-0002	Biodegradable & Compostable 7" plates made with recycled paper + biodegradable film.		
H7W2	H7W2-003	Biodegradable compostable plate Case of 100 plates 9".		
H7W2	H7W2-0005	Biodegradable & Compostable Cup 19oz Case of 50 cups Completely biodegradable. Printed with our logo. Made of recycled paper, biodegradable film & bio-ink.		
H7W2	H7W2-0014	An outdoor environmental friendly picnic set with cups, forks, spoons, knives, napkins, a fruit bio-container & a trash bag.		
HC1A	HC1A-0001	100% biodegradable and compostable bowls made from sugar cane fiber.		
HC1A	HC1A-0002	100% biodegradable and compostable plate made from sugar cane fiber		
HC1A	HC1A-0004	100% biodegradable and compostable serving trays made from sugar cane		
HPZG	HPZG-0004	These plates and bowls are made primarily from limestone and potato starch, and serve as an environmentally preferable alternative to traditional food service disposable packaging. The plates and bowls are strong and sturdy, microwaveable, and cut, puncture, grease and stain resistant. They are great for use with a variety of hot and cold foods.		
IF3W	IF3W-0004	Disposable plates made from PLA features: Made 100% from corn, Ideal for venues or events, Compostable, Strong and rigid for holding lots of food, Available in 6, 8, or 10 inches.		
K95M	K95M-0001	16oz, clear, plastic, cold drink cup. (1000/cs)		
K95M	K95M-0002			
K95M	K95M-0003	20oz, clear, plastic, cold drink cup. (1000/cs)		
K95M	K95M-0004			
K95M	K95M-0005			
M6TS	M6TS-0002	Our food service ware is made from vegetable-based ingredients, which contain zero or negligible amounts of petrochemicals. When used in a proper composting environment, they will break down into carbon dioxide, water and natural minerals in a short period. We carry a full line of these products for your event or organization, and new products are being added regularly. Examples include: * Plates & Bowls * Cutlery/Flatware * Hot & Cold Cups and Lids * Sample Cups * Straws * Napkins & Wraps * "To-Go" Containers * Food & Sandwich Bags		
MX3Z	MX3Z-0001	Available in 7, 9, 10, 12, 16, 20, and 24 oz. Lids available as well.		
MX3Z	MX3Z-0002	Available in 2 or 3 oz. with lids.		
MX3Z	MX3Z-0004	Available in 2, 4, 8, or 12 oz.		
MX3Z	MX3Z-0005	Available in 6 oz. flat bottom bowl, and 11.5 oz. and 24 oz. bowls.		

MX3Z	MX3Z-0007	Available in 3 inch dipping plate, 6, 9, or 10 inch pulp plate, 10 inch 3-compartment plate, or 7 inch pulp plate-primeware.		
MX3Z	MX3Z-0009	Available in 9 or 10 inch natural unbleached plates, 10 inch 3-compartment natural plate, and 1 and 3-compartment natural hinged trays.		
NN16	NN16-0001	Available in 6 inch plate with rippled edge, 7, 9, or 10 inch plates, 10 inch 3-compartment plates, or 10x12 inch jumbo platter.		
NN16	NN16-0002	Available in 7, 12, and 16 oz. bowls with lids.		
NN16	NN16-0003	Available in 12, 16, and 32 oz. with lids.		
NN16	NN16-0005	Available in 4, 8, or 12 oz.		
NN16	NN16-0007	Available in 9, 10, 12-14, 16-18, and 20 oz. cups with lips.		
NN16	NN16-0009	Available in 6 inch or 8 inch clear, and 8 inch pink.		
OLX2	OLX2-0009	This product is an excellent, cost effective replacement for ceramic, glass and melamine reusable dishware. This product has a rich stoneware-like appearance. When used in place of some types of ceramic tableware, potential lead poisoning concerns are eliminated.		
OLX2	OLX2-0011	This product and lids are all one substrate made from annual renewable resources. GMO, Paper and petroleum free this product is made from sugarcane. NOTABLE FEATURES: * Heat stable for hot coffee & beverages. This product and lid will not absorb the hot moisture and will not leak. * Superior insulation value eliminates the need for sleeve or a second cup. Hot beverages stay cool to the touch. * Printing is available with soy-based inks to ensure compost ability.		
OLX2	OLX2-0013	This product a clear cup for COLD beverages that are 100% biodegradable and compost able. This product has a high level of clarity and can be printed with water-based inks as not to affect the compost ability or biodegradability of the cup. The cups are made from corn, a renewable natural resource.		
S96L	S96L-0008	Biodegradable. Made from corn and potato starches. Available in 400ml (12-13oz), 10oz, 12oz and 16oz.		
S96L	S96L-0010	Biodegradable. Made from corn and potato starches. available in clear PLA 12/20oz cup lids, 16/24 oz cups lids, 9/10oz cup lids. straws are 8.5" long and 1/4" in diameter.		
S96L	S96L-0021	biodegradable plates. available in 10" 3 compartment round, 9"X6.5" single compartment oval, 10" single compartment round, 7" Single compartment round, and 9" single compartment round.		
S96L	S96L-0022	Biodegradable zero waste serving tray. available in 10"X8.5"X1" 5 compartment and 7"X5"X1" single compartment		

S96L	S96L-0023	a zero waste biodegradable fiber sleeve used to insulate coffee cups. available in 12-20oz and 8-10oz sizes.		
S96L	S96L-0025	biodegradable clear plastic like cups. available in 3oz cold cup, 3oz sample cold cup, 9oz cold cup, 10oz cold cup, 12oz cold cup, 16oz cold cup, 20oz cold cup, and 24oz cold cup.		
S96L	S96L-0028	fully biodegradable coated paper plate. available in 9" diameter.		
S9I7	S9I7-0008	Wow! These are very cool cups for hot drinks! Made from sugar cane stalks, these cups are molded so they are very strong with a nice texture. That no trees were harmed to make them is even better. Bagasse is a readily renewable resource - it's sugar cane stalk! The quality of these super-sturdy cups is astounding for the price. That no trees were harmed to make them is even better. Unfortunately, at this time there are NO LIDS for these cups.		
S9I7	S9I7-0010	These bowls are made from bagasse, a readily renewable resource - it's sugar cane stalk! The quality of these super-sturdy bowls is astounding for the price. That no trees were harmed to make them is even better. This product is one of the hottest food service items on the market and we're lucky to be able to bring them to you at such an amazing price. There are two styles available in these bowls. The bowls listed here have a thin brim and a lid that fits over top of the bowl. We also have soup bowls with wider brims and lids that click into the top of the bowl. The latter are better for hot liquids.		
S9I7	S9I7-0012	Real nice straws made out of PLA (that's corn). These straws are made with 100% biodegradable resins, consisting of renewable resources. 10 packs of 400 each for a total of 4,000 straws at 6.25" long or 8" long. Corn and potato starch are the most frequently used components of biodegradable resins. We explore the use of all biodegradable resins, as long as they pass the world recognized tests of biodegradability.		
UU3U	UU3U-0006	A great alternative to the tree-based coasters in the world. For best use, use for hot liquids and keep dry.		
V865	V865-0018	This product is a cup made from chlorine free paper. They are 100% biodegradable! FDA approved, they are the most environmentally friendly cups on the market and make excellent paper hot cups. You can feel good about using these disposable		
V865	V865-0019	These compostable cups are clear and are made from an annually renewable resource – corn! With the same look and feel as clear PET cups, these compostable cups contain PLA, an environmentally friendly alternative to PET. The cups are odorless,		
XPR6	XPR6-0007	6" Biodegradable Flat Dessert Plate		
XPR6	XPR6-0008	9" Biodegradable 3 Compartment Plate, disposable		

	XWK4	XWK4-0001	Products made from recycled sugar beets. After the sugar beet is harvested, the stalks from the plant that would normally be thrown away are used to make these dishes. It is both a biodegradable and recycled product!		
Expanded Polystyrene Foam Recycling Products	X3E5	X3E5-0010	This foam dissolution fluid is the first non-toxic, biodegradable, environmentally friendly expanded polystyrene foam (EPS) remover available. It is formulated to effectively dissolve Styrofoam (EPS) in all temperatures.	93	
	IOB1	IOB1-0001	The innovative, easy, safe, cost effective and environmentally friendly approach to the problem of polystyrene foam waste. reduces all polystyrene, expanded or not.		
	SEQ6	SEQ6-0009	This foam dissolution fluid is the first non-toxic, biodegradable, environmentally friendly expanded polystyrene foam (EPS) remover available. It is formulated to effectively dissolve Styrofoam (EPS) in all temperatures.		
Heat Transfer Fluids	VHIC	VHIC-0003	99% biobased. Heat transfer fluid derived from corn. This is suggested for use in HVAC, thermal energy storage, hydronic heating, solar, ground source heat Pumps, or other closed-loop process cooling or heating, in temperatures ranging from -20F to 250F.	99	
	R1LM	R1LM-0001	Personal cooling device designed to protect personnel working in hot environments or wearing protective outerwear. Heavy duty fire retardant Banox FR-3. Several Outer shell or concealable configurations. This product is made from high-technology processed fats and oils - even classified as "food grade" by the FDA. Think of it as "second generation" phase change material for the 21st century. All other phase change material (PCM) cooling vests use old-style petroleum byproducts like hexadecane, which contain hazardous chemicals.	92	
	VHIC	VHIC-0002	Our heat transfer fluid extends low-end operating ranges far beyond the boundaries of most competitive brands. Ultra-low temperature performance, biodegradable. This is used for low-end operating ranges, from -112 C to 163 C, in closed looped systems only, for example in HVAC, thermal energy storage, hydronic heating, solar, ground source heat Pumps, or other closed-loop process cooling or heating .	37	
	QR6P	QR6P-0001	Antifreeze containing a glycol refined from corn and sugar. The main constituent is 1,3 propanediol (PDO). It is environmentally friendly and requires 40 percent less energy to manufacture than its petroleum-based counterpart.		
	X45L	X45L-0001	This prediluted coolant is a totally new and innovative heavy duty engine coolant made with glycerin, a raw material derived from renewable energy sources, such as a by-product of biodiesel manufacturing. Glycerin is used in place of ethylene glycol (EG) or propylene glycol (PG), ensuring environmental responsibility with green products that continue to provide superior engine protection.		
	M2U2	M2U2-0009	This heat transfer fluid contains specially formulated packages of industrial inhibitors that help prevent corrosion. Because propylene glycol fluids have low acute oral toxicity, these fluids are often used in applications where contact with food or beverage products could occur.		

Ink Removers and Cleaners	B9D5	B9D5-0004	In use, reduces VOC's by 80% versus most liquid cleaners. A grit-free cleaner used for quick color changes. Paste away quickly penetrates roller pores to pull glaze and dried ink from deep within the rollers. Handles like ink, easy to apply & control.	85	Same product as WP11-0001
	WP11	WP11-0001	A grit-free cleaner used for quick color changes. Paste away quickly penetrates roller pores to pull glaze and dried ink from deep within the rollers. Handles like ink, easy to apply & control.	85	Same product as B9D5-0004
	WH7E	WH7E-0001	Liquid cleaner for UV, EB, Heatset, Coldset, co-cure, and sheet-fed ink. Used for ink roller train, blankets, impression and transfer cylinders. Zero VOC's, Greater than 200 deg f. open cup flash. Product does not contain water, surfactants, petroleum distillates, Federal 313 Listed chemicals, HAP's Listed chemicals. Product use is approximately 30% less than normal wash up chemistry. The product contains over 90% renewable esters from American Farms. This product is not designed for use in the dampening system rollers. Product NFPA = 1 flammability 1 health 0 instability Product will not swell EPDM or other roller-blanket compounds.	82	
	WP11	WP11-0004	Deglaze will aggressively remove glaze from rollers and blankets while restoring rubber surfaces to like-new condition.	5	
	A3N2	A3N2-0003	Soy-based ink remover. No VOCs. Specially formulated for all our soy-based inks.		
	B961	B961-0001	Soy-based printing ink cleaner		
	B961	B961-0002	Soy-based textile ink cleaner		
	H4RZ	H4RZ-0001	Our starch spray powders are designed to dispense from electronic and conventional spray systems to prevent offset in the printing industry.		
	J4FB	J4FB-0008	Press and blanket wash. This product is an environmentally friendly cleaner, but tough on ink. Cheaper to use than traditional press wash.		Same product as W64A-0002
	W64A	W64A-0002	soy-based press and blanket wash.		Same product as J4FB-0008

