

**TECHNICAL SUPPORT FOR
PROPOSED RULE - ROUND 5 DESIGNATED ITEMS**

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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 5 items are presented in the remainder of this chapter. Additional

information is found in Chapter 2 (product descriptions), Chapter 3 (BEES impact values), and Chapter 4 (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 general purpose household cleaner product was estimated to be 4,080 millimoles of hydrogen ion equivalents for five gallons of general purpose household cleaner product (the functional unit). The impact values used in the BEES analytical tool for each of the Round 5 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 thirteen environmental impact areas. For example, the global warming impact value of a chain and cable lubricant product was estimated to be 9,710 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 0.0061. That is, every one gallon of this chain and cable lubricant is estimated to contribute 0.0061 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 5 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 January 24, 2007.

Title: Chain & Cable Lubricants

Description: Must meet or exceed the requirements of petroleum based bar, chain and sprocket oils and have excellent antiwear characteristics and contain special tackiness agent to reduce "sling off" during high speed chain saw operations. Applications include bar and roller chains and wire ropes and cables.

Manufacturers Identified: 20 manufacturers producing Chain & Cable 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 Chain & Cable Lubricants:

- Biobased Manufacturers Association
- United Soybean Board
- Independent Lubricants Manufacturers Association
- Wire & Cable Industry Suppliers Association

Commercially Available Products Identified: Of the manufacturers identified, 37 Chain & Cable 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 9 Bar and Chain Oils.

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

- Environmental Protection Agency #560/6-82-003 Describes methods for performing testing of chemical substances under the Toxic Substances Control Act
- Environmental Protection Agency #600/4-90-027

Samples Tested for Biobased Content: 9 samples of Chain & Cable 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 Chain & Cable Lubricants indicate a range of content percentages from 80% minimum to 100% maximum biobased content

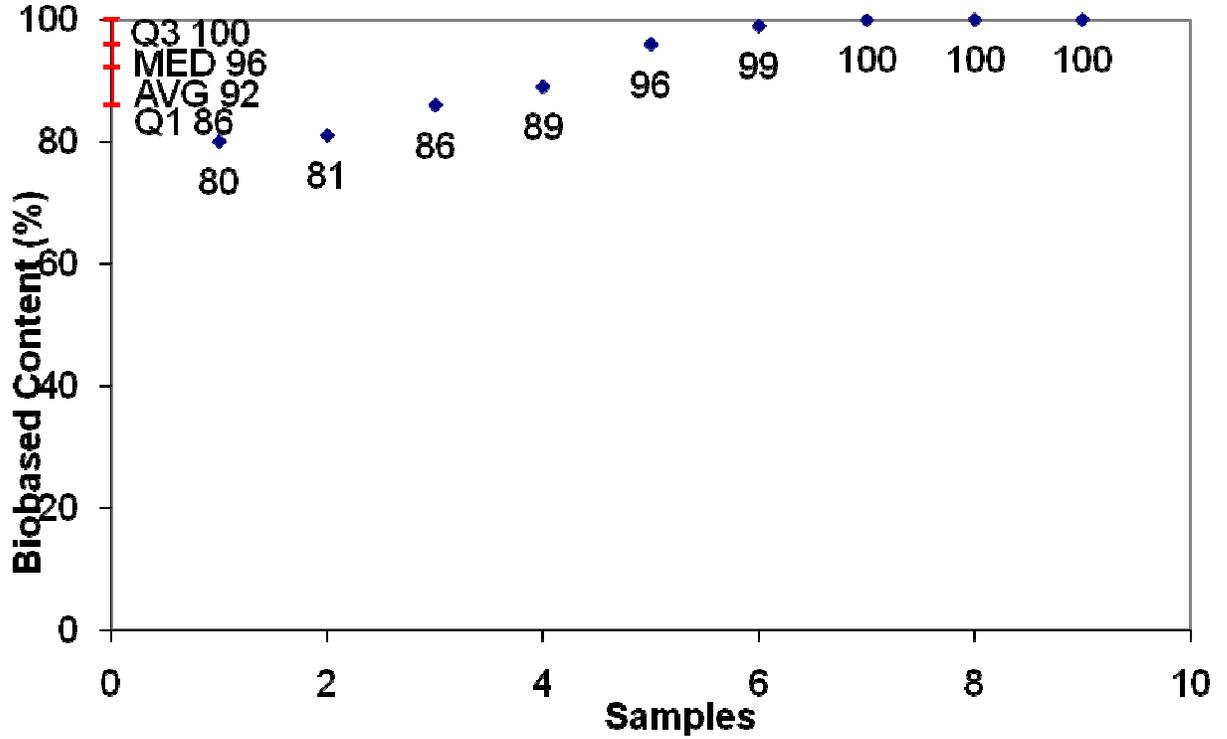
as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 3 Chain & Cable Lubricants have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Chain & Cable Lubricants range from \$10.17 minimum to \$20.20 maximum per usage unit. The environmental scores range from 0.0606 minimum to 0.4202 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

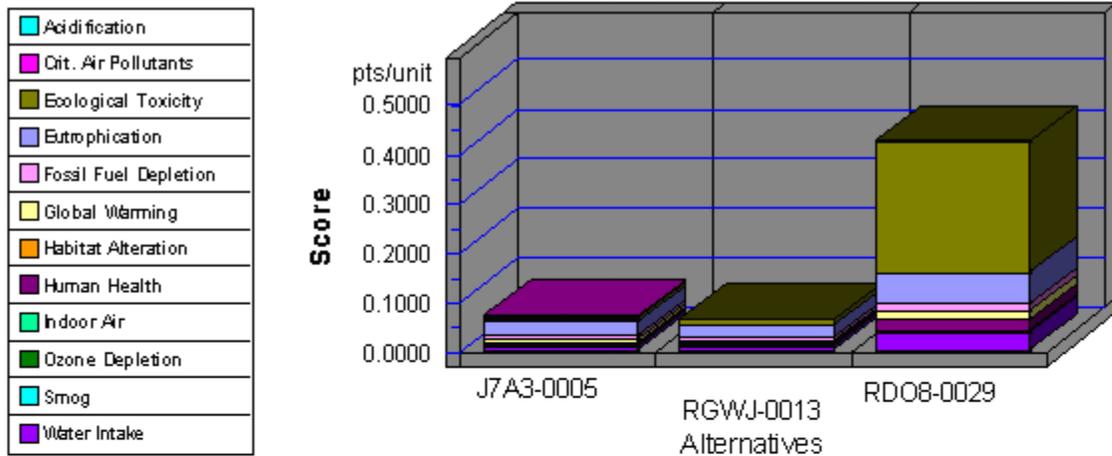
Chain and Cable Lubricants



	Companies	Products	C14	BEES
1	RGWJ	RGWJ-0013	80	yes
2	RGWJ	RGWJ-0054	81	
3	BP37	BP37-0004	86	
4	AJTK	AJTK-0052	89	
5	RDO8	RDO8-0064	96	
6	RDO8	RDO8-0029	99	yes
7	J7A3	J7A3-0005	100	yes
8	RDO8	RDO8-0073	100	
9	WF5U	WF5U-0030	100	

Appendix B - BEES Analysis Results
Units: 1 gallon

Environmental Performance

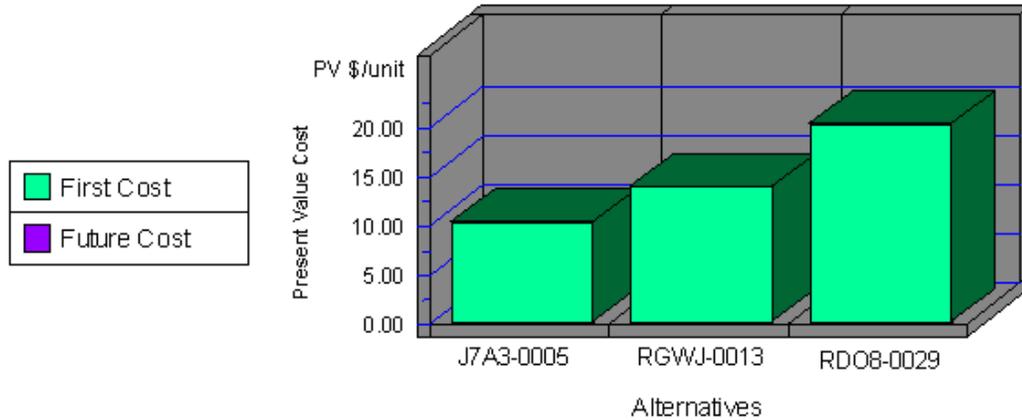


Note: Lower values are better

Category	J7A3-0005	RGWJ-0013	RDO8-0029
Acidification-5%	0.0000	0.0000	0.0000
Crit. Air Pollutants-6%	0.0002	0.0001	0.0003
Ecolog. Toxicity-11%	0.0104	0.0094	0.2630
Eutrophication-5%	0.0272	0.0246	0.0640
Fossil Fuel Depl.-5%	0.0062	0.0056	0.0118
Global Warming-16%	0.0061	0.0054	0.0184
Habitat Alteration-16%	0.0000	0.0000	0.0000
Human Health-11%	0.0043	0.0038	0.0219
Indoor Air-11%	0.0000	0.0000	0.0000
Ozone Depletion-5%	0.0000	0.0000	0.0000
Smog-6%	0.0049	0.0044	0.0038
Water Intake-3%	0.0081	0.0073	0.0370
Sum	0.0674	0.0606	0.4202

Appendix B (continued)

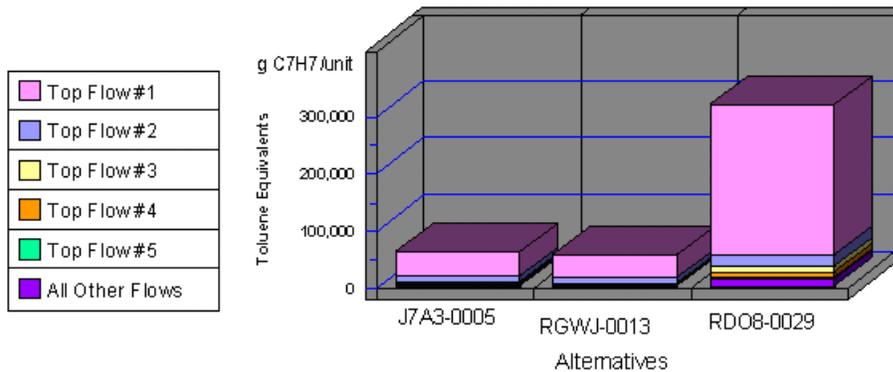
Economic Performance



Category	J7A3-0005	RGWJ-0013	RDO8-0029
First Cost	10.17	13.78	20.20
Future Cost - 3.9%	0.00	0.00	0.00
Sum	10.17	13.78	20.20

*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	J7A3-0005	RGWJ-0013	RDO8-0029
Cancer-(w) Arsenic (As3+, As5+)	42,165.59	39,067.71	261,598.78
Cancer-(w) Phenol (C6H5OH)	10,744.12	10,503.58	19,563.92
Cancer-(a) Dioxins (unspecifc)	3,281.68	1,738.49	9,266.82
Cancer-(a) Arsenic (As)	2,434.22	902.34	8,953.43
Noncancer-(w) Mercury (Hg+, Hg)	531.58	491.86	4,048.35
All Others	2,359.23	2,061.67	12,578.71
Sum	61,516.42	54,765.64	316,010.02

*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 August 24, 2006.

Title: Corrosion Preventatives

Description: A substance used to prevent the deterioration of metals.

Manufacturers Identified: 15 manufacturers producing Corrosion Preventatives 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 Corrosion Preventatives:

- Biobased Manufacturers Association
- United Soybean Board
- Biomass Energy Research Association
- National Association of Corrosion Engineers
- Independent Lubricant Manufacturers Association
- Concrete Corrosion Inhibitors Association

Commercially Available Products Identified: Of the manufacturers identified, 97 Corrosion Preventatives 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 12 Corrosion Preventatives.