	Y8EG	Y8EG-0001	Safe, easy-to-use fluid ink haze remover. Removes ink haze, scuz and ghost images. Degreases at the same time. Will not burn skin. No fumes.		
	Y8EG	Y8EG-0011	Safe, gel formula ink haze remover. Ideal for tough jobs and large screens. No fumes, noncaustic and will not burn skin. Made from domestically grown soybeans. A safe, readily biodegradable solvent.		
	Y8EG	Y8EG-0014	Reclaimer and degreaser. Removes all types of emulsions. Strongest emulsion remover available. Fast-acting, thick and ready-to-use. Readily biodegradable, recyclable and renewable.		
	Y8EG	Y8EG-0015	Cleans the full array of inks. Great for recycling tanks. Non-evaporative. Ideal for wash tanks. Apply to screen, and ink will not set up. Readily biodegradable, recyclable and renewable. Natural odor.		
	Y8EG	Y8EG-0016	Safe, easy-to-use fluid ink haze remover. Removes ink haze, scuz and ghost images. Degreases at the same time. Will not burn skin. No fumes. Readily biodegradable.		
	Y8EG	Y8EG-0019	This products reduces the current two step screen reclaiming process into one simple, easy step. No longer is it necessary to first wash plastisol ink off the screen and then use a reclaiming solution to remove the emulsion. With this products ink and emulsion is removed in one step that takes less than 5 minutes. This products is a low odor, nonflammable, bio-degradable, non-toxic solution that saves times and money.		
	Y8EG	Y8EG-0023	Great for quick on-press color changes. A safe, readily biodegradable solvent.		
Mulch and Compost	P1RE	P1RE-0002	A 50-50 mix of two composts: yard waste and manure.	100	
	P1RE	P1RE-0004	This nutrient-rich blend of 80% leaves and 20% grass/tree limbs is passed through a 3/8" screen.	100	
	U1V8	U1V8-0001	All natural fertilizer compost made from blend of dairy and poultry manures and other materials.	100	
	Z744	Z744-0010	Mulch containing recycled paper, marker dye, and ag waste products.	100	
	RX8H	RX8H-0001	Made from aspen bark, lobster shells, crab shells and other materials.	100	

TR8G	TR8G-0001	These products are produced in Cedar Rapids, IA from yard waste, leaves, and other organic materials generated by Linn County residents and industries.	98	
X2J2	X2J2-0004	Composted dairy manure and the accompanying bedding material. Excellent as either a top dressing material or as a soil amendment.	98	
X2J2	X2J2-0001	Produced utilizing a combination of several feedstocks, including brewer's waste, wood wastes of various types, biosolids, and at times, treatment plant residuals. Meets EPA 40 CFR 503-13 requirements.		
X2J2	X2J2-0002	Produced using feedstocks of primarily limb waste, leaves, grass, and beer. This fine textured product contains some woody particles. A stable organic matter, it is a good source of nitrogen, phosphorus, potassium, sulfur and other nutrients essential for plant growth.		
X2J2	X2J2-0003	This fine-textured material is made from our Evergreen compost, which has been refined using a 1/4" screening process.		
X2J2	X2J2-0005	Produced from poultry (turkey) litter and bedding materials. Evergreen provides nutrients and a healthy population of naturally occurring soil organisms, which revitalizes the existing microbial population in the soil. It contains significant quantities of organic matter necessary for water retention and provides food for the soil organisms, which in turn "feeds the plants." It helps return many properties to the soil which have been lost over time and with use.		
X2J2	X2J2-0006	Compost produced from manure provided by animals of the Denver Zoo		
X2J2	X2J2-0007	Composted manure and yard waste.		
T5F9	T5F9-0001	This product is a blend of nitrogenous and carbonaceous materials which may include biosolids, gelatin and food processing residuals, sawdust, woodchips and leaf and yard waste. It meets EPA "Exceptional Quality" standards.		
I657	I657-0001	Brown mulch made from wood. Used for landscaping and gardening, helps to keep heat off soil and help soil retain its moisture.		
I657	I657-0002	Brown mulch made from cedar. Used for landscaping and gardening, helps to keep heat off soil and help soil retain its moisture. Available for delivery and pickup.		
I657	I657-0003	ADA Certified for play areas and made from wood.		
I657	I657-0004	Can be used for play areas and Garden beds. Made entirely from tree bark.		
I657	I657-0005	Brown mulch made from tree bark. Used for landscaping and gardening, helps to keep heat off soil and help soil retain its moisture.		
B6YO	B6YO-0001	Mushroom compost is not made from ground up mushrooms as you might think. It's the soil used to grow mushrooms. Since mushrooms are such a delicate crop, the soil is used only once. Then we compost and bag it for home gardeners. This rich, soil-building medium is perfect for vegetable and flower gardens, hanging baskets,		

			shrubs and trees. Mix it with your planting soil or native soil or as a top-dressing on potted plants of all types. (Not available in all areas.)		
IXE5	IXE5-0001		Our Compost is made from locally recycled garden prunings and vegetable trimmings. Ideal for soil amending and mulching, our Compost improves the soil by adding organic matter, microbes, nutrients and trace minerals. Our Compost is certified organic and approved under the Washington State Department of Agriculture Food Program		
T37S	T37S-0002		Helps rebuild soil structure, helps restore and revive soil fertility, helps soil life for healthier soil, suppress weed growth, prevents soil erosion		
T38O	T38O-0002		Our compost has not just met but set the standards for premium compost. Made from stall bedding and converted, using microbial activity into premium compost, it's the best way to put life into the ground. Thoroughbred Compost™ turns dirt into soil.		
GN0U	GN0U-0001		A premium quality landscaping mulch made from shredded hardwood.		
GN0U	GN0U-0002		An all natural and organic material which contains fully processed, cycled and composted pin shavings, horse manure, and alfalfa hay		
GN0U	GN0U-0003		Finely screened this material pulverizes and aerates the compost removes clods and other debris. Made with horse manure, alfalfa, and pine shavings.		
GN0U	GN0U-0004		A finely screened blend containing 45% Organic Compost 30% Dark Sandy Loam soil, and 25% Coarse Grain Washed Sand (Sharp Sand)		
GN0U	GN0U-0005		Contains 60% compost and 40% topsoil		
GN0U	GN0U-0006		A premium quality landscaping mulch made from pine bark.		
YMV6	YMV6-0001		This product is made entirely of a corn starch based raw material, 100% biodegradable. The master batch used for coloring is also made of this material. There are no toxic residues in the ground and savings on pick up and land fill costs.		
G52R	G52R-0001		A premium "finished compost" made from organic materials. The materials have decomposed for a minimum of two years. Contains pile-grass clippings, brush, wood chips, shredded paper and straw.		
XVF4	XVF4-0001		A blend of composted manure and organic humus for transplanting and topdressing		
HQ50	HQ50-0001		Orange in color, medium texture. Whole Cypress logs ground up. All natural.		
HQ50	HQ50-0002		Dark Brown in color. All natural. Whole cedar logs ground up. Great for animal beds.		
HQ50	HQ50-0003		A special blend of hardwood gold mulch and mushroom compost.		
HQ50	HQ50-0004		Twice shredded and processed hardwood mulch, very dark brown color.		
HQ50	HQ50-0005		Mulch made from shredded pines that is blonde in color, medium in texture, and clean and soft.		

HQ50	HQ50-0006	Mulch made with rosewood that is red in color.		
HQ50	HQ50-0007	Triple shredded, very fine hardwood mulch, aged over 6 months, almost black in color.		
HQ50	HQ50-0008	All red oak bark, twice shredded, auburn in color		
HQ50	HQ50-0009	Golden orange colored mulch, virgin pine trees, double shredded		
HQ50	HQ50-0010	Various types of whole trees ground up into wood chips.		
HQ50	HQ50-0011	All wood chips, no bark or dirt		
HQ50	HQ50-0012	Leaves that have been aged and coarsely ground.		
HQ50	HQ50-0013	Virgin shredded pine mulch, great for play areas and swing sets. No pallets; No nails.		
HQ50	HQ50-0014	Mulch made from rustic pine nuggets that is red in color.		
HQ50	HQ50-0015	Organic compost made from mushrooms, sterilized horse manure, sphagnum peat, lime and gypsum.		
HQ50	HQ50-0016	Shredded once hardwood mulch, available aged or fresh, coarse texture.		
HQ50	HQ50-0017	Mulch made with ravenwood that is black in color.		
HQ50	HQ50-0018	Our 3 colored mulches are made from shredded pine. No pallets; no nails. All natural.		
ME74	ME74-0021	Blend of composted lobster, shrimp, crab, salmon and cow manure. Ideal for beds. MOFGA		
ME74	ME74-0022	75% composted salmon, mussels and wild blueberries with 25% sphagnum moss peat. Perfect for mulching trees and shrubs, top-dressing lawns. MOFGA		
ME74	ME74-0023	A blend of dairy and poultry manure aerobically composted with biodynamic compost starter. 60% organic matter and all the minerals and nutrients associated with manure. Use as a potting mix in a ratio of one part Kompost to 6 parts peat. MOFGA NEW!		
ME74	ME74-0024	A blend of composted manure and plant materials, sphagnum peat, protein, black rock phosphate, gypsum, vermiculite, kelp and langbeinite (sul-po-mag). Improves soil structure, provides a generous dose of slowly released nutrients and has high microbial activity. Rejuvenate tired plants by spreading a shallow layer on the top of the container and watering in. Add a few tablespoons in the bottom of a transplant hole to reduce transplant shock. Side-dressing greens after early cuttings will stimulate new growth. Improve your potting soils with 4-8 tablespoons per quart. Will not burn. Nat'l List		
V6C4	V6C4-0001	Pasteurized weed-free blend of horse, cow, and turkey manure with sawdust, rice hulls, and cedar flakes.		
V6C4	V6C4-0002	Blend of compost, greedsand, lava sand, cornmeal, and dry molasses.		

QT8K	QT8K-0002	Premium mulch products comprised of 100% organic materials harvested from selected hardwood trees. Only the highest quality wood fibers and bark are recycled and composted to make these superior mulch products. This Mulch consists of the same high-quality materials as the hardwood mulch, but it has been specially dyed with environmentally friendly colorings to provide a vibrant, long lasting appearance. Available in Red, Gold and Black. No pressure treated (CCA) wood, no pallets or plywood, and no non-organic additives and chemicals are used.		
QT8K	QT8K-0003	Premium mulch products comprised of 100% organic materials harvested from selected hardwood trees. Only the highest quality wood fibers and bark are recycled and composted to make these superior mulch products. No pressure treated (CCA) wood, no pallets or plywood, and no non-organic additives and chemicals are used. Cedar Mulch is made of all natural cedar bark blends. This mulch is finely shredded and has a beautiful golden brown color.		
QT8K	QT8K-0005	A premium grade of naturally composted organic materials finely screened and blended to produce a soil amendment that is highly beneficial for enriching all soils. A premium grade of naturally composted materials, finely screened and blended to produce a soil amendment that is highly beneficial for conditioning all types of soils. Compost can be used to enrich garden beds before planting annuals, ground covers, shrubs and trees.		
QT8K	QT8K-0006	A superior blend of nutrient-rich organic compost and finely screened mineral soil. This horticultural-grade topsoil promotes healthy vigorous plant growth and improves soil structure and aeration. Applications include: planting of new vegetable, bulbs and flower gardens; germination of grass seed; or a topcoat for existing lawns.		
QT8K	QT8K-0007	A professional mix of horticultural grade compost, peat moss and mineral soils that provide a balanced and lightweight soil. Used for the establishment of container plants, annuals, perennials, bulbs, shrubs and trees.		
QT8K	QT8K-0008	Premium mulch products comprised of 100% organic materials harvested from selected hardwood trees. Only the highest quality wood fibers and bark are recycled and composted to make these superior mulch products. Hardwood Mulch consists of a blend of premium barks from a variety of hardwood trees. This finely shredded mulch is a rich chocolate color. No pressure treated (CCA) wood, no pallets or plywood, and no non-organic additives and chemicals are used.		
QT8K	QT8K-0009	Composted cow manure conditioned with screened compost humus to provide a 100% organic, high-nutrient soil conditioner that is essential in maintaining healthy soil. Manure helps improve soil structure, aeration, soil moisture-holding capacity and water infiltration.		
B9EU	B9EU-0001	This cypress-based covers 2 cubic foot gardening and landscape mulches. This product is bagged.		
B9EU	B9EU-0002	This is a pine-based mulch for landscaping.		

B9EU	B9EU-0003	This is a pine bark-based, 3 cubic foot gardening and landscape mulch.		
B9EU	B9EU-0004	This is a hardwood-based mulch for landscaping.		
B9EU	B9EU-0005	These are pine bark nuggets. This cover 2 cubic foot gardening and landscape mulches.		
B9EU	B9EU-0006	2 cubic foot gardening and landscape mulches. This product is bagged.		
B9EU	B9EU-0007	This pine bark-based mulch for landscaping.		
B9EU	B9EU-0008	This is a cedar-based, 3 cubic foot gardening and landscape mulch.		
B9EU	B9EU-0009	This is a cypress-based, 3 cubic foot gardening and landscape mulch.		
B9EU	B9EU-0010	This is a pine bark-based, 3 cubic foot gardening and landscape mulch.		
B9EU	B9EU-0011	This is a pine bark-based, 3 cubic foot gardening and landscape mulch.		
B9EU	B9EU-0012	This is a pine bark, 2 cubic foot mulch for landscape. This product is bagged.		
B9EU	B9EU-0013	Pine-based, 2 cubic foot gardening and landscape mulches. This product is bagged.		
B9EU	B9EU-0014	2 cubic foot gardening and landscape mulches. This product is bagged.		
B9EU	B9EU-0015	This is a hardwood-based, 3 cubic foot gardening and landscape mulch.		
B9EU	B9EU-0016	This is a hardwood-based, 2 cubic foot gardening and landscape mulch. This product is bagged.		
B9EU	B9EU-0017	This is a cocoa-based mulch, 2 cubic foot gardening and landscape mulches. This product is bagged.		
B9EU	B9EU-0018	This pine bark-based mulch for landscaping.		
NU9A	NU9A-0003	NEVER MULCH AROUND YOUR TREES AGAIN with our mulch tree rings. Nothing looks better around the base of a tree than a neat circle of mulch. But keeping it that way is another matter. If the lawn mower doesn't shoot it all over your lawn, it ends up decomposing far too quickly. Now there's a better way to get the benefits of mulch without all the headaches. And it won't break down or get caught in your mower. As your tee grows, simply cut a larger hole around the base. You also save your tree from the damaging weed eater hits that happen while trimming because you will never have to trim again. Do yourself and your yard a favor with our product. Before putting down the mulch rings, we recommend you remove all sod.		
PDW2	PDW2-0001	This product is true compost that offers your soil and plants all of the incredible benefits that only true compost can. This is made from the same plant materials you might use in your home compost pile-grass clippings, brush, wood chips, shredded paper and straw contains no animal manures, sludge or industrial wastes (which other bagged composts may contain) is only "finished compost"-the materials have decomposed for a minimum of two years.		

	IBRG	IBRG-0001	A natural organic soil supplement from our scientifically managed cattle feed lot.		
	IBRG	IBRG-0002	This product is a pure, organic product composted of cattle manure and wood fiber animal bedding using our state-of-the-art equipment.		
	IBRG	IBRG-0003	a natural and organic soil supplement from our scientifically managed cattle feed lot.		
	IN71	IN71-0001	Recycled yard waste makes great compost and helps the environment! Great soil amendment		
	D54J	D54J-0001	Helps rebuild soil structure, helps restore and revive soil fertility, helps soil life for healthier soil, suppress weed growth, prevents soil erosion. Grounded leaves, tree trunks and stems. Used for gardening.		
	D54J	D54J-0002	50% Sand, 25% Screened Top Soil, and 25% Chamness Brand Compost from Chamness Technologies.		
	Z744	Z744-0003	A premium grade compost specifically formulated for hydraulic application. Applications include hydro-seeding, soil conditioning and soil amendment. Hamilton's products are cellulose-based from recycled newspaper and cardboard.		
	Z744	Z744-0004	This is a cellulose fiber mulch manufactured from clean recycled newspaper. Our Mulch is hydroseeding mulch made from recycled paper and great for all erosion control needs as well as reclamation projects. Our mulch has a 20% more loading capacity than wood mulch and is packaged in easy to handle bags. Each bag weighs 50lbs. Our mulch mixes quickly with water and flows smoothly allowing for uniform distribution, which creates even growth.		
	Z744	Z744-0005	A rapid dispersion fiber mulch manufactured to meet the requirements of jet agitated hydro-seeding machines. Applications include hydro-seeding & strawtacking. Projects include residential & commercial landscaping. Our products are cellulose-based from recycled newspaper and cardboard.		
	Z744	Z744-0006	Our Mulch with the added benefit of a tackifier already mixed in. Applications include hydro-seeding & strawtacking. Projects include highways, golf courses, reclamation, residential & commercial landscaping. Our Mulch with Tac is a organic biodegradable tackifier that disperses rapidly in cold water and cures immediately after application. Tac is a premium tackifier for use in extreme climate and surface conditions. Tac reduces evaporation and nutrient leaching as well as protects against soil erosion by creating a strong . It mixes easily with water and prevents plugging.		
	TC9V	TC9V-0001	Shredded outer layer of tree trunks, used for making landscape mulch.		
	TC9V	TC9V-0002	Pieces of wood used for playgrounds and landscaping.		
	UA4Y	UA4Y-0001	Our products are all locally composted and use only recycled yard/tree trimmings and other organic recyclables from Hawaii. Since Hawaii's soils are generally poor, our product revitalizes soil, promotes stronger and healthier growth, improves		

			aeration/water retention and enhances nutrient availability, improving soil structure.		
Y4SA	Y4SA-0001		Shredded wood mulch. Used for landscaping and gardening. Helps soil retain moisture and keeps heat off the soil.		
Y4SA	Y4SA-0002		Mulch made from shredded tree bark. Used for landscaping and gardening. Helps soil retain moisture and keeps heat off the soil.		
Y4SA	Y4SA-0003		Mulch made from shredded tree bark. Used for landscaping and gardening. Helps soil retain moisture and keeps heat off the soil.		
Y4SA	Y4SA-0004		Shredded wood mulch. Used for landscaping and gardening. Helps soil retain moisture and keeps heat off the soil.		
Y4SA	Y4SA-0005		Shredded wood mulch. Used for landscaping and gardening. Helps soil retain moisture and keeps heat off the soil.		
Y4SA	Y4SA-0006		Shredded wood mulch. Used for landscaping and gardening. Helps soil retain moisture and keeps heat off the soil.		
Y4SA	Y4SA-0007		Shredded red wood mulch. Grey in color. Used for landscaping and gardening. Helps soil retain moisture and keeps heat off the soil.		
Y4SA	Y4SA-0008		Shredded red wood mulch. Used for landscaping and gardening. Helps soil retain moisture and keeps heat off the soil.		
GQ5K	GQ5K-0004		The chips are used in a wide range of applications from paper making to landscaping. These chips are very uniform in size and color and are primarily white birch.		
GQ5K	GQ5K-0005		It is generally derived from the bark of several different type of trees. The mulch works great for landscaping, gardens and around shrubs.		
RF95	RF95-0001		Our compost is a yard-trimming compost that is manufactured on site from ground brush, leaves, grass and stumps. The ingredients are ground, mixed in specific proportions and placed in windrows for six to nine months. Once the material is ready, it is ground to size (3/4" or 3/8"). The compost is a medium to dark brown color and it will stay that color. You will find that you will lose more volume over time compared to the other mulches, but that's when the magic of compost happens.		
S273	S273-0001		Twice shredded hardwood oak mulch that is black in color.		
S273	S273-0002		Twice shredded hardwood oak mulch that is brown in color.		
S273	S273-0003		Twice shredded hardwood oak mulch that is red in color.		
JFC2	JFC2-0001		A double milled, 100% cypress knitting mulch that forms a weed resistant, stay-in-place mat Light color reduces air temperature, transpiration, and water loss around plants Decay and insect resistant. It outlasts pine straw 5 to 1		
JFC2	JFC2-0002		Coarsely shredded bark mulch from hardwoods, A knitting mulch that makes good holding material for hillsides.		
JFC2	JFC2-0003		Environmentally friendly, color-enhanced, shredded wood mulch		

JFC2	JFC2-0004	100% cypress much, that is more traditional , fibrous mulch used in flower and plants beds. A natural insect and decay resistant.		
JFC2	JFC2-0005	Density supports vegetative growth within mulch. Limits weed resistance and makes weeding easier. Premium pine bark mulch.		
JFC2	JFC2-0006	100% cypress mulch, that is larger and more traditional for use in flower and plant beds.		
JFC2	JFC2-0007	Pine bark mulch that has been aged for over 18 months. It is heavier and more dense then regular mulch.		
JFC2	JFC2-0008	100% cypress mulch, uniformly ground for better matting		
JFC2	JFC2-0009	Dense top pine bark mulching product, Coarse particulate size range from 5/8 to 1 ½ square inches, Decay and insect resistant		
JFC2	JFC2-0010	A knitting cedar mulch that forms a weed resistant, stay-in-place mat		
JFC2	JFC2-0011	Thickness and coloration make this bark distinctive and beautiful; made from pine nuggets.		
JFC2	JFC2-0012	Premium decorative top pine bark mulching product, Particulate size range from 1½ to 2½ square inches, Does not support vegetative growth in mulch itself, Decay and insect resistant, Survives 10 years and more in field tests		
JFC2	JFC2-0013	Environmentally friendly, color-enhanced, shredded wood mulch		
M7PP	M7PP-0001	Premium, all-purpose natural planting and garden soil amendment. contains all-organic, long-lasting ingredients including chicken manure, bat guano and kelp meal. Helps break up clay soils, improves drainage, promotes healthy root growth, adds valuable micro-nutrients to soil.		
M7PP	M7PP-0002	All-natural planting mix and mulch for most garden and landscape needs. Rich in all natural, organic materials including: kelp meal, worm castings, bat guano & natural forest products.		
O5VU	O5VU-0001	We offer it in an Oak & Ash blend which has a darker red color. The other option is natural Maple.		
K2H9	K2H9-0001	Long Lasting pine needles		
K2H9	K2H9-0002	Dark brown, premium hardwood mulch.		
K2H9	K2H9-0003	Organic compost blend ideal for use as a soil enriching mulch or soil conditioner. Made from various types of hardwoods.		
K2H9	K2H9-0004	ASTM approved wood fiber mulch for use underneath and around playground equipment.		
K2H9	K2H9-0005	Environmentally beneficial, Amerimulch is a long lasting, fine textured mulch that allows beautiful color coordination of the landscape and home. Helps to prevent weeds, retains moisture and keeps soil cooler for healthier plants.		
K2H9	K2H9-0007	Dark brown, uniformly shredded mulch that helps to prevent weeds, retains		

			moisture and keeps soil cooler for healthier plants. Made from yard wastes and compost.		
K2H9	K2H9-0008		The high organic content makes this the ultimate choice for soil amendment in all planting situations. Ideal for seeding and as an excellent, weed free seed cover.		
S864	S864-0001		A painted red hardwood mulch. All paints are environmentally safe.		
S864	S864-0002		A fine texture compost product that is virtually weed free and odorless. Wood shaving based dairy manure is the raw product that we process on our licensed composting facility. This process is what kills weed seeds and pathogens to give you a very consistent, quality product.		
S864	S864-0003		A dark brown, shredded mulch made from the bark of an assortment of trees.		
S864	S864-0004		A light brown, shredded mulch made from an assortment of hardwoods.		
H4CQ	H4CQ-0001		Using leaves and grass clippings, our Compost makes the finest compost and other soil products available anywhere.		
H4CQ	H4CQ-0002		Using leaves and grass clippings, our Compost makes the finest compost and other soil products available anywhere.		
QY1P	QY1P-0001		Mulch is made from organic materials and can improve soil structure and tilth. As the mulch decays, the material becomes top soil. decaying mulch may also add nutrients to the soil. Mulches can also prevent loss of water from the soil by evaporation.		
QY1P	QY1P-0002		Mulch is made from organic materials and can improve soil structure and tilth. As the mulch decays, the material becomes top soil. decaying mulch may also add nutrients to the soil. Mulches can also prevent loss of water from the soil by evaporation.		
QY1P	QY1P-0003		Spent mushroom compost is the residual compost waste generated by the mushroom production industry. It is a good source of general nutrients as well as a useful soil conditioner. Heavy metals or pesticides shouldn't be worried about since the compost ingredients have very low levels of both.		
QY1P	QY1P-0004		Mulch is made from organic materials and can improve soil structure and tilth. As the mulch decays, the material becomes top soil. decaying mulch may also add nutrients to the soil. Mulches can also prevent loss of water from the soil by evaporation.		
QY1P	QY1P-0005		Mulch is made from organic materials and can improve soil structure and tilth. As the mulch decays, the material becomes top soil. decaying mulch may also add nutrients to the soil. Mulches can also prevent loss of water from the soil by evaporation.		
K6LH	K6LH-0001		Biosolids, Greenwaste, and Biosolids/Compost co-compost through windrow composting		
R5C8	R5C8-0001		Made mainly from organic material, wood product, animal product, and yard wastes. These are composted into a finished product that can be used for		