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

- National Association of Corrosion Engineers #TM0374-2001 Laboratory Screening Tests to Determine the Ability of Scale Inhibitors to Prevent the Precipitation of Calcium Sulfate and Calcium Carbonate from Solution (for Oil and Gas Production Systems)
- American Society for Testing and Materials #D1748-02 Standard Test Method for Rust Protection by Metal Preservatives in the Humidity Cabinet
- American Society for Testing and Materials #D1735-04 Standard Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus
- American Society for Testing and Materials #D445-04e2 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
- American Society for Testing and Materials #D92-05a Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester

- American Society for Testing and Materials #D97-05a Standard Test Method for Pour Point of Petroleum Products

Samples Tested for Biobased Content: 10 samples of Corrosion Preventatives have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

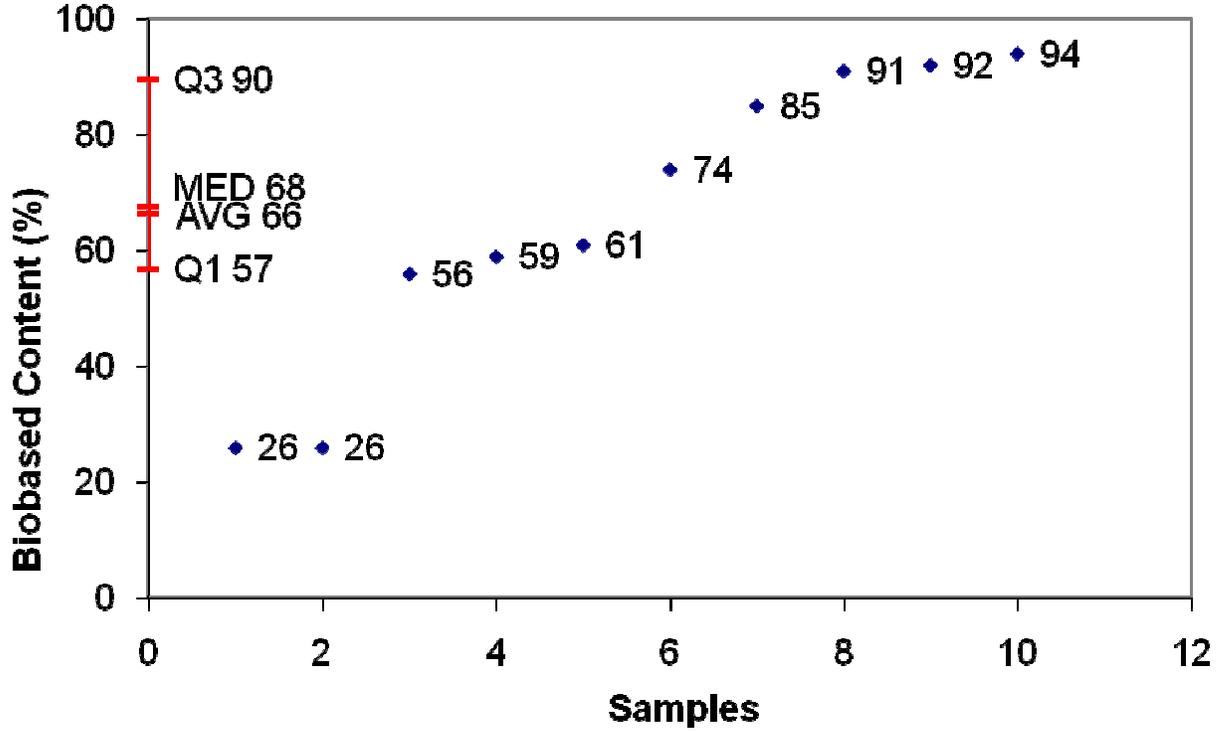
Biobased Content Data: Results from biobased content testing of Corrosion Preventatives indicate a range of content percentages from 26% minimum to 94% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

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

BEES Analysis: The life-cycle costs of the submitted Corrosion Preventatives range from \$77.09 minimum to \$114.75 maximum per usage unit. The environmental scores range from 0.2129 minimum to 0.2684 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

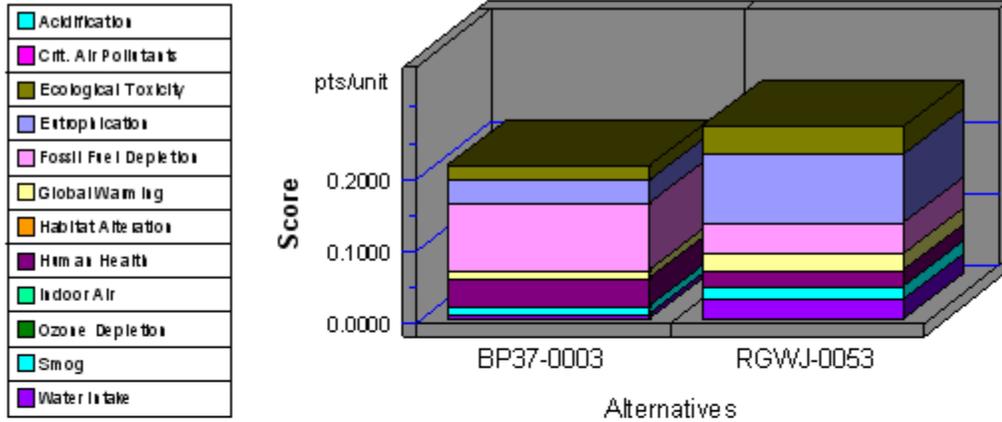
Corrosion Preventatives



	Companies Identified	Products Identified	C14	BEES
1	BP37	BP37-0006	26	
2	BP37	BP37-0003	26	yes
3	BP37	BP37-0005	56	
4	Z8F8	Z8F8-0001	59	
5	RGWJ	RGWJ-0118	61	
6	RGWJ	RGWJ-0053	74	yes
7	BP37	BP37-0016	85	
8	BP37	BP37-0007	91	
9	G944	G944-0017	92	
10	BP37	BP37-0014	94	

Appendix B - BEES Analysis Results
Units: 5 gallons

Environmental Performance

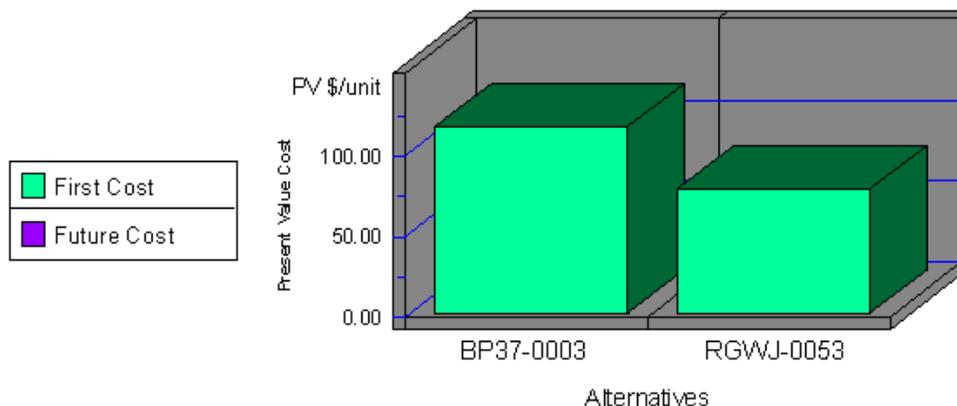


Note: Lower values are better

Category	BP37-0003	RGWJ-0053
Acidification-5%	0.0000	0.0000
Crit. Air Pollutants-6%	0.0006	0.0007
Ecolog. Toxicity-11%	0.0190	0.0389
Eutrophication-5%	0.0312	0.0937
Fossil Fuel Depl.-5%	0.0924	0.0431
Global Warming-16%	0.0124	0.0236
Habitat Alteration-16%	0.0000	0.0000
Human Health-11%	0.0387	0.0228
Indoor Air-11%	0.0000	0.0000
Ozone Depletion-5%	0.0000	0.0000
Smog-6%	0.0097	0.0180
Water Intake-3%	0.0089	0.0276
Sum	0.2129	0.2684

Appendix B (continued)

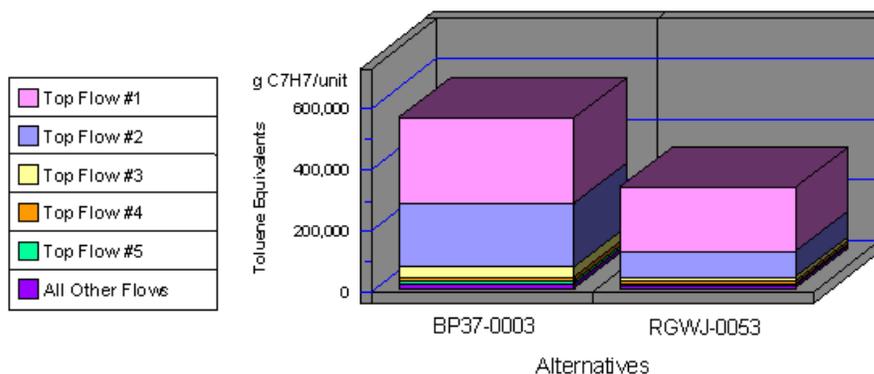
Economic Performance



Category	BP37-0003	RGWJ-0053
First Cost	114.75	77.09
Future Cost-- 3.9%	0.00	0.00
Sum	114.75	77.09

*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	BP37-0003	RGWJ-0053
Cancer--(w) Arsenic (As3+, As5+	278,809.22	204,804.31
Cancer--(w) Phenol (C6H5OH)	210,071.60	83,387.20
Cancer--(a) Dioxins (unspecif	31,476.57	17,308.28
Cancer--(a) Arsenic (As)	13,640.00	7,414.56
Noncancer--(w) Barium (Ba++)	7,583.08	2,725.37
All Others	16,931.76	13,632.38
Sum	558,512.23	329,272.10

*Sorted by five top-most 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 March 26, 2007.

Title: Food Cleaners

Description: Anti-microbial products designed to clean the outer layer of various food products, such as fruit, vegetables, and meats.

Manufacturers Identified: 11 manufacturers producing Food 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 Food Cleaners:

- Biobased Manufacturers Association
- United Soybean Board
- National Restaurant Association

Commercially Available Products Identified: Of the manufacturers identified, 15 Food 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 7 Food Cleaners.

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

- Boeing #D6-7127 Cleaning Interiors of Commercial Transport Aircraft
- US Navy #Navsea 6840 U.S. Navy surface ship (non-submarine) authorized chemical cleaning products and dispensing systems
- South Coast Air Quality Management District - Clean Air: The SCAQMD hereby certifies the above product as a "Clean Air Solvent"
- Federal Test Method Standard #536A Soap and soap products (including synthetic detergents) sampling and testing

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

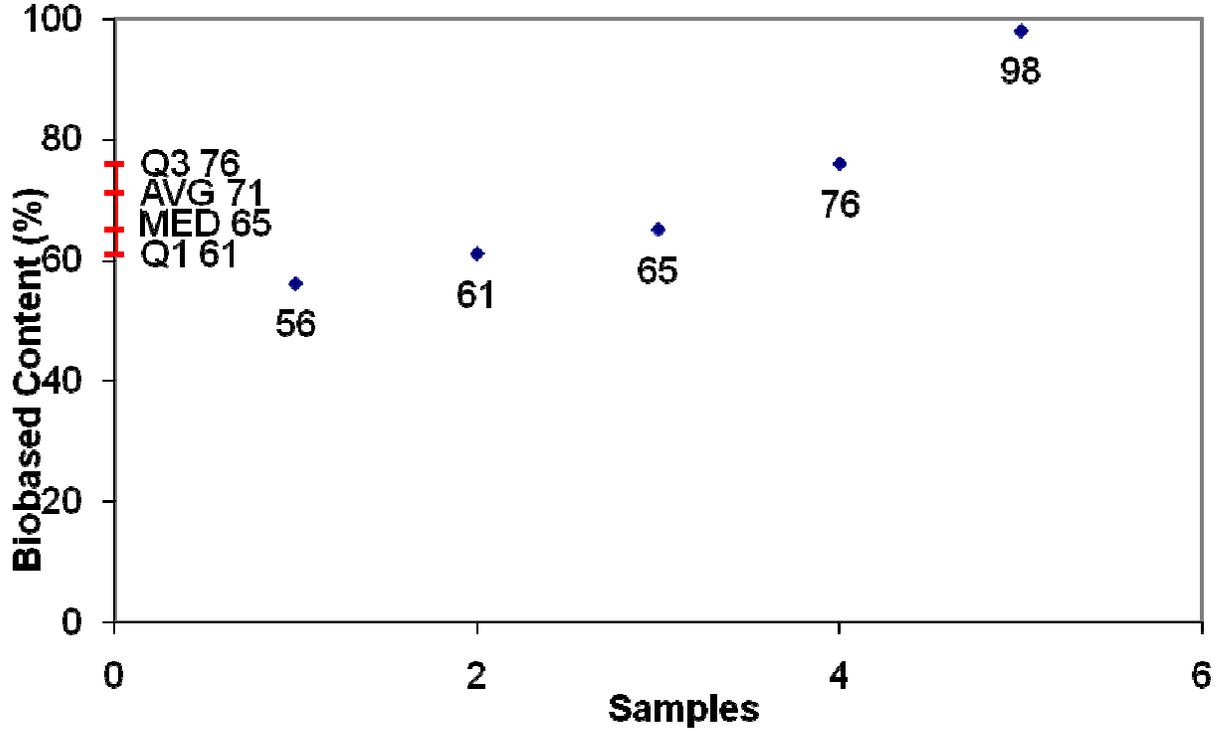
Biobased Content Data: Results from biobased content testing of Food Cleaners indicate a range of content percentages from 56% minimum to 98% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