			agricultural, horticultural and landscape applications. Custom blending can also be done for customers. Can be used for the following purposes: Lawns, golf courses, turf grass, pasture Trees, shrubs Landscape beds, raised beds Fruits, vegetables, flowers Container mixes Compost tea Erosion control		
	QCPB	QCPB-0003	100% organic, all natural, odorless, high in micro nutrients, and earth friendly. Made entirely of spearmint. Jump start your soil in containers, gardens, and lawn. Great for flower or vegetable gardens. Perfect for roses too! This all- natural, high nutrient soil amendment is approved for organic production.		
	GJ8V	GJ8V-0001	Our Compost is 100% compost and produces results like you have never seen! This poultry-based product is an all-natural blend of organic materials that reduces or eliminates the need for manure or other commercial fertilizers. Mixture of soluble proteins and woodchips.		
	GJ8V	GJ8V-0002	Our Planting Mix is a ready-to-use mix of our compost and topsoil. Ingredients include woodchips and soluble proteins. For gardens, lawns, landscaping, and outdoor pots, plant or seed directly into the mix and add water. For an easy-to-use planting mix that produces exceptional results, use Our Planting Mix.		
	GJ8V	GJ8V-0003	Our Potting Soil is an easy-to-use all purpose potting soil. Specifically designed for indoor and outdoor use, pot or repot directly into contents and add water. There is no need for any additional fertilizer or blending. Contains peat, composted pine bark, and Our Compost.		
	TWOO	TWOO-0001	We increased the volume of biosolids treated to approximately 3,000,000 pounds or 5,500 cubic yards and consume nearly 11,000 cubic yards of tree trimmings and wood waste.		
	P8CV	P8CV-0001	Compost offers consistent quality, high organic content, microbial life and valuable slow-release nutrients.		
	T35U	T35U-0001	Mulch made from Pine bark for horticultural purposes. Retains moisture in soil around flowers and keeps heat off.		
	T35U	T35U-0002	Mulch made from cypress for horticultural purposes. Retains moisture in soil around flowers and keeps heat off.		
	T35U	T35U-0003	Mulch made from cedar for horticultural purposes. Retains moisture in soil around flowers and keeps heat off.		
	T35U	T35U-0004	Mulch for horticultural purposes. Retains moisture in soil around plants and keeps heat off.		
	T35U	T35U-0005	Mulches for landscaping Shavings for livestock and poultry bedding Wood flour for use in the composite industry Bulk fiber for pellet manufacturing and the drilling industry General wood waste for boiler fuel used by companies for heating and energy.		
	X3W1	X3W1-0002	Hydroseeding mulch made from recycled news print		
	A833	A833-0001	A premium hardwood bark mulch, containing a higher bark content, extra finely		

		shredded, aged up to a year. This is a natural chemical free product mainly used as top dressing over existing mulch.		
A833	A833-0002	A premium hardwood bark mulch finely shredded, aged up to a year, and a natural chemical free product mainly used as top dressing over existing mulch.		
A833	A833-0003	A hardwood bark mulch that is aged up to a year, and all natural chemical free product mainly used as a base coat for new landscape areas		
A833	A833-0004	A hardwood mulch with no bark and not aged. This is all natural/chemical free used for playground areas on embankments and in wooded areas.		
A833	A833-0005	A hardwood mulch that is not aged and has no bark material in the product. The mulch color is produced using all natural pigments from the earth. There are no hazardous chemicals in the product! Color Enhanced Mulch will hold its color for up to one year or more.		
COL1	COL1-0001	Dark brown color with a chocolate smell. Chippy texture. Great for the soil. Known to kill slugs and deter termites. Will darken to a black color as it ages.		
COL1	COL1-0002	A chippy textured pine bark, that has been screened to 4 inch sized nuggets and smaller. Brown in color. Great to use in damp areas.		
COL1	COL1-0003	A chippy textured pine bark, that has been screened to 1/2" and smaller. Brown in color. Its fine chippy texture gives your landscape a nice, clean appearance.		
COL1	COL1-0004	Pine needles from southern pines. Reddish brown color. 4-6 inch needles. Excellent for sloped areas and acid loving plants. Also great to use as a base on sloped areas for finer mulches.		
COL1	COL1-0005	Shredded cypress bark only! Reddish brown in color with a stringy texture. The Cadillac of our mulches. Looks great and lasts a long time.		
COL1	COL1-0006	Composted hardwood bark aged to a dark brown to black color and shredded to a medium texture. This is our average grade hardwood bark mulch, great for any application.		
COL1	COL1-0007	100% hardwood bark. Aged to a black color with a stringy texture. It contains less fines than our other hardwood mulches, which reduces compaction. It's great for sloped areas and around new plantings that require frequent watering.		
COL1	COL1-0008	Color-enhanced mulch that keeps water in soil in order to retain its moisture even during dry periods. Used for landscape, and gardening. Color is Red.		
COL1	COL1-0009	Bagged soils (Posey Power)		
COL1	COL1-0010	A finer textured hardwood bark mulch that has been color enhanced with a natural and environmentally safe colorant. The colorant provides a rich black color that lasts a long time.		
COL1	COL1-0011	A medium textured shredded yellow pine that has been color enhanced with a natural and environmentally safe colorant. The colorant provides a rich red color that lasts a long time.		

COL1	COL1-0012	Good for most applications. Reddish tan color with a medium texture. Shredded wood and bark from cypress trees. Great for most applications. The use of this product in a heavily shaded yard will better enhance the plants.		
COL1	COL1-0013	Color-enhanced mulch that keeps water in soil in order to retain its moisture even during dry periods. Used for landscape, and gardening. Color is brown.		
COL1	COL1-0014	A chippy textured pine bark, that has been screened to 1 1/2" and smaller. Brown in color.		
COL1	COL1-0015	Composted hardwood bark aged to a black color and shredded to a fine texture. Our Customers' favorite.		
COL1	COL1-0016	A chippy textured pine bark, that has been screened to 2 inch sized nuggets and smaller. Brown in color. Our most popular pine bark for general use.		
COL1	COL1-0017	A chippy textured pine bark screened to 1 1/2" and smaller, that has been color enhanced with a natural and environmentally safe red colorant. The colorant provides a rich red color that lasts a long time.		
NK7L	NK7L-0001	Is a blend of chicken poop (chicken based manure) and bagasse (sugarless sugarcane fibre). Usually used as potting soils.		
NK7L	NK7L-0002	Composed of sugar cane fiber and is dyed red. Mostly used as mulch for rounding plants. Prevents unwanted grass from grow around the plants. Protects plants from heat and retains moisture for dry periods.		
PF1S	PF1S-0001	100% organic commercial product, dairy manure		
S4O8	S4O8-0001	New in-line lumber grinding system by us, Fresh and aged material		
M3JJ	M3JJ-0008	Composted Natural Chicken Manure, blended with a small amount of gypsum, is so fully composted it smells like live soil, not manure, and it will not burn. Nutrient levels are stable at 1.2% total nitrogen, 4% phosphoric acid, 2% soluble potash, 11% calcium, 2% sulfur and 0.6% iron. Contains beneficial bacteria, amino acids, proteins and enzymes. In flower and vegetable gardens, use sparingly at 40 lb/150 sq ft; on lawns use 40 lb/100 sq ft. Water thoroughly after application.		
M3JJ	M3JJ-0010	High quality "controlled microbial compost" is made by following methods prescribed by the Lubkes. Ingredients include cow manure, fresh yard waste, lettuce, horse manure, straw, finished compost, and clay soil to help colonize beneficial bacteria. Analysis is 0.72N-0.41P-1.3K. Apply 1" of compost to beds or around plantings and work into the soil; use less for maintenance. One bag covers approx. 12 sq ft.		
M3JJ	M3JJ-0011	High quality, green-waste based, vegetarian compost. Careful monitoring of the carbon to nitrogen ratio, CO2, temperature, and moisture, and daily turning with an aeromaster turner results in a highly aerobic, microbial product. Compost production managers were trained in Lubke and CMC classes to ensure the highest quality finished product. Typical analysis is 1.69N-0.66P-0.92K and humic acid 4.56%. Made primarily from green waste. Screened to .375".		

M3JJ	M3JJ-0012	Thoroughly processed and ready to provide N, P, K, and Ca in plant-available form. It is also full of microbial life, humus organic matter, humic acids and more. Top-grade manure-based compost with no growth inhibiting redwood or cedar filler. Do not over apply. Farm rates are 2-4 tons/acre depending on crop and soil history. Garden rates are 1 lb/2-10 sq ft. Analysis averages 2% N, 1% P, 3% K, 3% Ca, 10% humic acids. Each bag weighs about 40 lb.		
M3JJ	M3JJ-0052	This exciting product offers ready-to-use compost tea with all the benefits of homebrewed tea. We have been leery to carry packaged tea because while fresh brewed compost tea is packed with an incredible microbial content, this is difficult to maintain once packaged. It has been in development for over 4 years with several Ph.D. researchers; there have been multiple field trials, applications and phenomenal success in balancing soil and increasing nutrient cycling. Foliar applications provide a protective coating to out compete pathogens and when applied to soil can help rebuild the soil food web and out compete soil pathogens. Compost-Tea-In-A-Bag is extracted from worm castings and compost, cultured and brewed in a compost tea machine for 24 hours, then stabilized in a liquid form, stored in a special bag (to maintain active and dormant cultures), sealed and boxed. It arrives to you in a ready-to-use mix that is diluted with water and used as a soil drench or foliar spray. Plan on using product by the date on the box (within about 12 months). Dilute 2 quarts tea with 2 gallons water, treats about 300 sq ft. Use on flowers, fruits, vegetables, lawns, trees, or shrubs.		
M3JJ	M3JJ-0189	Use this wonderfully aromatic mulching material to keep the weeds out of your garden or to use on your pathways. Imagine - with every footstep, an aroma of cocoa is released! Customers who use this material Note: While chocolate is known to be toxic to dogs & cats, this product is SAFE! Cocoa Mulch processing includes removal of cocoa butter which contains theobromine, the ingredient harmful to pets.		
B682	B682-0047	An eco-friendly peat alternative! Made from compressed coconut fiber, this product exhibits a very good balance of wetting and aeration and a resistance to bacteria and fungus growth. Use as a replacement for soil or as a soil conditioner. Our coconut fiber works anywhere you would normally use peat moss, rockwool, vermiculite, perlite, or pumice...and worms love it! Contains no nutrients. The easiest thing to do is add organic fertilizer to your nutrient solution before you soak the coconut coir fiber. The resulting material is loaded with nutrients and ready to go. It holds 8-9 times its weight of water and has a high nutrient-absorption capacity. These characteristics make it an ideal soil amendment. Very economical. One brick expands to make 5-7 quarts of growing medium. Bales make 10 times as much.		
B682	B682-0048	No amount of fertilizer can make up for poor soil. Our Organic Compost, derived from forest products, dairy manure, chicken manure, worm castings, bat guano, kelp meal and oyster shell provides a microbially active source of organic fertilizers, humus, organic matter and other important soil builders required by plants.		
F1JD	F1JD-0001	Our compost is the humus-rich material that results from the decomposition (decay)		

		of organic material, such as grass clippings, tree and shrub trimmings, food, cardboard, and paper. Compost contributes nutrients and beneficial life to the soil, improves soil structure and fertility, improves drainage, and helps prevent storm water runoff that can pollute rivers and lakes.		
N00X	N00X-0002	Made from 100% wood fiber, our Wood holds 12 times its weight in moisture, enhancing seed survival rates.		
N00X	N00X-0003	Our wood and wood with tack products are ideal choices for critical sites with up to 2:1 slopes. Contractors report that our Thermally Refined™ fiber delivers up to 30% more yield than competitive products, which means more money in their pockets.		
N00X	N00X-0004	Our wood and wood with tack products are ideal choices for critical sites with up to 2:1 slopes. Contractors report that our Thermally Refined™ fiber delivers up to 30% more yield than competitive products, which means more money in their pockets.		
N00X	N00X-0006	Combines 100% Thermally Refined™ wood fiber with the highest quality cellulose in the industry, delivering up to 15% greater yield to contractors versus competitive blend products without a big jump in price.		
N00X	N00X-0007	Combines 100% Thermally Refined™ wood fiber with the highest quality cellulose in the industry, delivering up to 15% greater yield to contractors vs. competitive blend products and covering up to 20% more ground than cellulose without a big jump in price.		
N00X	N00X-0010	This hydraulic mulch provides erosion control that is superior to straw for nearly the same cost. It is ideal for general seeding. An exclusive defibration process and new manufacturing improves water-holding capacity by 22%.		
N00X	N00X-0013	Superior erosion control to straw for nearly the same cost and looks better with a darker, richer color than competing brands. In addition, it shoots well and mixes in water at an accelerated rate. All this with the added benefit of tack for extra holding power.		
N00X	N00X-0014	The same quality wood and cellulose blend as Terra-Blend but with Tacking Agent 3, the industry's leading tackifier.		
N00X	N00X-0015	Combines 100% Thermally Refined™ wood fiber with the highest quality cellulose in the industry, delivering up to 15% greater yield to contractors versus competitive blend products without a big jump in price.		
N00X	N00X-0019	This product holds 13 times its weight in water, improving turf establishment while controlling erosion immediately after application—no cure time required!		
TMXT	TMXT-0001	Our Garden Compost is a 100% organic, greenwaste based compost approved for all types of gardening. Our Garden Compost is produced following stringent guidelines and lab tested for maturity, proper biological balance, and microbial activity.		
TMXT	TMXT-0002	This product is fortified with synthetic fertilizer, in addition to organic sources of nitrogen, in order to perform well for their particular use.		

TMXT	TMXT-0003	This is our most popular manure compost blended with three manures making the most ideal organic compost used for flower and vegetable gardens. It is well composted and provides valuable nutrients along with beneficial microbes		
TMXT	TMXT-0004	Chicken Compost is a higher nitrogen manure compost used for amending poor soils. It's ideal for most plants and vegetables requiring a balanced bacterial and fungal soil foodweb.		
Q5LU	Q5LU-0001	The finished compost is then readily marketed in bulk form to Agricultural Users, Landscapers, Nurseries, Bulk Yards, and to the General Public throughout California. Compost made from biosolids and green waste.		
CO1J	CO1J-0001	This material comes from different mills and varies in color, but in general it is a dark brown color. The main purpose for using it is to retain moisture and feed plants. Made with various mixed hardwoods.		
P1RE	P1RE-0001	Long, finely shredded hickory wood mulch.		
P1RE	P1RE-0003	Has the texture of oak bark mulch and retains its color for up to two years.		
P1RE	P1RE-0005	Our hardwood mulch is screened, resulting in a fine-textured product that resembles ground coffee.		
P1RE	P1RE-0006	Dark, rich blend that looks and works great around trees and in gardens.		
P1RE	P1RE-0007	Has the texture of oak bark mulch and retains its color for up to two years.		
P1RE	P1RE-0008	Has the texture of oak bark mulch and retains its color for up to two years.		
P1RE	P1RE-0009	Cow manure and bedding is composted, then passed through a 1/2-inch screen		
P1RE	P1RE-0010	Premium oak bark is shredded and passed through a grinder twice.		
P1RE	P1RE-0011	Has the texture of oak bark mulch and retains its color for up to two years.		
Z381	Z381-0001	Use our Garden Compost to amend soil in containers as well as outdoor gardens. Listed by the Organic Materials Review Institute (OMRI), our Garden Compost contains Canadian Sphagnum peat moss, compost and forest humus.		
Z381	Z381-0002	This organically enriched compost blend contains bat guano, bone meal, kelp, earthworm castings, and mycorrhizae, so it's ready to jumpstart the microbes in your soil and give your plant's roots the perfect home to grow in.		
D1IH	D1IH-0001	compost product that has the organic matter content necessary to improve the physical structure, chemical composition and biological properties of any soil type.		
P17W	P17W-0001	A blend of well composted organic materials including 50% cotton burr compost -- mechanically in-vessel composted for the most consistent, pathogen and weed seed free compost you can buy.		
P17W	P17W-0002	To enrich existing soils for planting grass or shrubbery.		
PI9P	PI9P-0001	Our Compost™ is comprised of nutrient-rich wastewater biosolids, yard trimmings and other organic recyclables. Improves soil structure, porosity and density,		

			creating a better plant root environment.		
	Y08N	Y08N-0001	Mulch made from oak tree bark. Sold in bark form. Can be composted and colours can be added to it.		
	Y08N	Y08N-0002	Mulch made from oak tree bark. Sold in bark form. Can be composted and colours can be added to it.		
	O105	O105-0010	From outdoor container plantings to hanging baskets and indoor kitchen gardens, our product is fit for any project. A loamy mix rich in micronutrients, this product = contains Canadian Sphagnum peat moss, compost, earthworm castings, perlite and pumice. You can count on quality as every bag of our Natural & Organic features the seal of approval from the Organic Materials Review Institute (OMRI). Dry contents of this product will fill approximately 8 one-gallon nursery pots.		
	O105	O105-0012	With Canadian Sphagnum peat moss, coconut fiber, earthworm castings, pumice, dolomite lime and an organic wetting agent, our CocoBlend is an excellent all-purpose growing medium. The wetting agent enhances moisture retention and rewettability to make CocoBlend particularly well-suited for high heat and drought-prone areas. Our CocoBlend is listed with the Organic Materials Review Institute (OMRI) and comes in two cubic foot bags. Dry contents of this product will fill approximately 24 one-gallon nursery pots.		
	O105	O105-0013	Use our Garden Compost to amend soil in containers as well as outdoor gardens. Listed by the Organic Materials Review Institute (OMRI), our Garden Compost contains Canadian Sphagnum peat moss, compost and forest humus. This mix improves soil texture and moisture retention, encourages beneficial microorganisms and contributes important micronutrients. Dry contents of this product will fill approximately 12 one-gallon nursery pots.		
	O105	O105-0014	Start your seedlings and cuttings off right with our Seedling Mix. Approved by the Organic Materials Review Institute (OMRI), Seedling Mix consists of perlite, dolomite lime, double-screened Canadian Sphagnum peat moss and an organic wetting agent. Available in a 16-quart bag, this is a light medium great for germinating most plant varieties. Dry contents of this product will fill approximately eight, one-gallon nursery pots.		
	H3H3	H3H3-0001	Engineered wood fiber, Tested non-flammable, arsenic and lead free. Passes fall safety test after 15 years.		
Multipurpose Lubricants	J7A3	J7A3-0001	Multipurpose lubricant for use in the office, at home or on the farm.	100	
	I677	I677-0007	Release agents, raw materials, slip agents. A wax emulsion based on Carnauba wax from the Carnauba palm. A protective coating, slip agent & lubricating wax.	93	
	BP37	BP37-0009	Readily biodegradable lubricant designed for industrial, shop and home use. Safe for use on all metals and most plastics. Perfect for indoor and outdoor applications. Lubricating Oil.	91	

JY3G	JY3G-0037	High performance synthetic polyester base oil. Unique chemistry offers excellent oxidative and thermal stability, superior low temperature behavior, and biodegradability. Applications include hydraulic fluids, fire resistant hydraulic oils, metalworking fluids, and general lubricating oils.	90	
EPBV	EPBV-0002	A dimer acid-based ester with excellent oxidative stability, high viscosity index and low volatility. It is recommended for use as a high performance synthetic lubricant-based fluid.	71	
A33R	A33R-0018	Finally an effective lubricant that's safe for you and the Earth! If you've got a squeak or stuck parts, then you'll want to use this natural, soy based lubricant. This product is our alternative to petroleum based lubricants and yes - it works extremely well! It penetrates to stop squeaks, loosen tight hinges, slow down rust and to keep moisture from getting in. Use it on locks, bolts, nuts, valves, doors, you name it. This product cleans with dissolving action to remove adhesives, tar, grease, gum, tape, scuff marks, crayon, and water deposits. It is made from soybean oil, a renewable resource. This biobased formula makes for an effective lubricant that protects longer than petroleum based lubricants and is a much more environmentally responsible product. Measures: 4 fl oz (118) ml Ingredients: Soy bean oil, other vegetable derived oils, Orange peel extract, vegetable based corrosion inhibitors.		Same as product B682-050
A43G	A43G-0001	A pure mineral citrus oil for many industrial and commercial applications. This product is clear to reduce chances of stains. It is great for coating cutting tables to improve material handling.		
B682	B682-0150	Finally...an effective lubricant that's safe for you and the Earth! This product's biobased formula contains soybean oil and other renewable resources for an effective lubricant that protects longer than petroleum based products and is much more environmentally responsible.		Same as product A33R-0018
BP37	BP37-0072	Displaces moisture, Protects against corrosion, Ideal routine maintenance lubricant, Non drying, Indoor/Outdoor surface lube Application: Conveyors, chains, cables, hinges, rollers, shafts, rails, pins, bearings, machinery, drives, motors, doors.		
EPBV	EPBV-0003	A dimer acid-based ester with excellent oxidative stability, high viscosity index and low volatility. It is recommended for use as a high performance synthetic lubricant-based fluid.		
HAKV	HAKV-0035	This product is a specifically designed synthetic lubricant formulated with patented LXE (Liquid Wax Esters) to enhance all-purpose lubrication applications. This unique product can be used in yard, agricultural, marine, automotive, industrial, and other applications to instantly stop squeaks, free sticky mechanisms, loosen difficult bolts, and anywhere else a general purpose lubricant is required. Environmentally safe, user friendly, non-toxic, and non-flammable. This product is biodegradable and Aquatically non-toxic.		

HAKV	HAKV-0038	Both provide lubrication for the assembly of transmission, engines, gear boxes, pumps or any other general automotive or lubrication use. These products contain liquid wax esters that lubricate and protect the equipment by strongly attaching to metal surfaces giving superior lubrication of valves and governors, thus enhancing valve performance. The active ingredients do not contain solid particles (like Teflon®) or cheap petroleum products that provide no lubrication properties.		
I677	I677-0004	Widely sold as a lubricant for the assembly of ductile iron pipe, PVC pipe, concrete pipe, etc. Approved by NSF for in drinking water pipe.		
I6TH	I6TH-0023	This product is a vegetable oil-based lubricant that contains ingredients which are 'Generally Regarded as Safe' (GRAS) for food application. This lubricant can be used in applications where there is a very high possibility of the lubricant coming into direct contact with food products. It has excellent oxidative stability and high biodegradability and can be used in environmentally sensitive areas such as in agriculture, marine, and food processing plants. This product is an environmentally responsible, biodegradable lubricant that is formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable material.		Same as product RGWJ-0097
J7A3	J7A3-0035	This product is an environmentally and consumer safe multi-purpose lubricant for use in the office, at home, on the farm, on the sports field, or in the shop. This product lubricates, prevents rust and corrosion, cleans, polishes and protects all types of metals. This product offers the user a safe, multipurpose lubricant alternative to those currently found commercially.		
J7A3	J7A3-0036	This product is a friction modified, environmentally and consumer safe multi-purpose lubricant for use in the office, at home, on the farm, on the sports field, or in the shop. This product lubricates, prevents rust and corrosion, cleans, polishes and protects all types of metals. This product offers the use a safe, multipurpose lubricant alternative to those currently found commercially.		
JCX4	JCX4-0008	This product is a highly soluble lubricant designed to significantly increase water's ability to lubricate. It can be used to reduce water temperatures where friction is the source of heat when water is used as a coolant. This product is not just rapidly biodegradable, operator friendly and made from renewable resources but is environmentally safe.		
JCX4	JCX4-0009	This product is an environmentally safe form release designed for use with metal, wood, plastic and fiberglass forms. It leaves a smooth film on the form surface and does not react with Portland cement or its common admixtures.		
JCX4	JCX4-0013	This product is the ideal, general purpose lubricant to use where risk of the lubricant escaping to the environment is high yet excellent lubrication is required.		
JCX4	JCX4-0014	This product is highly stable fluid that is used for various industrial lubricating purposes.		