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

BEES Analysis: The life-cycle costs of the submitted Food Cleaners range from \$4.00 minimum to \$4.00 maximum per usage unit. The environmental scores range from 0.0006 minimum to 0.0006 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

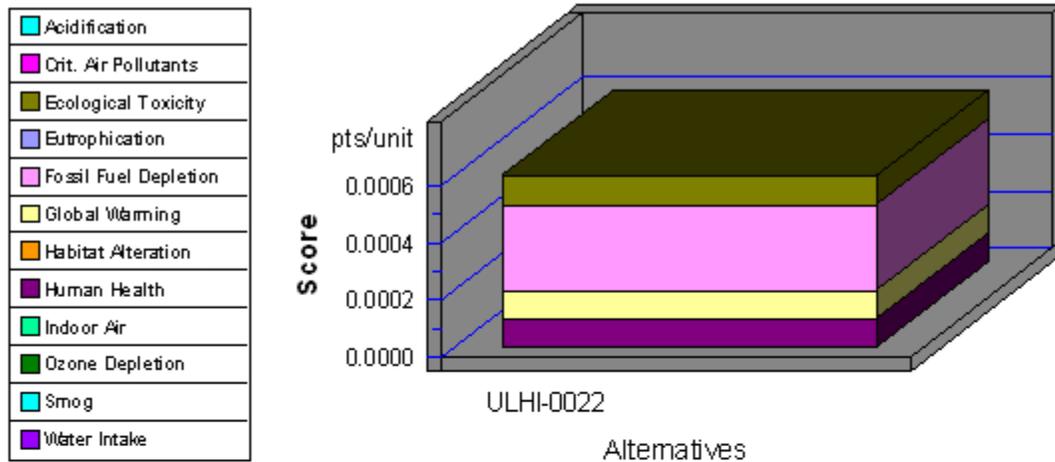
Food Cleaners



	Companies Identified	Products Identified	C14	BEES
1	G944	G944-0014	56	
2	WF5U	WF5U-0031	61	
3	RDO8	RDO8-0028	65	
4	ULHI	ULHI-0022	76	yes
5	CF61	CF61-0001	98	

Appendix B - BEES Analysis Results
Units: 1 Gallon

Environmental Performance

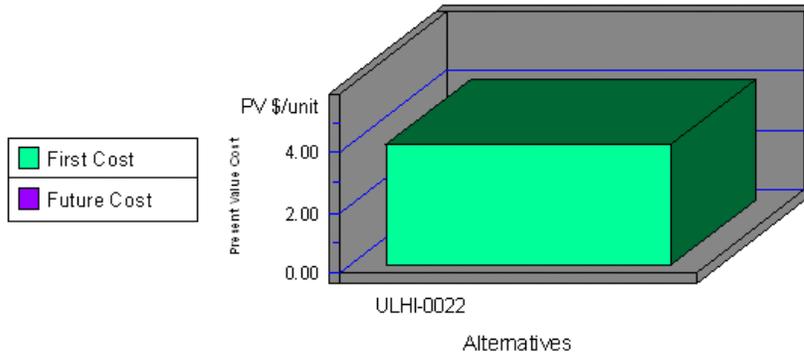


Note: Lower values are better

Category	ULHI-0022
Acidification-5%	0.0000
Crit. Air Pollutants-6%	0.0000
Ecolog. Toxicity-11%	0.0001
Eutrophication-5%	0.0000
Fossil Fuel Depl.-5%	0.0003
Global Warming-16%	0.0001
Habitat Alteration-16%	0.0000
Human Health-11%	0.0001
Indoor Air-11%	0.0000
Ozone Depletion-5%	0.0000
Smog-6%	0.0000
Water Intake-3%	0.0000
Sum	0.0006

Appendix B (continued)

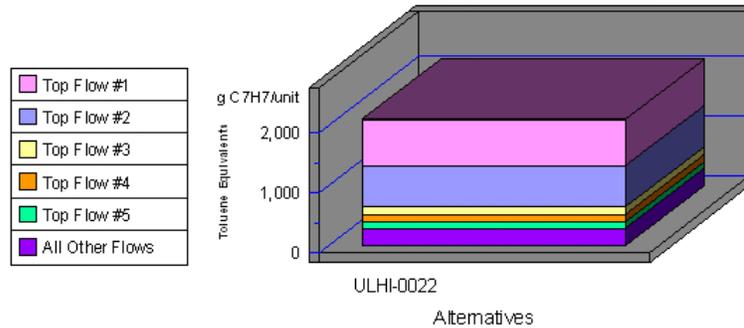
Economic Performance



Category	ULHI-0022
First Cost	4.00
Future Cost-- 3.9%	0.00
Sum	4.00

*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	ULHI-0022
Cancer--(w) Arsenic (As3+, As5+)	777.91
Cancer--(w) Phenol (C6H5OH)	678.32
Cancer--(a) Dioxins (unspecific)	124.45
Cancer--(a) Ethylene Oxide (C2H)	118.43
Cancer--(a) Arsenic (As)	116.81
All Others	291.06
Sum	2,106.98

*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 January 24, 2007.

Title: Forming Lubricants

Description: Products designed to provide lubrication during metalworking applications that are performed under extreme pressure. Such metalworking applications include tube bending, stretch forming, press braking, and swaging.

Manufacturers Identified: 3 manufacturers producing Forming 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 Forming Lubricants:

- Biobased Manufacturers Association
- United Soybean Board
- American Soybean Association
- Precision Metalforming Association
- Tooling & Manufacturing Association
- Society of Manufacturing Engineers
- Ductile Iron Pipe Research Association
- National Association of Manufacturers
- Fabricators and Manufacturers Association International
- Ductile Iron Society
- National Certified Pipe Welding Bureau
- Tube and Pipe Association
- Institute of Industrial Engineers

Commercially Available Products Identified: Of the manufacturers identified, 13 Forming 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 8 Forming Lubricants.

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

- Environmental Protection Agency #560/6-82-003 Describes methods for performing testing of chemical substances under the Toxic Substances Control Act
- Boeing #BAC 5001-4 Flareless Tube End Fabrication

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

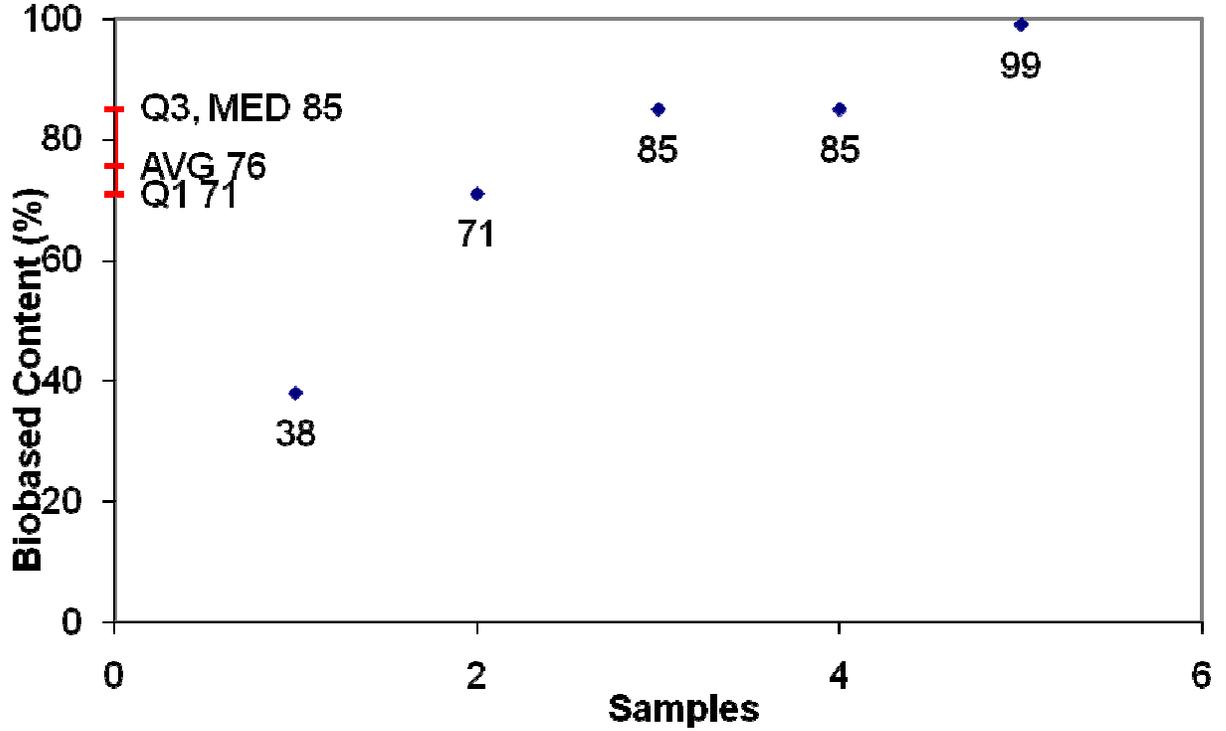
Biobased Content Data: Results from biobased content testing of Forming Lubricants indicate a range of content percentages from 38% minimum to 99% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

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

BEES Analysis: The life-cycle costs of the submitted Forming Lubricants range from \$18.50 minimum to \$18.50 maximum per usage unit. The environmental scores range from 0.0271 minimum to 0.0271 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Forming Lubricants

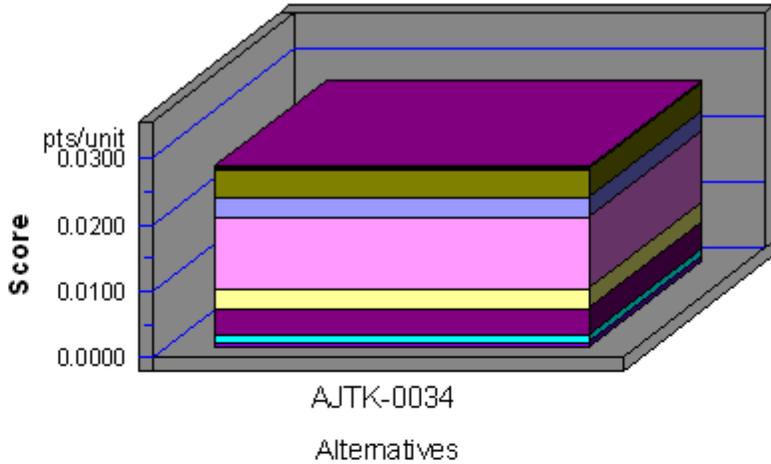


	Companies Identified	Products Identified	C14	BEES
1	WF5U	WF5U-0016	38	
2	RDO8	RDO8-0058	71	
3	RDO8	RDO8-0004	85	
4	KM73	KM73-0001	85	
5	WF5U	WF5U-0017	99	

Appendix B - BEES Analysis Results
Units: 1 Gallon

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

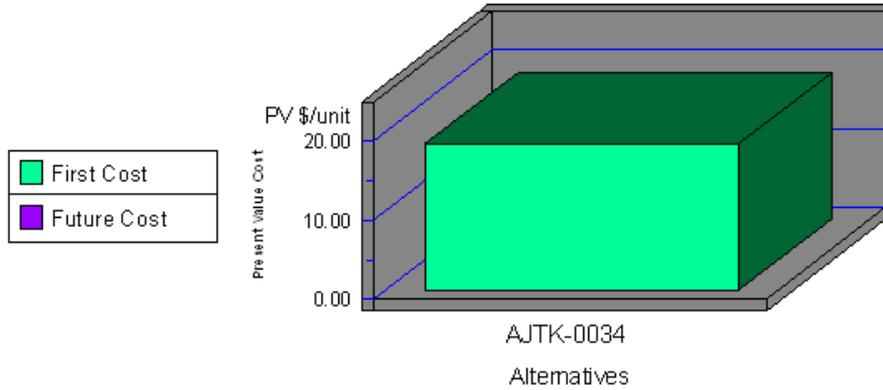


Note: Lower values are better

Category	AJTK-0034
Acidification-5%	0.0000
Crit. Air Pollutants-6%	0.0001
Ecolog. Toxicity-11%	0.0044
Eutrophication-5%	0.0029
Fossil Fuel Depl.-5%	0.0108
Global Warming-16%	0.0028
Habitat Alteration-16%	0.0000
Human Health-11%	0.0042
Indoor Air-11%	0.0000
Ozone Depletion-5%	0.0000
Smog-6%	0.0010
Water Intake-3%	0.0009
Sum	0.0271

Appendix B (continued)

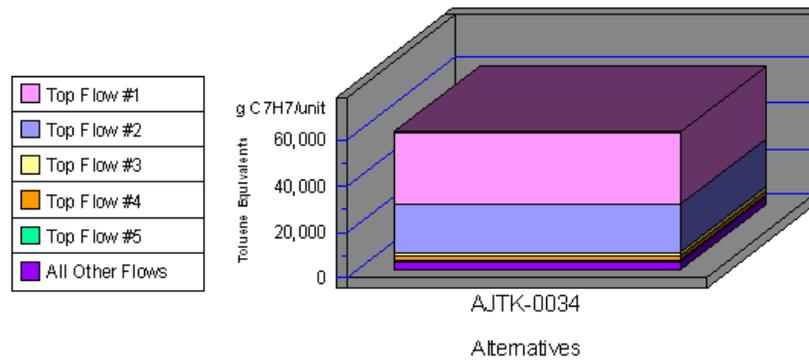
Economic Performance



Category	AJTK-0034
First Cost	18.50
Future Cost- 3.9%	0.00
Sum	18.50

*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	AJTK-0034
Cancer-(w) Arsenic (As3+, As5+)	31,323.01
Cancer-(w) Phenol (C6H5OH)	20,445.90
Cancer-(a) Arsenic (As)	1,797.68
Cancer-(a) Dioxins (unspecific)	1,742.32
Noncancer-(a) Mercury (Hg)	810.64
All Others	3,895.42
Sum	60,014.97

*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 January 24, 2007.