	JY3G	JY3G-0008	Alkali refined, bleached, and winterized sunflower oil for use in alkyd resins, urethanes, and general industrial applications.		
	JY3G	JY3G-0019	Specially developed for industrial lubrication applications. Its unique fatty acid composition provides natural and extended product stability. Has excellent lubricity. Has been used to replace petroleum oils, esters, and animal fats in steel rolling and other industrial formulations.		
	JY3G	JY3G-0040	Vegetable oil based methyl ester. Applications include cleaning fluids, industrial lubricants and mold release oils.		
	KM73	KM73-0009	Synthetic ester-based general lubricating and hydraulic oils. Temperature range: -35 °C to 90 °C. Rapidly biodegradable. Exceed VDMA 24 568 HEES (ISO 15380). VDMA 24 569 change-over recommendations should be observed.		
	MPV9	MPV9-0002	Pure, clean canola oil is combined with our exclusive additive package to create a long lasting environmentally preferred product.		
	RGWJ	RGWJ-0051	Designed to lubricate bearings, chains, slides, and gears in industrial applications where air temperatures often exceed 500F. An ashless fluid that does not contain residue-forming solids.		
	RGWJ	RGWJ-0097	This product is a vegetable oil-based lubricant, contains ingredients which are 'Generally Regarded as Safe' (GRAS) for food application. This lubricant can be used in applications where there is a very high possibility		Same as product I6TH-0023
	SLWT	SLWT-0004	This product is a readily biodegradable, high VI product made from vegetable oil bases. This product contains anti-wear additives and provides protection against corrosion and rusting. It is designed for use as an environmentally safe alternative to the more commonly used petroleum based lubricants in a wide variety of applications, including hydraulic and chain bar or bearing lubrication. Small spills of this product which have not been otherwise contaminated will biodegrade naturally when exposed to the environment.		
	SLWT	SLWT-0006	These products are biobased environmentally friendly lubricants specifically designed to be used in all loss lubrication systems. They contain a tacky additive that helps them to stay on the lubricated part for a longer period of time and reduces oil mists, thus improving the lubrication and reducing the amount of lubricant used in the these systems. These products are designed for use on chains, chain saws, open gears, open bearings, cams, etc. They can be applied by hand oiling, drip feed, force fee, or brush. These oils are non toxic and biodegradable with no special storage requirements.		
	U922	U922-0001	All purpose industrial lubricant.		
Office Paper	WS82	WS82-0002	Paper is ideal for brochures, newsletters, annual reports, hang tags, and other high-profile corporate identity and promotional pieces. Excellent printing quality for black & white and full-color projects. Available in most sheet and roll sizes and basis weights. 10% hemp/flax & 90% post-consumer waste. 100% processed chlorine-	100	

		free.		
QW4J	QW4J-0003	Kenaf/Recycled Blend Processed chlorine-free, 10% Kenaf, 90% recycled This paper is a sturdy and attractive way to send your correspondence. Processed chlorine-free	100	
OA4Q	OA4Q-0001	Paper is "tree free" and contains 25% hemp and 75% post-consumer recycled paper.	100	
WV3A	WV3A-0001	Paper is available only in 2 colors (Mesa & Tortilla) with 50% sugar cane bagasse (sugarcane) & 50% recycled fibers containing 30% post-consumer waste in text, cover, and writing.	100	
WS82	WS82-0001	Paper made of 10% hemp/flax, 40% post-consumer waste, 20% pre-consumer waste, 30% FCS wood pulp	100	
DPKX	DPKX-0004	Paper available only in 2 colors (Mesa & Tortilla) with 50% sugar cane bagasse (sugarcane) & 50% recycled fibers containing 30% post-consumer waste in text, cover, and writing.	99	
QW4J	QW4J-0002	100% kenaf, Tree-free, Totally Chlorine-free, Acid-free - natural cream	98	
R316	R316-0001	Unparalleled for its strength and tear-resistance. the perfect paper for paper-case bindings. Resembles the wear-characteristics of 16th-century papercase papers more closely than any other paper. Coarse texture. 100% dew-retted raw flax. Since 100% flax will shrink and expand, this paper is not particularly suitable for recycling into pulp fill material. 4 deckle edges; available in 8 colors; white is gelatin-sized.		
R316	R316-0002	Book papers are made of cotton or flax (the flax has been fermented for controlled amounts of time, cooked in lime and then washed to lighten the color of the finished paper. Less fermentation time produces a stronger, but thicker, paper. 4 deckle edges; natural color		
R316	R316-0003	Cave papers is a small mill in Minneapolis, Minnesota. All of their flax is cooked in a 3% solution of Calcium hydroxide. the water is filtered through activated carbon to remove chlorine, dissolved minerals and particulate matter. Their beater is equipped with a washer wheel which rinses the fiber throughout the beating cycle. Sheets of paper are formed on either an 18"x24" or a 22"x30" mould. since we loft dry the paper, some shrinkage does occur. Sizing is done with a 2/5% solution of gelatin. Other papers can be gelatin sized on request at \$2.00 per sheet. Due to the nature of our process variation from sheet to sheet does occur. No two sheets are alike however they evoke the same spirit. All patterns are filed with the US copyright office.		
G1DK	G1DK-0001	Paper made from virgin non-wood fibers: 40% hemp, 40% flax, 20% cotton. Natural finish, smooth, 54-lb book/text (22-lb bond), 60-lb book/text (24-lb bond), 68-lb book/text (27-lb bond) paper, and Card Stocks of 55-lb cover and 74-lb cover weights. Slightly bulkier than its tree counter-part: 4.0 points in thickness. Can be recycled up to 7 - 8 times, while tree paper only up to 3 times.		

	I5B8	I5B8-0030	Paper produced with 50% bamboo fibers and 50% post-consumer fibers.		
	UNZW	UNZW-0002	Letterhead 8.5 x 11" paper, per ream of 500 sheets our Kenaf 10% kenaf, 90% post consumer 24 lb.		
	UNZW	UNZW-0003	Paper is available only in 2 colors (Mesa & Tortilla) with 50% sugar cane bagasse (sugarcane) & 50% recycled fibers containing 30% post-consumer waste in text, cover, and writing.		
	O2OR	O2OR-0002	The paper is made from hemp and flax, Weights 80 lb. Text , 80 lb. Cover Sheet Size 25 x 38 Sheets/Carton Variable Color White Recycled 50% Post-Consumer Waste (PCF) Other Acid-Free,10% Hemp/Flax (TCF)		
	Y8C2	Y8C2-0001	100% Kenaf Uncoated Offset Printing Paper- tree-free, chlorine-free and acid-free. Available in rolls, parent sheets and cut sheets.		
	A662	A662-0004	Paper available only in 2 colors (Mesa & Tortilla) with 50% sugar cane bagasse (sugarcane) & 50% recycled fibers containing 30% post-consumer waste in text, cover, and writing.		
	ARWD	ARWD-0001	When you need a premium cotton writing sheet, our paper perfectly fits the bill. With 25% cotton fiber, this writing, text and cover grade is crisp, luxurious and professional-looking. Available in white or natural, smooth or light cockle finish.		
	DPKX	DPKX-0005	paper made of 10% hemp/flax, 40% post-consumer waste, 20% pre-consumer waste, 30% FCS wood pulp		
	DPKX	DPKX-0012	10% hemp/flax, 40% post-consumer waste, 20% pre-consumer waste, 30% FCS wood pulp		
Topical Pain Relief Treatments	U42A	U42A-0002	This Balm incorporates herbs that help ease muscle strains, tightness and inflammation. Shea Butter is known to ease stiff joints. The Arnica is also useful for bruises. Use this balm for arthritis flare ups, tense muscles or after you over exercise!	100	
	NPR5	NPR5-0004	contains herbs that work deep into the muscles and joints and warm the body. Gently massage into sore, aching areas. It will feel as though you have a warm Indian Blanket wrapped around you.	100	
	Q5ON	Q5ON-0024	Our new vegan salves all have their own unique healing properties. They all however have the benefits of high EFA organic hempseed oil. Our compact point of purchase displays use little room and have great visibility. Hemp Muscle Rub has traditionally been used as a therapeutic rub for sore muscles, and for overexertion, inflamed joints, and congestion.	100	
	Q5ON	Q5ON-0023	Our liniments have unique healing properties, as well as the benefits of high EFA organic hempseed oil. Cool Hemp Liniment has traditionally been used as a therapeutic rub for sore muscles, and for overexertion, inflamed joints, and congestion. Ingredients: Certified Organic Canadian Cannabis Sativa (Hemp) Seed Oil, (Certified Organic Olive, Certified Organic Safflower, or Certified Organic Sunflower Oil), (Essential Oils of: Cajeput, Cassia, Eucalyptus, Peppermint, Sweet Birch, Clove, Thyme, Rosemary), Menthol Crystals, Camphor Crystals, Vitamin E,	99	

		Rosemary Extract"		
Q5ON	Q5ON-0018	Our new vegan salves all have their own unique healing properties. They all however have the benefits of high EFA organic hempseed oil. Our compact point of purchase displays use little room and have great visibility. Traditionally used for aches, sprains, strains, shin splints, and bruises.	94	
EZ5Y	EZ5Y-0001	Anti-inflammatory balm for muscle and joint pain relief and arthritis. Includes virgin coconut oil, sesame oil, and beeswax. Also includes essential oils including black spruce, scotch pine, and golden rod.		
EZ5Y	EZ5Y-0003	Headache and nerve pain relief. Composed of jojoba, sesame oil, and a blend of essential oils including lavender, peppermint, and chamomile.		
K2V1	K2V1-0036	Seems every year after the first good snow, the aches and pains follow! Arnica, Solomon's seal, benzoin gum, and wintergreen in an organic olive oil base, it provides a healthy alternative to commercial rubs. For skiers, dancers, and even dads who have to go out and snowplow the driveway.		
K2V1	K2V1-0037	This salve contains the same pain relieving compound found in white willow bark and wintergreen. The pain relieving qualities and other wonderful effect that this salve can have on joints, muscles, ligaments, tendons, etc. makes it a wonderful selection for all sports enthusiasts, outdoor adventurers and anyone with discomfort in these areas. It is also helpful for injuries that are healing.		
K2V1	K2V1-0038	A great healing salve for everything from sprained ankles to diaper rash! Also helpful for corns, calluses, bunions, gout, sores, etc. Made from fresh comfrey root and herb, calendula flowers, olive oil, and beeswax.		
K2V1	K2V1-0039	In an avocado oil base, this salve contains essential oils of lavender, tea tree, eucalyptus. If nothing else works for you, try this one.		
K2V1	K2V1-0041	The same great formula as our Aprea Ski Liniment, now in a convenient salve. We have added some menthol, some cajaput and wintergreen essential oils for that added warmth. Better than anything else we've found for all those aches and pains.		
K2V1	K2V1-0043	This is a convenient, wonderfully soothing combination of lavender, peppermint, and sweet basil essential oils in a jojoba base oil. Just roll it on the forehead, temples, or cheekbones and close your eyes		
K47Y	K47Y-0001	A deep penetrating and heating massage lotion that relieves tired and aching muscles while leaving the skin feeling silky soft.		
ZK91	ZK91-0111	A staple in gyms, locker rooms and dance studios for years! Apply it directly to sore, stiff muscles or as an all-over rubdown and you'll feel its warming/cooling action go to work instantly. Aubrey's fast-acting formula helps loosen tightness and tension to help you relax after a workout. Use it before and after you exercise, and always keep a bottle in your gym bag. Into a natural coconut fatty acid base, Aubrey has compounded seven herbal essential oils - including wintergreen, ginger root, menthol and eucalyptus oils for their warming/cooling properties, and soothing rosemary and sage, two powerful skin tonics. Fast-acting natural formula custom-		

			made for life's minor aches and pains.		
LEO5	LEO5-0043		With wintergreen oil, jojoba oil, and menthol, this exhilarating blend of essences helps soothe tired, sore muscles with a combination of cooling and heating sensations.		
Y191	A21Z-0011		This Pain Relief Cream is designed to help alleviate joint pain - including that experienced by severe eczema sufferers. MSM (Methylsulfonylmethane) is an organic sulfur that is utilized by all cells of the body. It isn't something foreign that affects the body. Rather, it is something that our body's cells are generally missing due to our over-processed diet and poor soil nutrition.		
Y191	Y191-0022		A wonderful cream that leaves you feeling relaxed and serene. Natural ingredients with an easy feel allowing for a relaxing massage. Botanical Skin works uses pure ingredients including organic cold pressed oils, fresh butters, organic hydrosols, pure essential oils and glycerin-based extracts in order to deliver extraordinary quality hair, skin and body care products.		
RZZ3	RZZ3-0008		No pain, no gain! – or so the adage goes. But who says you have to live with the pain part? And who says the earth has to live with the pain of less-than-natural muscle relievers? Muscle Rub soothes sore muscles, joints, bruises and aches – and it does it all naturally. After lifting, running, biking, or whatever else, rub a little in and say “AHHHHHHH!”.		
NN56	NN56-0009		Our line of Massage bars are designed to help alleviate pain from sore muscles and joints. We have four different types of massage bars available, all of which contain arnica. Arnica is an organic herb that has been used for centuries to treat deep bruises and relieve pain.		
LBH6	LBH6-0001		concentrated, soothing, cooling, deeply penetrating, anti-inflammatory, pain relieving, water free solution with 100% Pure EmuMagic™ hormone, steroid and antibiotic free American Emu Oil, Methyl Salicylate for pain, Menthol for cooling, Camphor for dry skin, Lavender Oil for damaged skin, Eucalyptus Oil for damaged skin, Tea Tree Oil and Jojoba Oil to restore the skin. It contains no water!		
LBH6	LBH6-0005		Suggested for use on arthritis, muscle aches & strains, closed wounds, insect bites, scarring, menstrual cramps, headaches and migraines, and general and minor pain.		
NF9O	NF9O-0024		A sports massage lotion that goes on cool but then provides a deep healing warmth. Formulated to heal the patient while it is gentle to the practitioner.		
NF9O	NF9O-0026		A soothing, warming healing spray formulated to penetrate deep into muscles, joints and sinews.		
FA2X	FA2X-0002		contains a highly effective blend of Oils, Essential Oils and Beeswax that can help to relieve muscular pain and may assist in relieving the symptoms of Arthritis and Rheumatism. It contains six well known active ingredients including Cayenne Infusion, Wintergreen, Menthol, Eucalyptus, Ginger and Calendula to assist in relieving pain, reducing inflammation and increasing circulation.		