Title: Gear Lubricants

Description: Products, such as greases or oils, that are designed to reduce friction when applied to a toothed machine part (such as a wheel or cylinder) that meshes with another toothed part to transmit motion or to change speed or direction.

Manufacturers Identified: 9 manufacturers producing Gear 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 Gear Lubricants:

- Biobased Manufacturers Association
- United Soybean Board
- American Gear Manufacturers Association
- Independent Lubricants Manufacturers Association
- National Lubricating Grease Institute
- Society of Automotive Engineers
- Society of Manufacturing Engineers

Commercially Available Products Identified: Of the manufacturers identified, 24 Gear 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 9 Gear Lubricants.

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

- American Petroleum Institute #API GL-1 Designates the type of service characteristics of automotive spiral-bevel and worm gear axles as well as some manually operated transmissions operating under such mild conditions of low unit pressures and sliding velocities that straight mineral oil can be used satisfactorily. Oxidation and rust inhibitors, defoamers and pour depressants may be utilized to improve the characteristics of lubricants for this service. Frictional modifiers and extreme pressure agents shall not be utilized.
- American Petroleum Institute #API GL-2 Designates the type of service characteristics of automotive type worm gear axles operating under such conditions of load, temperature

and sliding velocities that lubricants satisfactory for API GL-1 service will not suffice. (obsolete)

- American Petroleum Institute #API GL-3 Lubricant with light EP effect for transmissions and non-hypoid gear drives. Used by several vehicle manufacturers for first fill of transmissions.
- American Petroleum Institute #API GL-4 is generally equivalent to military specification MIL-L-2105 for manual transmissions and spiral bevel gears engaged in moderate service. API GL-4 rates a gear lubricant's performance. Designates the type of service characteristics of gears, particularly hypoid in passenger cars and other automotive equipment operated under high-speed: shock-load, low-torque, and low-speed: high-torque conditions. Environmental Protection Agency #EPA 560/6-82-003 Describes methods for performing testing of chemical substances under the Toxic Substances Control Act
- American Society for Testing and Materials #D1404/D1404M-99(2003) Standard Test Method for Estimation of Deleterious Particles in Lubricating Grease
- American Society for Testing and Materials #D2270-04 Standard Practice for Calculating Viscosity Index From Kinematic Viscosity at 40 and 100°C
- American Society for Testing and Materials #D2619-95(2002)e1 Standard Test Method for Hydrolytic Stability of Hydraulic Fluids (Beverage Bottle Method)
- American Society for Testing and Materials #D2711-01a Standard Test Method for Demulsibility Characteristics of Lubricating Oils
- American Society for Testing and Materials #D445-04e2 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
- American Society for Testing and Materials #D5864-05 Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components
- American Society for Testing and Materials #D665-03 Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water
- American Society for Testing and Materials #D892-03 Standard Test Method for Foaming Characteristics of Lubricating Oils
- American Society for Testing and Materials #D92-05a Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- American Society for Testing and Materials #D97-05a Standard Test Method for Pour Point of Petroleum Products
- American Society for Testing and Materials #D974-04 Standard Test Method for Acid and Base Number by Color-Indicator Titration
- International Organization for Standardization #ISO 150:2006 Specifies the requirements and the corresponding methods of test for raw, refined and boiled linseed oils for paints and varnishes.
- Environmental Protection Agency #560/6-82-003 Describes methods for performing testing of chemical substances under the Toxic Substances Control Act
- ASTM D2266 Standard Test Method for Wear Preventive Characteristics of Lubricating Grease (Four-Ball Method)
- DIN 51517– Lubricants – Lubricating oils – Part 1: Lubricating oils C Requirements
- FGZ (DIN51354) Gear wheel twisting/tension testing machine for lubricants

- ISO 46 – oil viscosity grade
- SAE 30 – viscosity grade
- SAE GearGrade 80W90 – viscosity grade
- ISO 90 oil viscosity grade
- AGMA 2-8A R&O and EP gear lubes grades
- ANSI/AGMA 9005-E02 Industrial Gear Lubricant
- DB s1.53.101 Meets or exceeds requirements of David Brown performance requirement

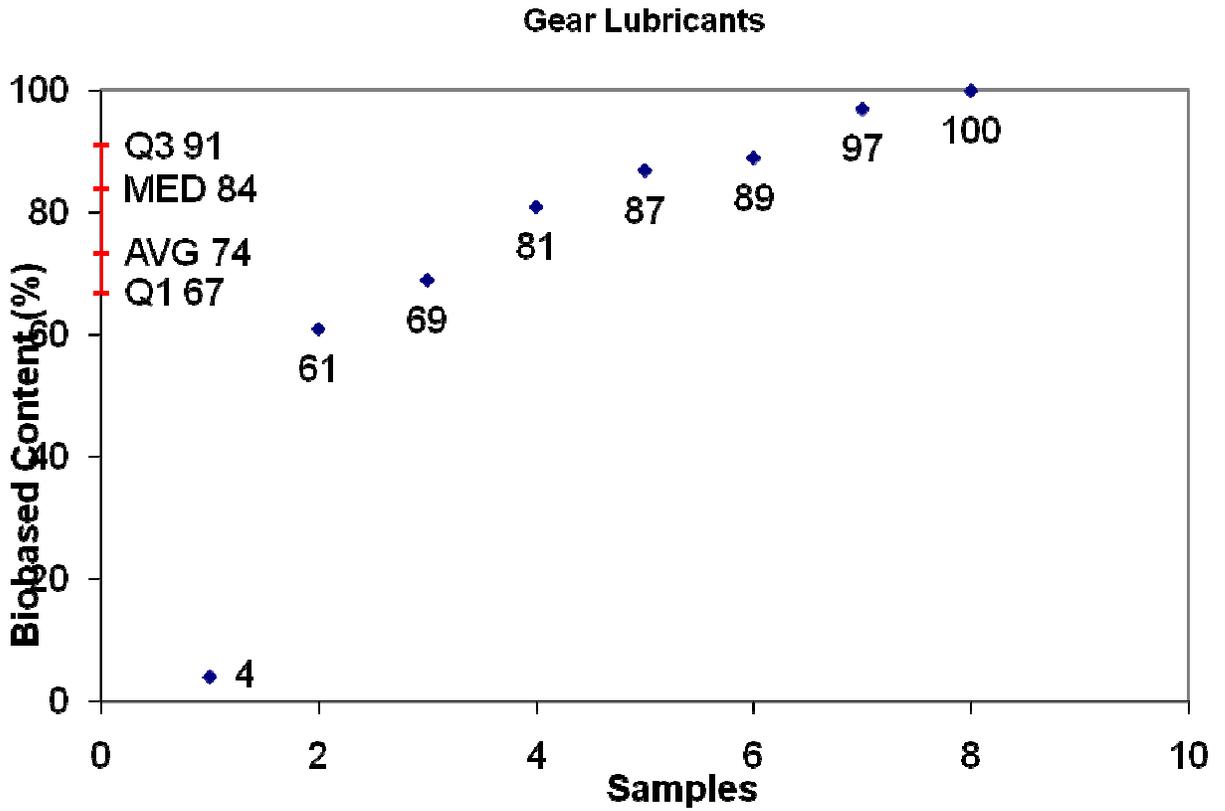
Samples Tested for Biobased Content: 8 samples of Gear Lubricants have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

Biobased Content Data: Results from biobased content testing of Gear Lubricants indicate a range of content percentages from 4% 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 Gear Lubricants have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Gear Lubricants range from \$63.08 minimum to \$87.50 maximum per usage unit. The environmental scores range from 0.1856 minimum to 0.3405 maximum. A detailed summary of the BEES results is included as Appendix B.

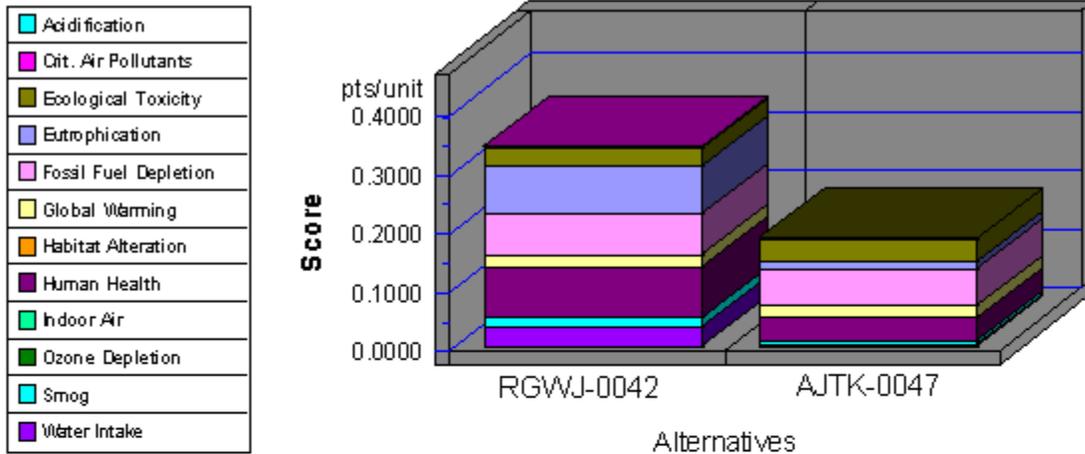
Appendix A - Biobased Content Data



	Companies Identified	Products Identified	C14	BEES
1	J7A3	J7A3-0003	4	
2	RGWJ	RGWJ-0041	61	
3	RGWJ	RGWJ-0042	69	yes
4	AJTK	AJTK-0047	81	yes
5	RGWJ	RGWJ-0040	87	
6	N1H5	N1H5-0011	89	
7	RDO8	RDO8-0068	97	
8	RDO8	RDO8-0097	100	

Appendix B - BEES Analysis Results
Functional Unit: 5 gallons

Environmental Performance

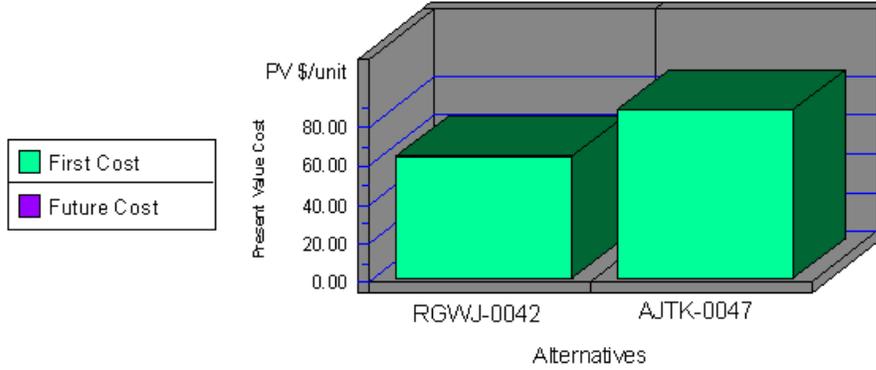


Note: Lower values are better.

Category	RGWJ-0042	AJTK-0047
Acidification-5%	0.0000	0.0000
Crit. Air Pollutants-6%	0.0009	0.0009
Ecolog. Toxicity-11%	0.0326	0.0387
Eutrophication-5%	0.0802	0.0122
Fossil Fuel Depl.-5%	0.0679	0.0641
Global Warming-16%	0.0224	0.0214
Habitat Alteration-16%	0.0000	0.0000
Human Health-11%	0.0867	0.0383
Indoor Air-11%	0.0000	0.0000
Ozone Depletion-5%	0.0000	0.0000
Smog-6%	0.0164	0.0064
Water Intake-3%	0.0334	0.0036
Sum	0.3405	0.1856

Appendix B (continued)

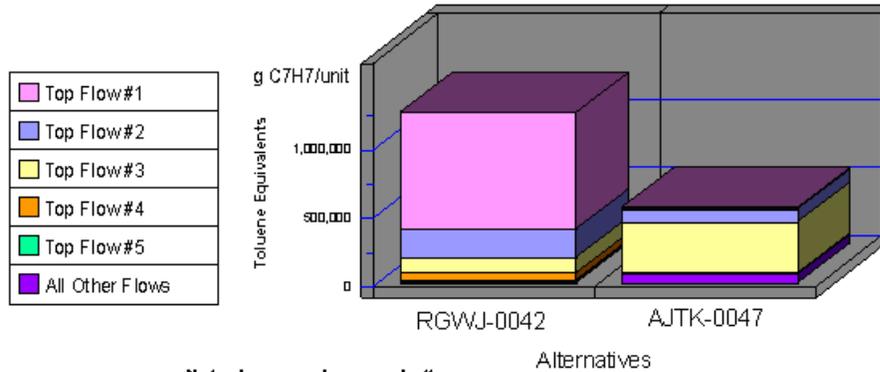
Economic Performance



Category	RGWJ-0042	AJTK-0047
First Cost	63.08	87.50
Future Cost- 3.9%	0.00	0.00
Sum	63.08	87.50

*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	RGWJ-0042	AJTK-0047
Cancer-(a) Dioxins (unspecifc)	850,097.09	10,070.97
Cancer-(w) Arsenic (As3+, As5+	211,688.49	88,117.48
Cancer-(w) Phenol (C6H5OH)	116,261.00	379,251.40
Noncancer-(a) Dioxins (unspeci	50,758.00	601.32
Cancer-(a) Arsenic (As)	5,728.80	9,792.82
All Others	17,086.00	64,920.27
Sum	1,251,619.37	552,754.26

*Sorted by five top most 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 August 9, 2006. Additional performance standards added as of March 26, 2007.

Title: General Purpose Household Cleaners

Description: Products designed to clean multiple common household surfaces. This designated item does not include products that are formulated for use as disinfectants. Task-specific cleaning products, such as spot and stain removers, upholstery cleaners, bathroom cleaners, glass cleaners, etc., are not included in this item.

Manufacturers Identified: 16 manufacturers producing General Purpose Household 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 General Purpose Household Cleaners:

- Biobased Manufacturers Association
- United Soybean Board
- Soap and Detergent Association

Commercially Available Products Identified: Of the manufacturers identified, 24 General Purpose Household 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 3 General Purpose Household Cleaners.

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

- Federal Test Method Standard #536A Soap and Soap Products (Including synthetic detergents) sampling and testing
- Green Seal Green Seal Environmental Standard for Household Cleaners
- Boeing #D6-7127 Cleaning Interiors of Commercial Transport Aircraft
- South Coast Air Quality Management District certified "Clean Air Solvent"
- United States Navy Navsea #6840 Surface ship (non-submarine) authorized chemical cleaning products and dispensing systems.
- American Society for Testing and Materials D1308-02e1 Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes

Samples Tested for Biobased Content: 9 samples of General Purpose Household Cleaners have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

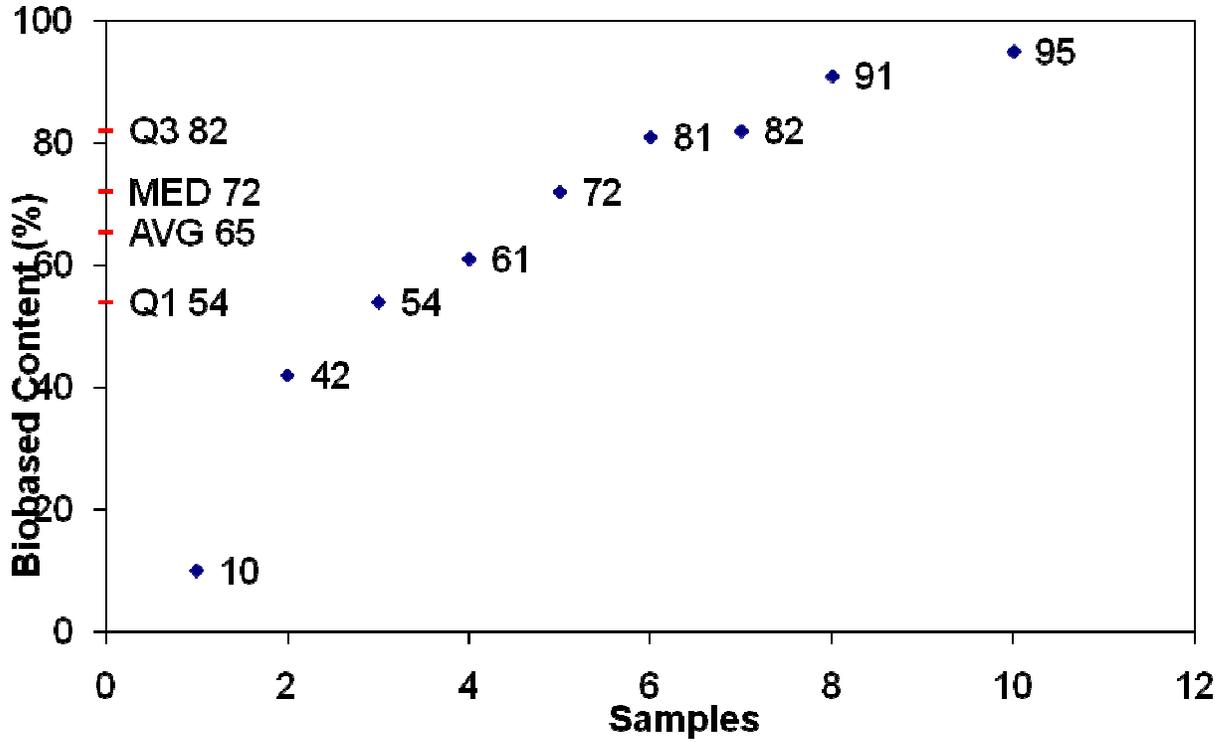
Biobased Content Data: Results from biobased content testing of General Purpose Household Cleaners indicate a range of content percentages from 10% minimum to 95% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

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

BEES Analysis: The life-cycle costs of the submitted General Purpose Household Cleaners range from \$27.50 minimum to \$65.63 maximum per usage unit. The environmental scores range from 0.0127 minimum to 0.1005 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

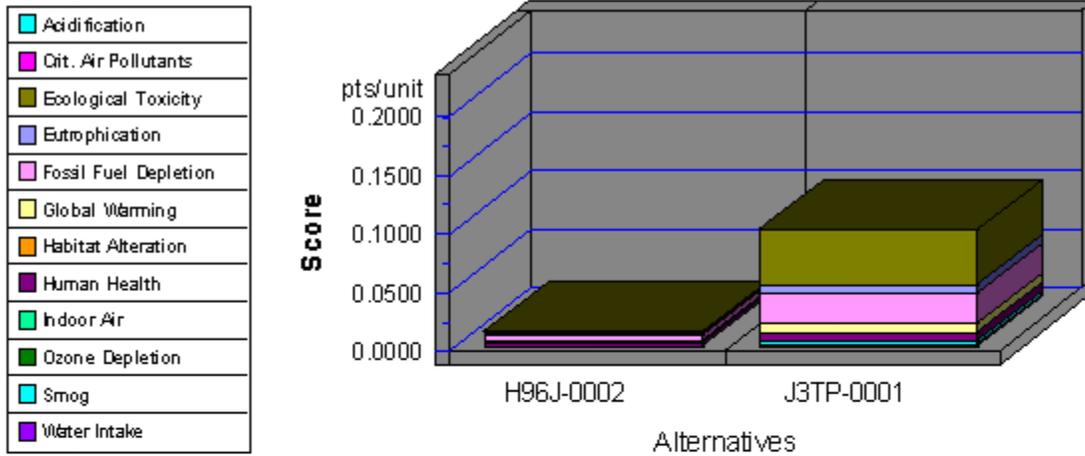
General Purpose Household Cleaners



	Companies Identified	Products Identified	C14	BEES
1	V865	V865-0010	10	
2	FCM9	FCM9-0007	42	
3	H96J	H96J-0002	54	yes
4	C9PX	C9PX-0006	61	
5	ULHI	ULHI-0019	72	
6	X4H4	X4H4-0006	81	
7	ULHI	ULHI-0036	82	
8	J3TP	J3TP-0001	91	yes
9	RDO8	RDO8-0038	95	

Appendix B - BEES Analysis Results
Units: 5 gallons

Environmental Performance

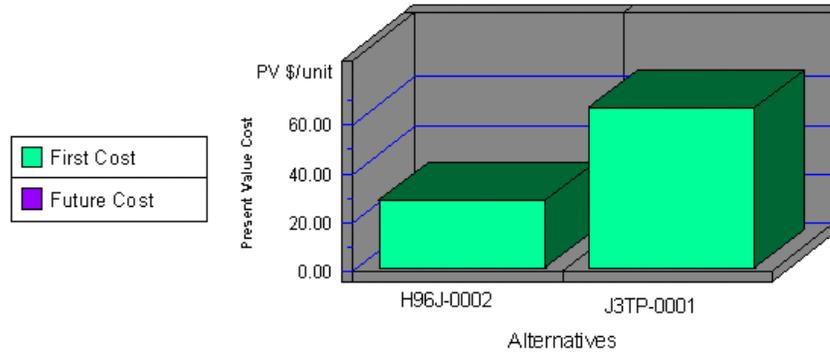


Note: Lower values are better

Category	H96J-0002	J3TP-0001
Acidification-5%	0.0000	0.0000
Crit. Air Pollutants-6%	0.0002	0.0003
Ecolog. Toxicity-11%	0.0012	0.0473
Eutrophication-5%	0.0008	0.0072
Fossil Fuel Depl.-5%	0.0055	0.0247
Global Warming-16%	0.0019	0.0085
Habitat Alteration-16%	0.0000	0.0000
Human Health-11%	0.0021	0.0076
Indoor Air-11%	0.0000	0.0000
Ozone Depletion-5%	0.0000	0.0000
Smog-6%	0.0009	0.0027
Water Intake-3%	0.0001	0.0022
Sum	0.0127	0.1005

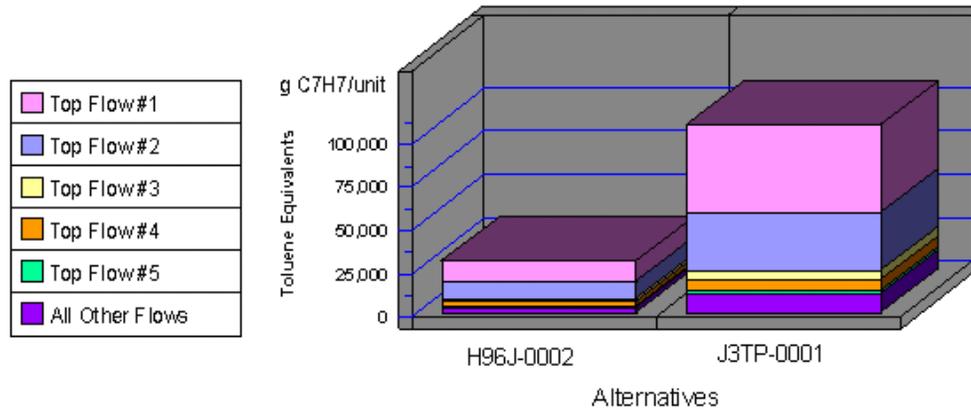
Appendix B (continued)

Economic Performance



*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	H96J-0002	J3TP-0001
Cancer-(w) Arsenic (As3+, As5+)	11,978.47	50,942.92
Cancer-(w) Phenol (C6H5OH)	10,022.50	33,515.24
Cancer-(a) Arsenic (As)	1,755.71	5,602.89
Cancer-(a) Dioxins (unspecifie)	2,795.36	5,552.44
Noncancer-(a) Mercury (Hg)	918.47	2,406.89
All Others	3,150.23	11,073.66
Sum	30,620.75	109,094.04

*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 January 24, 2007.

Title: Industrial Cleaners

Description: Products used to remove contaminants, such as adhesives, inks, paint, dirt, soil, and grease, from parts, products, tools, machinery, equipment, vessels, floors, walls, and other production-related work areas. The cleaning products within this item are usually solvents, but may take other forms. They may be used in either straight solution or diluted with water in pressure washers, or in hand wiping applications in industrial or manufacturing settings, such as inside vessels. Task-specific cleaners used in industrial settings, such as parts wash solutions, are not included in this definition.