CF5Z	CF5Z-0003	All natural herbal liniment made from aloe vera gel and tinctures of peppermint, cinnamon, rosemary, chamomile and St. John's wort.		
NPR5	NPR5-0001	This Balm provides relief from painful bruises and helps to shorten the length of time the bruising persists.		
L281	L281-0001	contains ILEX, an herbal extract from a South American holly shrub. ILEX is used around the world in various health & wellness formulations. This product does not use waxes, oils, aloe or petroleum. The result is a fast-acting, deep penetrating, long lasting pain reliever.		
DMDM	DMDM-0001	Traditionally used by the Indigenous people for thousands of years. Entirely natural, safe and highly acclaimed world wide for its deeply soothing and protecting properties.		
B682	B682-0173	Stimulates circulation and healing for fast relief of sprains and other pains! 1.75 oz. tin.		
D02G	D02G-0001	Our Pain Spray is an all-natural, herbal no pain spray that offers pain relief immediately upon contact. And the benefits last for hours. Pain Spray is not a drug, so it never causes numbness, drowsiness, or any other harmful side effects. Pain Spray soothes arthritis, neck ache, backache, pinched nerves, carpal tunnel, tendinitis, muscle sprain, bruising, morning stiffness, growing pains, leg cramps, fibromyalgia and even headaches. Contains rare, extra-pure menthol, natural eucalyptus and peppermint oils, and herbal emollients. FDA Approved. All ingredients in Premiere's Pain Spray have been approved by the FDA.		
O357	O357-0002	Pure emu oil has been used for thousands of years to combat pain and heal ailments in the skin, joints, and muscles. Muscle relief is sought after by millions of people who suffer from tension in the back and shoulders, sports injuries, and incidental sprains and minor wounds. Emu oil can remedy all these and more with its organic properties. It absorbs more quickly into human skin than other lotions and oils because its chemical composition is very similar to your own, so it penetrates your muscle aches to the core--fast. Our Muscle Relief Roll-On makes it easy to say goodbye to muscular aches without the mess or odor of creams and lotions. If you're in pain today, relax tomorrow as it melts away with our pure emu oil Muscle Relief Roll-On.		
O357	O357-0003	Whether you've just come off the field with flag football bruises or you've woken up to everyday arthritis pain, you can rub away the pain with our anti-inflammatory body lotion. Unlike other creams that are specialized just for arthritis, aches, or sports massages, our anti-inflammatory body lotion can be used for all types of general pain relief.		
O357	O357-0004	Filtered to remove impurities, bacteria, and odor, our pure emu oil is safe and effective for use on eczema, psoriasis, arthritis and other joint pain, muscle aches, stretch marks, and minor wounds, such as cuts and bruises. We offer a variety of products containing pure emu oil to help relieve pain, moisturize the skin and hair, and even keep your pets looking and feeling their best.		

O357	O357-0005	For thousands of years, emu oil and pain relief have been synonymous with the aboriginal peoples of the Australian continent. Now you can experience firsthand how emu oil and pain relief are one in the same. By penetrating the human dermis deeply and quickly, emu oil naturally absorbs and relieves pain far below the surface of your skin. Unlike other lotions, Our Pain Relief won't leave your skin coated or oily--just soothed and relaxed.		
O357	O357-0007	Our psoriasis cream uses the intense moisture of emu oil to soothe and smooth rough, scaly, and even painful or itchy patches of skin caused by psoriasis, eczema, or other skin ailments. It's safe enough to use on baby, but powerful enough to treat any skin condition. Use our psoriasis cream treatment in conjunction with pure emu oil for best results. While not a psoriasis cure, our aid cream will replenish the skin's lost moisture and virtually eliminate pain and itching.		
YONF	YONF-0001	Helps relieve pain or discomfort associated with lower case Arthritis. This cream does not burn or heat the skin, and has a natural scent. This product is comprised of a moisturizing base of organic macadamia nut oil, shea nut oil, avocado oil, palm kernel oil & Hawaiian kikai nut oil (all naturally extracted).		
KUC3	KUC3-0055	Our Sore Muscle Rub or Lotion Oil for your overworked, overplayed, strained, pulled, aching, throbbing, give-me-a-break-please muscles. It's portable warmth in a tin. Lemon-ginger scented fragrance, penetrates so deep you'll want to rub it on for the scent alone.		
WG58	WG58-0002	Unique formulation for relieving joint and muscle pain. It contains comfrey and arnica in a liposome base that penetrates the skin rapidly. Provides significant and rapid relief of joint and muscle pain associated with arthritis and injuries.		
WG58	WG58-0010	Our Liposomes is similar to our pain formula; however, it is in a premium liposome base with Arnica as the active ingredient. It is effective for a wide range of pain, including back or neck, joint and muscle, neuropathy associated with diabetes, and shingles. About the ingredients; Liposomes are manufactured using soybean lecithin and are very compatible with the human skin. Comfrey is recognized as having healing properties Arnica is very good for relieving pain and reducing bruising. Other ingredients include jojoba oil, castor oil, olive oil, and glycerine.		
U08Q	U08Q-0001	For relief of bruises, sprains, sore muscles, strains and dislocations. Contains 100% pure and natural infused oil of Arnica flower, natural essential oil of Wintergreen herb, and 100% pure and natural essential oil of Tea Tree leafy twig in a base of superfine Lanolin. Contains Ethanol.		
U08Q	U08Q-0003	Suitable for all ages. For relief of bruises and sprains. Contains 100% pure and natural essential oil of Tea Tree leafy twig in a base of super fine Lanolin.		
A73E	A73E-0001	This salve works fast and effectively on muscle aches, joints and tension. It also helps heal sprains, bruising and swelling. Rubbed on temples and back of neck for headaches, this salve will stimulate circulation and healing		
DH45	DH45-0006	Rub this cinnamon scented concoction into tired, sore, aching muscles, and all of a sudden, you'll feel warm, soothing relief!		

	NH8P	NH8P-0006	Emu Oil, used by the Aborigines for thousands of years to heal burns, wounds, and injuries, is now well known around the world. It is a unique natural emollient proven to rebuild fragile skin and reduce signs of aging. shown to be an anti-inflammatory agent, a pain reducer, and an active ingredient carrier, Emu Oil also has the potential to lower cholesterol. Its specific characteristics present a new frontier for innovative 21st century products.		
	N512	N512-0003	These scented Muscle Rubs soothe over-tired achy muscles and tension headaches fast. Our customers say it works every time!		
	BOPR	BOPR-0005	Gently warming and light orange in color, by virtue of our specially formulated Cayenne Pepper Extract. Cayenne is naturally anti-inflammatory and has been shown to block pain without negative side effects. The Ginger, Cardamom, Rosemary, and Lemongrass essential oils are also good for muscle and joint soothing. The fragrance helps to calm, center and strengthen the emotions. Used prior to physical activity, Sore Muscle Rub helps keep muscles and joints warm and loose. And, it's good for the skin. Ingredients: Organic Extra Virgin Olive Oil, Castor Oil, Beeswax, Herbal Extracts of Cayenne, Ginger, and Rosehip, and pure essential oils of Ginger, Rosemary, Cardamom, Lemongrass, Sage, and Thyme.		
	VZ7Q	VZ7Q-0002	A traditional herbal remedy made with arnica for the symptomatic relief of muscular pain, stiffness and to help reduce swelling after minor bumps, bruises or sprains.		
Turbine Drip Oils	RGWJ	RGWJ-0044	Our are fully formulated ultimately biodegradable vegetable based high performance turbine oils. They are recommended for use in drip lubrication systems for water well line shaft bearings, irrigation systems, etc. Performance is enhanced by use of the Stabilized HOBS's natural composition, which provides an oily boundary film. The super high viscosity index of the Stabilized HOBS adds additional lubrication qualities to this high performance lubricant. These products should always be used whenever there is a danger of soil or water pollution. The best applications for these products are in the agricultural, construction, forestry, mining and marine industries. These oils are ENVIRONMENTALLY RESPONSIBLE drip oils that are formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable materials.	96	
	JCX4	JCX4-0001	pollution free lubrication of vertical turbine pump equipment with lubricated line shafts in either flanged or threaded and coupled column construction.	95	
	DRL2	DRL2-0005	Readily biodegradable turbine drip for irrigation pumps. High-performance Soybased lubricants for your full range of agricultural and industrial needs.	90	
	XN42	XN42-0036	Our are fully formulated ultimately biodegradable vegetable based high performance turbine oils. These oils are recommended for use in drip lubrication systems for water well line shaft bearings, irrigation systems, etc. Performance is enhanced by use of the Stabilized HOBS's natural composition, which provides an oily boundary film. The super high viscosity index of the Stabilized HOBS adds additional lubrication qualities to this high performance lubricant. These products should always be used whenever there is a danger of soil or water pollution. The		

			best applications for these products are in the agricultural, construction, forestry, mining and marine industries. They are ENVIRONMENTALLY RESPONSIBLE drip oils that are formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable materials.		
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CHAPTER 3.0

TEST METHODS AND PERFORMANCE STANDARDS

USDA recognizes that information related to the functional performance of biobased products is a primary factor in making the decision to purchase these products. Therefore, USDA gathers information on industry standard test methods and performance standards that manufacturers are using to evaluate the functional performance of their products. Test methods are procedures used to provide information on a certain attribute of a product. For example, a test method might determine how many bacteria are killed. Performance standards identify the level at which a product must perform in order for it to be "acceptable" to the entity that set the performance standard. For example, a performance standard might require that a certain percentage (e.g., 95 percent) of the bacteria must be killed through the use of the product.

The primary source of information on the test methods and performance standards are manufacturers of biobased products within these items and related stakeholders. Additional test methods and standards are also identified during meetings of an "interagency council," which is composed of selected Federal stakeholders to the

BioPreferred Program. While USDA's process identifies many of the relevant test methods and performance standards, USDA recognizes that those identified herein do not represent all of the methods and standards that may be applicable for a designated item or for any individual product within the designated item.

The following table presents the functional performance test methods, performance standards, and other material associated with the functional aspects of products identified during the development of the proposed standards for these items and subcategories.