Manufacturers Identified: 59 manufacturers producing Industrial 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 Industrial Cleaners:

- Biobased Manufacturers Association
- United Soybean Board
- Biomass Energy Research Association
- Power Washers of North
- International Window Cleaning Association
- WaterJet Technology Association
- American Solvents Council
- American Agricultural Economics Association
- American Soybean Association

Commercially Available Products Identified: Of the manufacturers identified, 122 Industrial 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 36 Industrial Cleaners.

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

- Green Seal #GS-37 Green Seal Environmental Standard for General-Purpose, Bathroom, Glass, and Carpet Cleaners Used for Industrial and Institutional Purposes
- Environmental Protection Agency National Contingency Plan

- American Society for Testing and Materials #D445-04e2 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
- American Society for Testing and Materials #D446-04 Standard Specifications and Operating Instructions for Glass Capillary Kinematic Viscometers
- American Society for Testing and Materials #D92-05a Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- Boeing #BAC 5750 Solvent Cleaning
- Environmental Protection Agency Method #24 Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings
- Environmental Protection Agency SNAP Significant New Alternatives Policy: Section 612 of the Clean Air Act (CAA) requires EPA to establish a program to identify alternatives to Class I (CFCs, halons, carbon tetrachloride, methyl chloroform, methyl bromide, and HBFCs) and Class II (HCFCs) ozone-depleting substances and to publish lists of acceptable and unacceptable substitutes. Upon promulgation of the final rule, it is illegal to replace a Class I or Class II substance with any substitute which the Administrator determines may present adverse effects to human health or the environment where other substitutes have been identified that reduce overall risk and are currently or potentially available.
- American Society for Testing and Materials D600-90(2001) Standard Specification for Liquid Paint Driers
- American Society for Testing and Materials D13-02 Standard Specification for Spirits of Turpentine
- American Society for Testing and Materials D235-02 Standard Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)
- American Society for Testing and Materials D1364-02 Standard Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)
- American Society for Testing and Materials D3278-96(2004)e1 Standard Specification for 2-Ethoxyethyl Acetate (99 % Grade)
- American Society for Testing and Materials D1836-02 Standard Specification for Commercial Hexanes

Samples Tested for Biobased Content: 32 samples of Industrial 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 Industrial Cleaners indicate a range of content percentages from 2% 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.

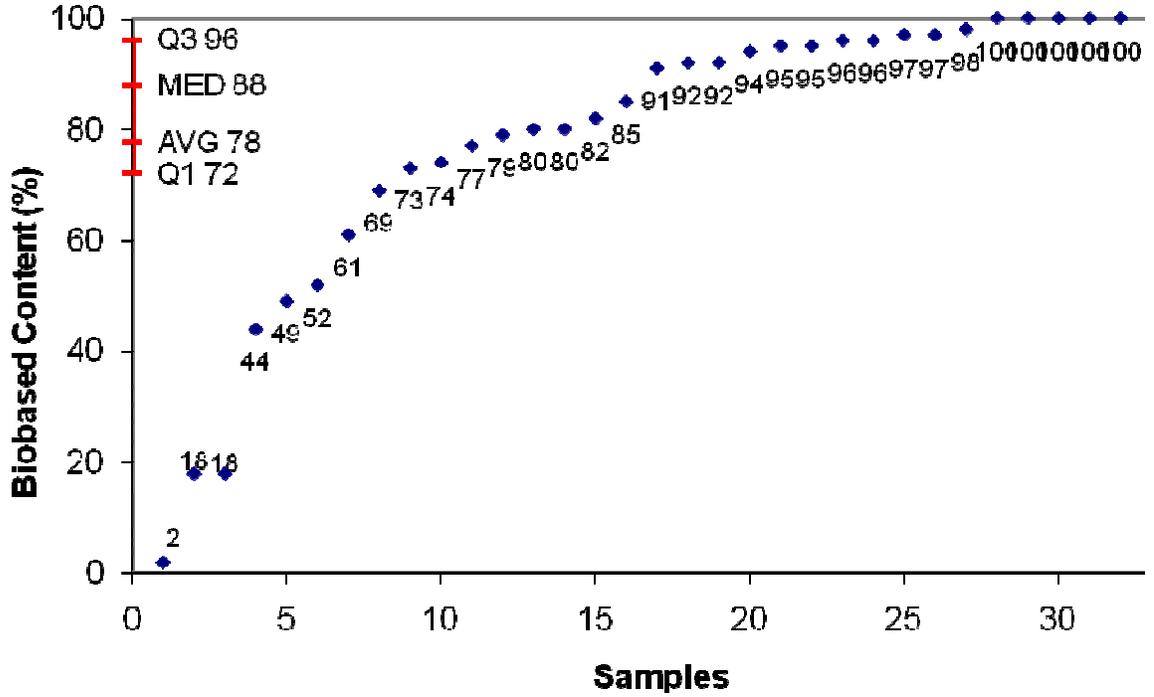
Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 3 Industrial Cleaners have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Industrial Cleaners range from \$8.85 minimum to \$84.95 maximum per usage unit. The environmental scores range from 0.0152

minimum to 0.1641 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Industrial Cleaners

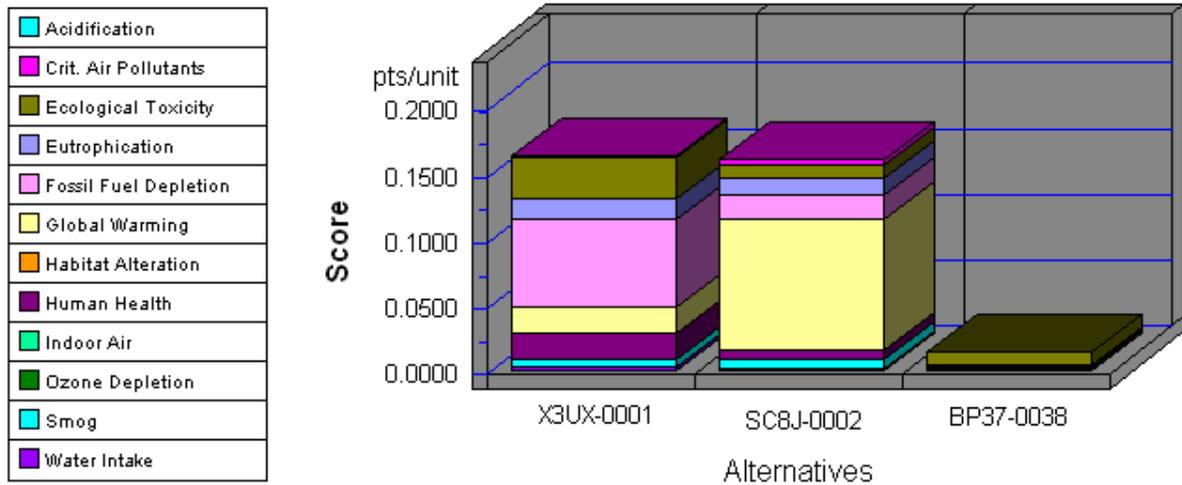


	Companies Identified	Products Identified	C14	BEES
1	X3UX	X3UX-0002	2	
2	MODM	MODM-0003	18	
3	RYB8	RYB8-0010	18	
4	TXH8	TXH8-0013	44	
5	BP37	BP37-0013	49	
6	K4U8	K4U8-0010	52	
7	L8O1	L8O1-0002	61	
8	SC8J	SC8J-0002	69	yes
9	U4WQ	U4WQ-0008	73	
10	DRL2	DRL2-0006	74	
11	RDO8	RDO8-0046	77	
12	TXH8	TXH8-0012	79	
13	U4WQ	U4WQ-0003	80	
14	MG2M	U4WQ-0003	80	
15	X3UX	X3UX-0001	82	yes
16	BP37	BP37-0038	85	yes
17	RDO8	RDO8-0057	91	
18	G944	G944-0016	92	
19	RGWJ	RGWJ-0093	92	
20	M7FY	M7FY-0002	94	
21	O9MM	O9MM-0012	95	
22	RYB8	RYB8-0004	95	

23	W916	W916-0004	96	
24	RDO8	RDO8-0062	96	
25	RDO8	RDO8-0045	97	
26	O9MM	O9MM-0011	97	
27	W916	W916-0005	98	
28	W64A	W64A-0004	100	
29	W64A	W64A-0009	100	
30	RYB8	RYB8-0003	100	
31	RYB8	RYB8-0006	100	
32	RYB8	RYB8-0008	100	

Appendix B - BEES Analysis Results
Units: 5 gallons of industrial cleaner

Environmental Performance

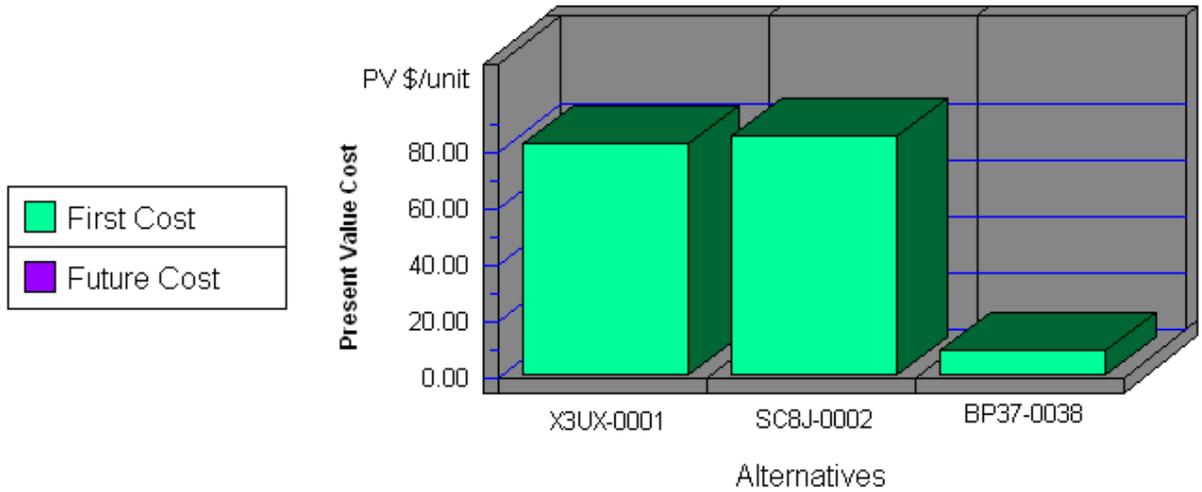


Note: Lower values are better

Category	X3UX-0001	SC8J-0002	BP37-0038
Acidification--5%	0.0000	0.0000	0.0000
Crit. Air Pollutants--6%	0.0011	0.0051	0.0000
Ecolog. Toxicity--11%	0.0316	0.0103	0.0107
Eutrophication--5%	0.0153	0.0118	0.0003
Fossil Fuel Depl.--5%	0.0665	0.0189	0.0024
Global Warming--16%	0.0204	0.0989	0.0006
Habitat Alteration--16%	0.0000	0.0000	0.0000
Human Health--11%	0.0202	0.0071	0.0003
Indoor Air--11%	0.0000	0.0000	0.0000
Ozone Depletion--5%	0.0000	0.0000	0.0000
Smog--6%	0.0055	0.0078	0.0006
Water Intake--3%	0.0035	0.0016	0.0003
Sum	0.1641	0.1615	0.0152

Appendix B (continued)

Economic Performance

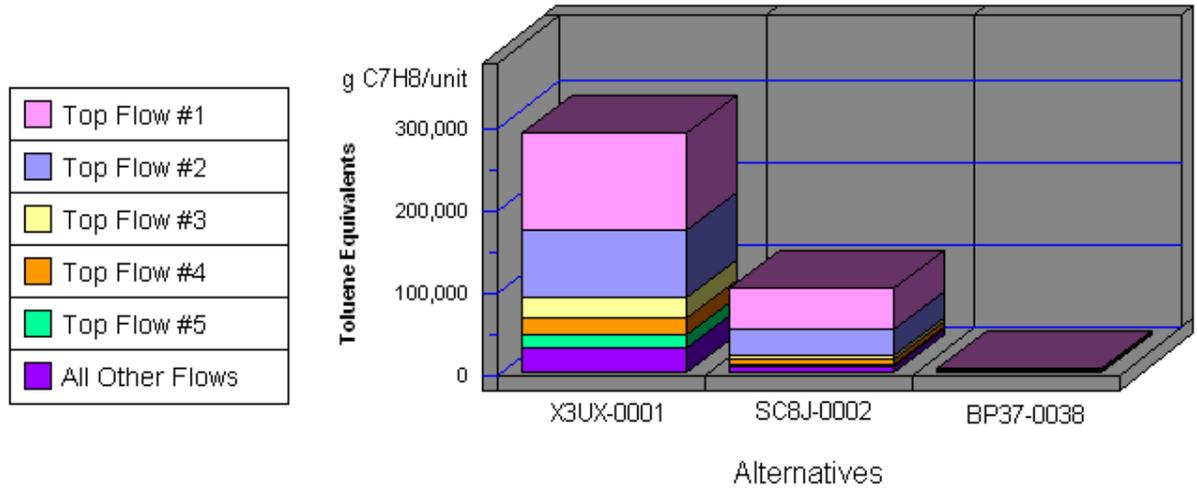


Category	X3UX-0001	SC8J-0002	BP37-0038
First Cost	82.00	84.95	8.85
Future Cost-- 3.9%	0.00	0.00	0.00
Sum	82.00	84.95	8.85

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

Appendix B (continued)

Human Health by Sorted Flows*



Note: Lower values are better

Category	X3UX-0001	SC8J-0002	BP37-0038
Cancer--(w) Arsenic (As3+, As5+)	117,719.45	48,705.56	2,151.31
Cancer--(w) Phenol (C6H5OH)	81,783.60	31,911.64	1,551.48
Cancer--(a) Arsenic (As)	24,482.05	5,910.67	166.48
Cancer--(a) Dioxins (unspecifie)	20,409.99	6,088.53	300.60
Noncancer--(a) Mercury (Hg)	15,827.74	1,964.03	9.82
All Others	30,735.66	7,994.64	761.75
Sum	290,958.49	102,575.06	4,941.43

*Sorted by five topmost flows for worst-scoring product

Appendix B (continued)

Industrial Cleaners				
Impacts	Units	X3UX-0001	SC8J-0002	BP37-0038
Acidification	millimoles H ⁺ equivalents	1.11E+04	3.40E+04	4.33E+02
Criteria Air Pollutants	microDALYs	3.56E+00	1.62E+01	1.34E-01
Ecological Toxicity	g 2,4-D equivalents	2.34E+02	7.65E+01	7.95E+01
Eutrophication	g N equivalents	5.87E+01	4.52E+01	9.71E-01
Fossil Fuel Depletion	MJ surplus energy	4.70E+02	1.33E+02	1.67E+01
Global Warming	g CO ₂ equivalents	3.26E+04	1.58E+05	9.53E+02
Habitat Alteration	T&E count	0.00E+00	0.00E+00	0.00E+00
Human Health	g C ₇ H ₈ equivalents	2.91E+05	1.03E+05	4.94E+03
Indoor Air Quality	g TVOCs	0.00E+00	0.00E+00	0.00E+00
Ozone Depletion	g CFC-11 equivalents	2.21E-04	5.19E-06	1.66E-08
Smog	g NO _x equivalents	1.39E+02	1.98E+02	1.55E+01
Water Intake	liters of water	6.23E+02	2.87E+02	4.87E+01
Functional Unit	-----	5 gallons		
<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: 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.</p>				

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 January 24, 2007.

Title: Multipurpose Cleaners

Description: Products used to clean dirt, grease, and grime from a variety of items in both industrial and domestic settings. This designated item does not include products that are formulated for use as disinfectants.

Manufacturers Identified: 39 manufacturers producing Multipurpose 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 Multipurpose Cleaners:

- Biobased Manufacturers Association
- United Soybean Board
- Biomass Energy Research Association
- US Fuel Cell Council

Commercially Available Products Identified: Of the manufacturers identified, 61 Multipurpose 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 12 Multipurpose Cleaners.

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

- Society of Automotive Engineers #APR 1755B, category 10 for use in the aerospace industry Effect of Cleaning Agents on Aircraft Engine Materials, Stock Loss Test Method
- American Society for Testing and Materials #D1298-99(2005) Standard Test Method for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method
- American Society for Testing and Materials #D130-04e1 Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test
- American Society for Testing and Materials #D2500-05 Standard Test Method for Cloud Point of Petroleum Products
- American Society for Testing and Materials #D86-05 Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure

- Environmental Protection Agency #600/4-90/027F Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms
- Green Seal #GS-34 This standard establishes environmental requirements for cleaning/degreasing agents.
- Green Seal #GS-37 Green Seal Environmental Standard for General-Purpose, Bathroom, Glass, and Carpet Cleaners Used for Industrial and Institutional Purposes
- International Organization for Standardization #ISO 14001 Primarily concerned with "environmental management". This means what the organization does to minimize harmful effects on the environment caused by its activities, and to achieve continual improvement of its environmental performance.
- International Organization for Standardization #ISO 9000 Primarily concerned with "quality management". This means what the organization does to fulfil the customer's quality requirements, and applicable regulatory requirements, while aiming to enhance customer satisfaction, and achieve continual improvement of its performance in pursuit of these objectives.
- Organization for Economic Cooperation and Development #OECD 301B CO2 Evolution Test for biodegradation
- Environmental Protection Agency Method #601 Purgeable Halocarbons
- Environmental Protection Agency Method #602 Purgeable Aromatics
- Environmental Protection Agency Method #608 Organochlorine Pesticides and PCBs

Samples Tested for Biobased Content: 18 samples of Multipurpose Cleaners have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

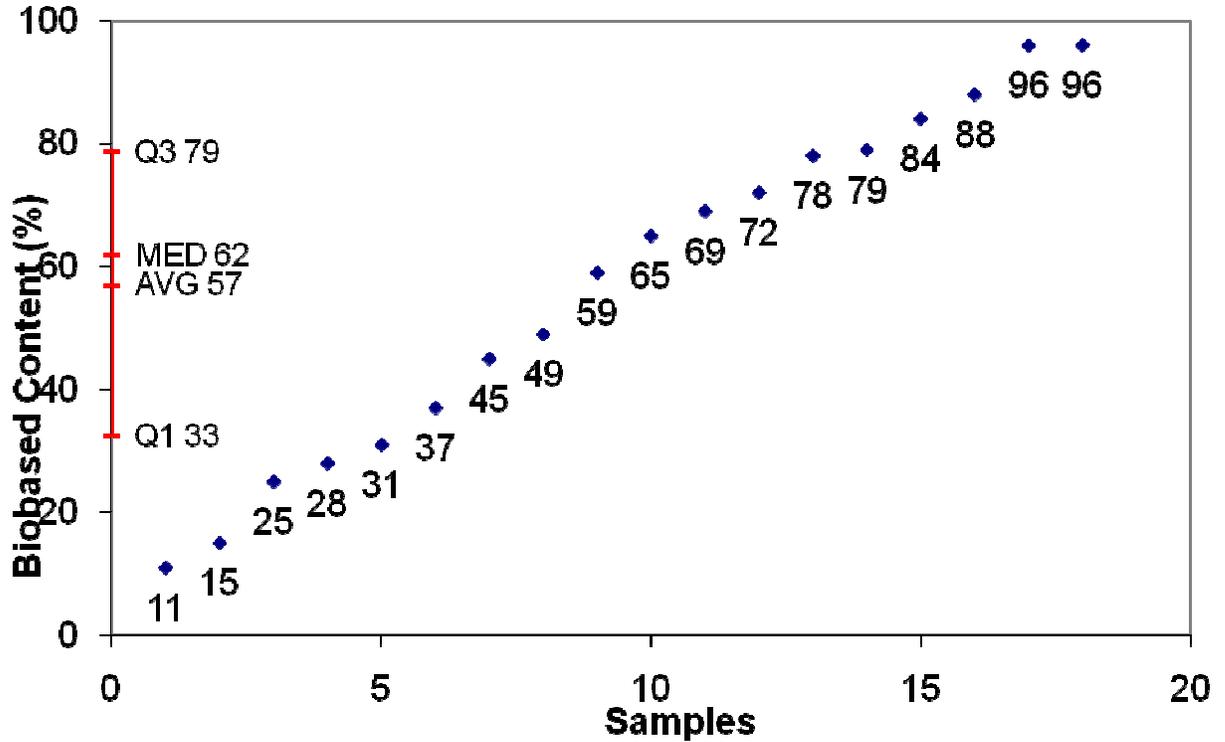
Biobased Content Data: Results from biobased content testing of Multipurpose Cleaners indicate a range of content percentages from 11% minimum to 96% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

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

BEES Analysis: The life-cycle costs of the submitted Multipurpose Cleaners range from \$5950.00 minimum to \$5950.00 maximum per usage unit. The environmental scores range from 0.0649 minimum to 0.0649 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

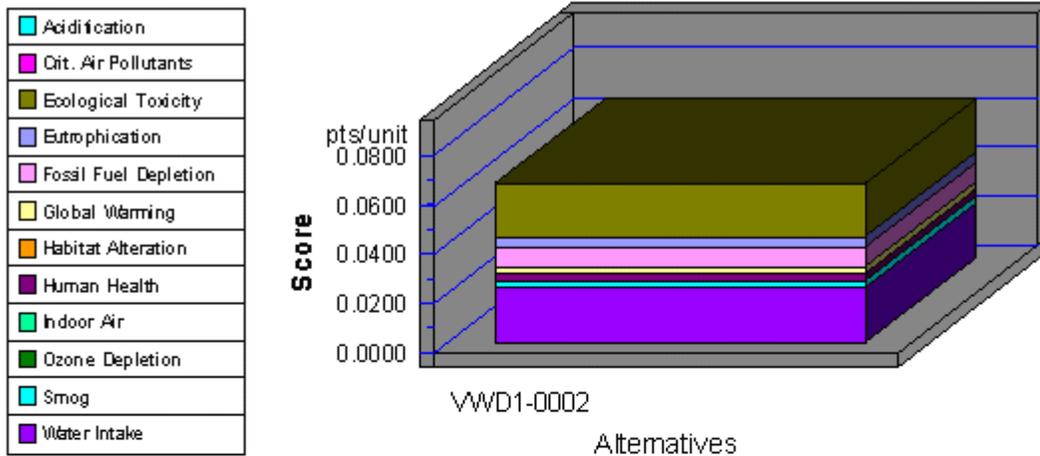
Multipurpose Cleaners



	Companies Identified	Products Identified	C14	BEES
1	WH38	WH38-0003	11	
2	W916	W916-0002	15	
3	C9PX	C9PX-0014	25	
4	YJ3R	YJ3R-0008	28	
5	TA8E	TA8E-0012	31	
6	C9PX	C9PX-0019	37	
7	M2RO	M2RO-0021	45	
8	VWD1	VWD1-0002	49	yes
9	WF5U	WF5U-0032	59	
10	WF5U	WF5U-0011	65	
11	RGWJ	RGWJ-0052	69	
12	MODM	MODM-0006	72	
13	TA8E	TA8E-0032	78	
14	ULHI	ULHI-0037	79	
15	ULHI	ULHI-0017	84	
16	TPHG	TPHG-0035	88	
17	W916	W916-0004	96	
18	RDO8	RDO8-0005	96	

Appendix B - BEES Analysis Results
Units: 1000 gallons

Environmental Performance

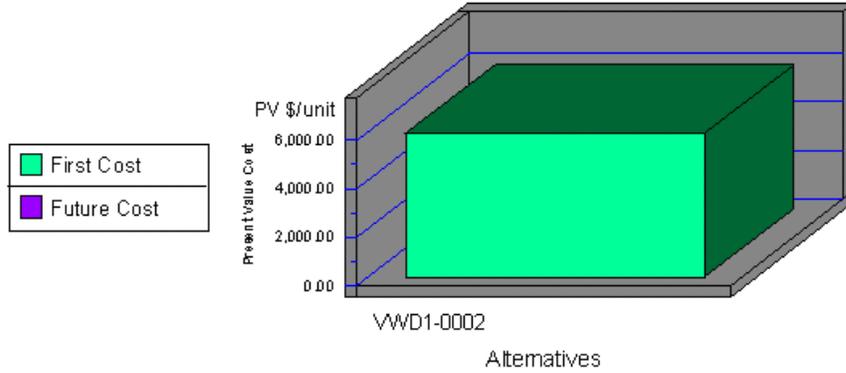


Note: Lower values are better

Category	VWD1-0002
Acidification-5%	0.0000
Crit. Air Pollutants-6%	0.0004
Ecolog. Toxicity-11%	0.0213
Eutrophication-5%	0.0046
Fossil Fuel Depl.-5%	0.0072
Global Warming-16%	0.0029
Habitat Alteration-16%	0.0000
Human Health-11%	0.0033
Indoor Air-11%	0.0000
Ozone Depletion-5%	0.0000
Smog-6%	0.0026
Water Intake-3%	0.0226
Sum	0.0649

Appendix B (continued)

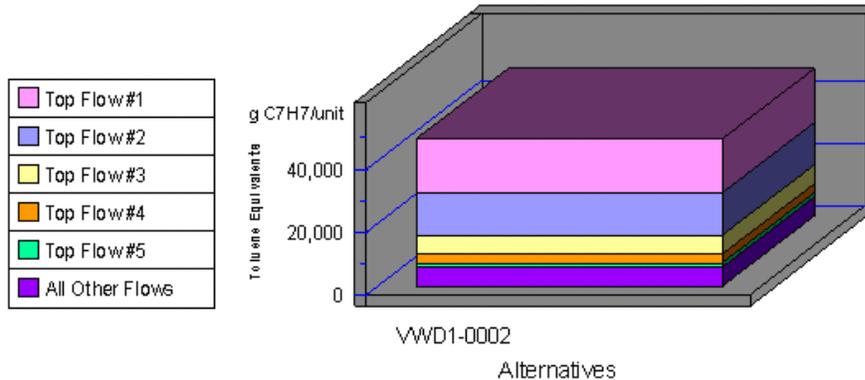
Economic Performance



Category	VWD1-0002
First Cost	5950.00
Future Cost - 3.9%	0.00
Sum	5950.00

*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	VWD1-0002
Cancer-(w) Arsenic (As3+, As5+	17,055.55
Cancer-(a) Atrazine (C8H14ClN5	13,482.90
Cancer-(w) Phenol (C6H5OH)	6,310.17
Cancer-(a) Arsenic (As)	2,427.22
Cancer-(a) Dioxins (unspecifie	1,815.07
All Others	6,021.05
Sum	47,111.96

*Sorted by five top most 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 January 24, 2007.