Performance Standards Background Information

Round 6

8/27/2009

Item	Mfg Listed Standard	Organization	Standard Title	Type
Disposable Tableware	BPI	Biodegradable Products Institute Certified	Compostable plastic products will biodegrade and compost satisfactorily in actively managed compost facilities	Product Certification or Other Measure
	ASTM D6868	ASTM International	D6868 Standard Specification for Biodegradable Plastics Used as Coatings on Paper and Other Compostable Substrates	Test Method
	ASTM D6400	ASTM International	D6400 Standard Specification for Compostable Plastics	Test Method
Expanded Polystyrene Foam Recycling Products				
Heat Transfer Fluids				
Ink Removers and Cleaners				
Mulch and Compost	ASTM C16	ASTM International	Standard Test Method for Load Testing Refractory Shapes at High Temperatures	Test Method
	ASTM D18	ASTM International	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates	Test Method
	ASTM D790	ASTM International	D790 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials	Test Method
Multipurpose Lubricants	API GI-1	American Petroleum Institute	The designation API GL-1 denotes lubricants intended for manual transmissions operating under such mild conditions that straight petroleum or refined petroleum oil may be used satisfactorily.	Product Certification or Other Measure

	ASTM D130	ASTM International	D130-04e1 Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test	Test Method
	ASTM D1748	ASTM International	D1748-02 Standard Test Method for Rust Protection by Metal Preservatives in the Humidity Cabinet	Test Method
	ASTM D2266	ASTM International	D2266-01 Standard Test Method for Wear Preventive Characteristics of Lubricating Grease (Four-Ball Method)	Test Method
	ASTM D482	ASTM International	D482-03 Standard Test Method for Ash from Petroleum Products	Test Method
	ASTM D665	ASTM International	D665-06 Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water	Test Method
	ASTM D92	ASTM International	D92-05a Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester	Test Method
	ASTM D97	ASTM International	D97-06 Standard Test Method for Pour Point of Petroleum Products	Test Method
	ASTM D5864	ASTM International	D5864 Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components	Test Method
	ASTM D972	ASTM International	D972-02 Standard Test Method for Evaporation Loss of Lubricating Greases and Oils	Test Method
	ISO 32	International Organization for Standardization	Calibration in analytical chemistry and use of certified reference materials	Product Certification or Other Measure
	ISO 68	International Standards Organization	International Standards Organization Viscosity Grade	Product Certification or Other Measure
	SAE 30	Society of Automotive Engineers	J300 Engine Oil Viscosity Classification	Product Certification or Other Measure
	Vickers I-286-S	Eaton	Tests for pump wear	Test Method
Office Paper	JCP A230	Government Printing Office	A230 Printing Paper – High Yield Coated Opaque Offset (Light Coating)	Performance Standard

Topical Pain Relief				
Turbine Drip Oils	ASTM D2619	ASTM International	D2619 Standard Test Method for Hydrolytic Stability of Hydraulic Fluids (Beverage Bottle Method)	Test Method
	ASTM D2983	ASTM International	D2983 Standard Test Method for Low-Temperature Viscosity of Lubricants Measured by Brookfield Viscometer	Test Method
	ASTM D5864	ASTM International	D5864 Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components	Test Method
	ASTM D665	ASTM International	D665 Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water	Test Method
	ASTM D892	ASTM International	D892 Standard Test Method for Foaming Characteristics of Lubricating Oils	Test Method
	ISO 32	International Organization for Standardization	Calibration in analytical chemistry and use of certified reference materials	Test Method
	ISO 46	International Organization for Standardization	Designates oil viscosity grade.	Performance Standard
	SAE 10W20	Society of Automotive Engineers	J300 Engine Oil Viscosity Classification	Other
	SAE 10W30	Society of Automotive Engineers	J300 Engine Oil Viscosity Classification	Other

CHAPTER 4.0

PURCHASE DATA

Using terms that best match the items in the proposed rule for Round 6, USDA queried the General Services Administration's database for Federal purchases of products within the today's proposed items. The results of this search are presented in the following tables.

USDA notes that this search may result in "no hits" within the GSA database for a particular item. Such a result does not mean that the Federal government does not purchase products within the item.

Federal Purchase Information

Round 6

GSA Schedules e-
Library
GSA Schedule Sale
Query
5/16/2007

Item

Category/SIN	Description	Quarterly Purchases				Total FY
Disposable Tableware		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
302 74	Tableware	\$951,763	\$690,027	\$289,007	\$634,407	\$2,565,204
J302 77	Disposable tableware	\$68,523	\$32,790	\$41,474	\$32,729	\$175,516
Total:						\$2,740,720

Expanded Polystyrene Foam Recycling Products

	No Results					
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Heat Transfer Fluids

	No Results					
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Ink Removers and Cleaners

		Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Jul-Sep 06	Total FY 06
375 362	Biodegradable Cleaner/Degreaser (Solvent Based) Non-Phenolic and Non-petroleum	\$10,910	\$8,323	\$13,473	\$14,322	\$47,028
Total:						\$47,028

Mulch and Compost Materials

	No Results					
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Multi-Purpose Lubricants		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
341 700	Accessories/Replacement Parts - (Directly related to items accepted under this department (includes such things as lubricants, tools, etc.).	\$230,184	\$214,973	\$190,338	\$211,182	\$846,677
Total:						\$846,677

Office Paper		Oct-Dec 06	Apr-Jun 07	Jan-Mar 07	Jul-Sep 07	Total FY 07
19 1	Film, Paper, Chemical, Processing Equipment for Photographic & Radiographic Applications	\$722,294	\$689,307	\$715,169	\$1,165,848	\$3,292,618
75 200	Office Products	\$108,833,420	\$131,805,804	\$117,060,316	\$201,766,315	\$559,465,855
C 7510	Office Supplies	\$779,900	\$692,800	\$472,354	\$1,101,324	\$3,046,378
C 7530	Stationery and Record Forms	\$564	\$81,476	\$3,616	\$1,026	\$86,682
J466 16	Computer Paper - Tabulating Machine Paper	\$6,322	\$18,694	\$10,135	\$22,983	\$58,134
J101 2	Office Supply Products	\$453,206	\$975,682	\$573,312	\$1,207,674	\$3,209,874
Total:						\$569,159,541

Topical Pain Relief						
	No Results					

Turbine Drip Oils		Oct-Dec 06	Apr-Jun07	Jan-Mar 07	Jul-Sep 07	Total FY 07
834 900	Lubricants, Petroleum and Waxes	\$19,939	\$80,339	\$25,449	\$233,446	\$233,446
Total:						\$349,172

CHAPTER 5.0

MATURE MARKETS

Section 2902.5(c)(2) of 7 CFR part 2902, Guidelines for Designating Biobased Products for Federal Procurement, states that USDA will not designate items and their subcategories for preferred procurement that are determined to have mature markets. Mature markets are determined on the basis as to whether the item had significant national market penetration in 1972. Therefore, for each round of items being proposed for designation, USDA conducts a search to determine if any Round 6 item had a significant market share in 1972. In conducting this search, USDA contacted manufacturers, manufacturing associations, and industry researchers. The results of this search are presented in the following memorandum and table.

Marvin R. Duncan, Ph.D.
Office of the Chief Economist
Office of Energy Policy and New Uses
300 7th Street, S.W., Suite 361
Washington, DC 20024

Dear Dr. Duncan:

This letter is sent in response to your request for documentation of the process to determine whether mature markets exist for the biobased products covered in the sixth round of item designations.

Throughout the development phase of this program, Iowa State University representatives have been in direct contact with personnel from manufacturing sales and management, manufacturing associations, and industry researchers. Communications with these stakeholders support our conclusion that, while the concept of products based on renewable resources is not a new one, the majority of manufacturers producing biobased products are relatively new to the market. At this point, we have not explicitly asked manufacturers to tell us if they had a national market share in 1972, however, this could be added to our process in the future, if USDA makes it a requirement.

The following actions have been taken to identify the market status for sixth-round items.

Disposable Tableware – The first company founded that went on to produce biobased disposable tableware was founded in 1950. The one company that provided their biobased products founding year was in 1991.

Expanded Polystyrene Foam Recycling Products – The first identified manufacturer of expanded polystyrene foam recyclers was founded in 1991, but that company did not begin making this product until 2004.

Heat Transfer Fluids – Most of the companies were founded in and began producing biobased products in the 1990s.

Ink Removers and Cleaners – The earliest company founded was in 1950 and the first known year of biobased production is 1990. The majority of the years companies were founded and began biobased production are in the 1990s.

Mulch and Compost – Companies were founded from 1850 up through 2004. However, the majority of the companies did not begin making biobased products until the mid-1970s.

Multi-Purpose Lubricants – The earliest multi-purpose lubricant company was founded in 1931. The first biobased producer started in 1984 with the majority of the other companies starting during the 1990s.

Office Paper – Companies were founded as early as 1898 although most did not begin producing biobased products until 1990.

Topical Pain Relief – All but two of the companies identified were founded after 1978.

Turbine Drip Oils – The companies identified in this item did not begin biobased production began until in 1991.

Based on this information, we feel all of the proposed items qualify as new market development and should be included in the designation ruling. However, if USDA finds it necessary to have confirmation from individual companies, we would be happy to reallocate a portion of this year's testing funds to support this activity.

Sincerely

Steven L. Devlin
06/28/07

Mature Markets Background

Round 6

6/28/2007

Item	Manufacturer	Year Founded	Year Began Biobased
Disposable Tableware	D3P3	2002	2002
	DBEI		
	E2BZ	1950	
	H7W2		
	HC1A	1988	1988
	HPZG		
	IF3W	1988	
	K95M		
	M6TS		
	MX3Z		
	NN16		
	OLX2		
	PXO9	2001	
	S96L	1996	
	S9I7	1999	
	UU3U		
V865	1991	1991	
XPR6	2002	2002	
XWK4			
Expanded Polystyrene Foam Recycling Products	SEQ6	1991	2004
	X3E5	1993	2003
	IOB1		
Heat Transfer Fluids	QR6P		
	X45L	1958	2008
	M2U2		
	VHIC	1993	1997
	R1LM	1995	2004
Ink Removers and Cleaners	B9D5	1987	
	WH7E	1989	2006
	B961	1994	
	Y8EG	1984	1990's

	A3N2	1950	
	WP11	1987	
	H4RZ		
	J4FB	1985	
	W64A		~1997
Mulch and Compost	X2J2	1974	1974
	T5F9	1970	1985
	I657	1994	1994
	B6YO	1985	1985
	IXE5	1938	1989
	TR8G	1994	2001
	T37S	1999	1999
	RX8H	1996	1996
	T38O	1987	2005
	GN0U	1980	1995
	YMV6	2004	2004
	G52R	2000	2000
	XVF4	1996	1996
	HQ50		
	ME74	1978	1986
	V6C4	1988	1988
	QT8K	1962	2007
	B9EU	1959	1959
	NU9A	2002	2004
	PDW2	1950	1988
	IBRG	1980	1980
	IN71	1970	2005
	D54J	1918	2005
	Z744	1962	1962
	TC9V	1985	1985
	UA4Y	1992	1992
	Y4SA	1987	1987
	VQ2C		
	GQ5K	1948	1948
	RF95	1970	1992

S273	1924	
JFC2	2000	2000
M7PP	1925	1925
O5VU	1933	1933
K2H9	1892	1892
S864	1950	1987
U1V8	1980	1980
H4CQ	1977	1977
QY1P	1991	1991
K6LH	1991	1997
R5C8	1991	1991
QCPB	1912	1912
GJ8V	1998	1999
TWOO	2000	2000
P8CV	1983	1991
T35U	2004	1974
X3W1	1949	1949
A833	1923	1989
COL1	1985	1985
NK7L	1996	1996
PF1S	2003	2003
S4O8	1948	
M3JJ	1976	1976
B682	1990	1991
F1JD	1850	1993
N00X	1997	1997
TMXT	1927	1927
Q5LU	1991	1991
CO1J	1958	1958
P1RE	1992	1992
Z381	1929	1929
D1IH	1987	1987
P17W	1983	1983
PI9P	1999	1999
Y08N	1913	1913

	O105	1985	1985
	H3H3	1967	1989
Multipurpose Lubricants	A33R		
	B682	1991	1991
	BP37	1985	1998
	HAKV	1984	1984
	J7A3		
	JCX4		
	KM73	1931	
	MPV9	2000	2000
	RGWJ	1991	1991
	SLWT		
	U922		
	A43G		
	EPBV		
	I677		
	I6TH		
JY3G			
Office Paper	R316	1977	1977
	G1DK	1994	2005
	I5B8	1938	1938
	OA4Q	1992	1992
	UNZW	1992	1997
	O2OR	1947	1992
	Y8C2	1990	1990
	WS82	1999	1999
	WV3A	1990	1990
	A662	2003	2003
	QW4J	1990	1992
	ARWD	1898	1898
	DPKX	1930	1930
Topical Pain Relief	EZ5Y	1995	1995
	K2V1	1983	
	K47Y	2000	2000
	ZK91	1967	1967
	LEO5	1978	1978

	Y191	2001	2001
	RZZ3	1996	1996
	NN56	2001	2001
	Q5ON	1994	1994
	LBH6	1999	1999
	NF90	1990	1990
	FA2X		
	CF5Z	2003	2003
	NPR5	2002	2002
	L281	1990	1991
	DMDM	1993	1993
	B682	1990	1991
	D02G	1996	1996
	O357	2005	2005
	YONF	2001	2005
	KUC3	1994	1994
	WG58	1982	1982
	U08Q		
	A73E	1990	1990
	DH45	1998	1998
	NH8P	1998	1998
	U42A	2000	2000
	N512	2003	2003
	BOPR	1989	1989
	VZ7Q	1921	1921
Turbine Drip Oils	DRL2	1929	1995
	JCX4		
	RGWJ	1991	1991
	XN42	1938	2008