Title: Parts Wash Solutions

Description: Products that are designed to clean parts in manual or automatic cleaning systems. Such systems include, but are not limited to, soak vats and tanks, cabinet washers, and ultrasonic cleaners.

Manufacturers Identified: 16 manufacturers producing Parts Wash Solutions 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 Parts Wash Solutions:

- Biobased Manufacturers Association
- United Soybean Board
- American Soybean Association
- Society of Automotive Engineers
- National Association of Manufacturers
- Fabricators and Manufacturers Association International
- Society of Manufacturing Engineers
- Tube and Pipe Association
- Institute of Industrial Engineers
- National Tooling & Machining Association
- Precision Machined Products Association

Commercially Available Products Identified: Of the manufacturers identified, 22 Parts Wash Solutions 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 Parts Wash Solutions.

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

- American Society for Testing and Materials #D92-05a Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- American Society for Testing and Materials #D446-04 Standard Specifications and Operating Instructions for Glass Capillary Kinematic Viscometers

- American Society for Testing and Materials #D445-04e2 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
- American Society for Testing and Materials #D877-02e1 Standard Test Method for Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrodes

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

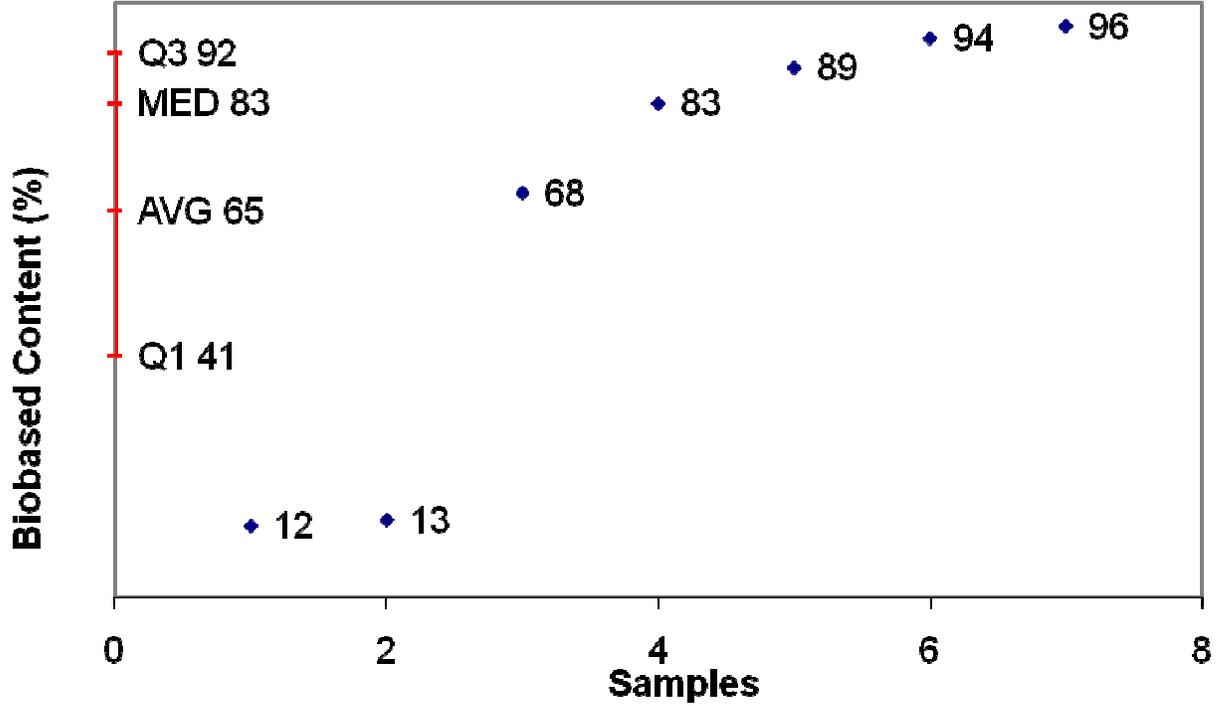
Biobased Content Data: Results from biobased content testing of Parts Wash Solutions indicate a range of content percentages from 12% minimum to 96% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

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

BEES Analysis: The life-cycle costs of the submitted Parts Wash Solutions range from \$10.43 minimum to \$16.99 maximum per usage unit. The environmental scores range from 0.0278 minimum to 0.0421 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Parts Wash Solutions



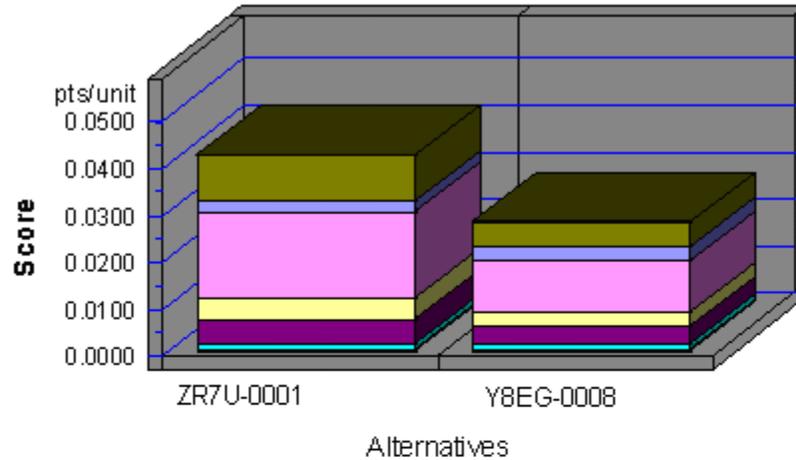
	Companies Identified	Products Identified	C14	BEES
1	WF5U	WF5U-0038	12	
2	YJ3R	YJ3R-0009	13	
3	ZR7U	ZR7U-0001	68	yes
4	Y8EG	Y8EG-0008	83	yes
5	RYB8	RYB8-0002	89	
6	RGWJ	RGWJ-0021	94	
7	W64A	W64A-0006	96	

Appendix B - BEES Analysis Results

Units: 1 gallon

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

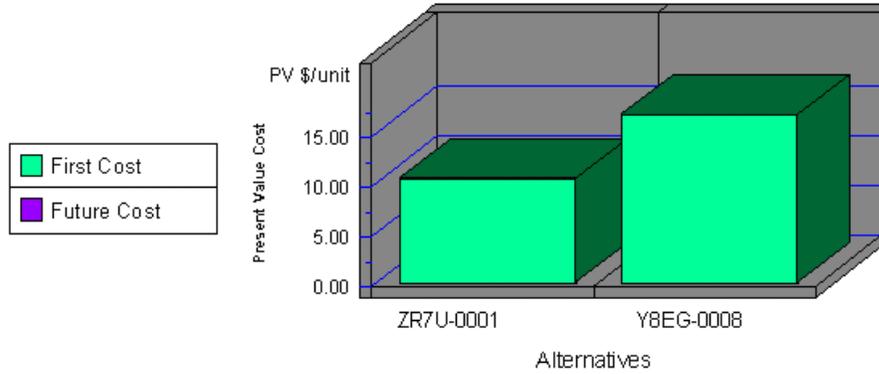


Note: Lower values are better

Category	ZR7U-0001	Y8EG-0008
Acidification--5%	0.0000	0.0000
Crit. Air Pollutants--6%	0.0003	0.0002
Ecolog. Toxicity--11%	0.0096	0.0054
Eutrophication--5%	0.0023	0.0028
Fossil Fuel Depl.--5%	0.0183	0.0108
Global Warming--16%	0.0047	0.0032
Habitat Alteration--16%	0.0000	0.0000
Human Health--11%	0.0052	0.0038
Indoor Air--11%	0.0000	0.0000
Ozone Depletion--5%	0.0000	0.0000
Smog--6%	0.0012	0.0009
Water Intake--3%	0.0005	0.0007
Sum	0.0421	0.0278

Appendix B (continued)

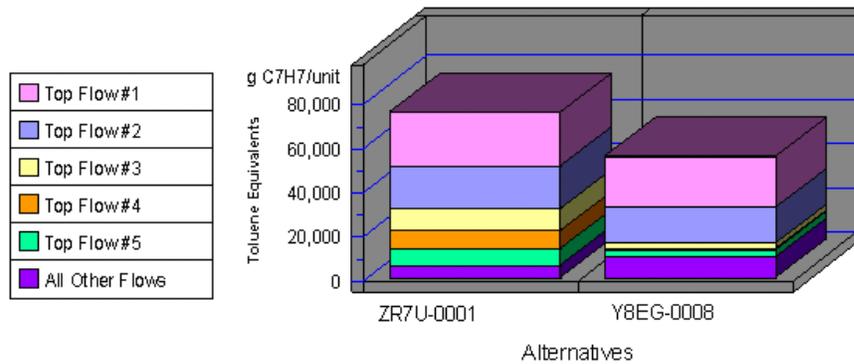
Economic Performance



Category	ZR7U-0001	Y8EG-0008
First Cost	10.43	16.99
Future Cost - 3.9%	0.00	0.00
Sum	10.43	16.99

*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	ZR7U-0001	Y8EG-0008
Cancer-(w) Arsenic (As3+, As5+)	24,783.04	22,889.89
Cancer-(w) Phenol (C6H5OH)	19,163.02	16,196.36
Cancer-(a) Arsenic (As)	9,722.87	2,811.94
Noncancer-(a) Mercury (Hg)	7,990.89	801.01
Cancer-(a) Dioxins (unspecifie)	7,581.95	2,695.80
All Others	6,129.69	9,791.59
Sum	75,371.46	55,186.60

*Sorted by five topmost flows for worst-scoring product

CHAPTER 2.0

ITEM DESCRIPTIONS AND BIOBASED CONTENTS

The tables in this chapter present detailed descriptions of the products identified in each of the Round 5 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 Document

Round 5

5/16/2006

Item	Company	Product	Description	Biobased Content	Comment
Chain & Cable Lubricants	AJTK	AJTK-0016	This product is a high quality biodegradable bar and chain saw lubricant formulated with the best optimized biotechnology using natural seed oil that surpasses the lubricity of most conventional oils.		
	AJTK	AJTK-0052		89	
	BP37	BP37-0004	This biobased, biodegradable product is a ready to use high quality rust preventative lubricant, formulated with natural seed oil that surpasses the lubricity of most conventional lubes. The product contains vapor phase corrosion inhibitors for indoor and outdoor conditions. It stops corrosion in two ways. First, a tenacious film clings to the metal surface to displace moisture. Second, vapor phase corrosion inhibitors provide the protected areas with healing properties even when the lube is temporarily removed.	86	
	C9JH	C9JH-0001	This product is a multigrade product that is based on canola oil rather than petroleum oil, with the right viscosity, tackiness and flow qualities for the full range of professional chain saw applications. Its efficacy is confirmed by routine use over a period of several years both here and abroad, and by independent tests that include a major chain saw manufacturer. These qualities are achieved through the use of high performance, petroleum-free additives that make our products operate at higher and lower operating temperatures with better flow properties and less gumming, while remaining toxicologically safe and actually less costly to use as compared to petroleum chain saw oils.		
	D8E9	D8E9-0008	Meets the lubricating demands of bar, chain, blade and saw-guide applications.		
	DRL2	DRL2-0013	This product contains a tacky agent to reduce drip and oil throw-off. It protects against rust and wear and penetrates into rivet holes and bar channels to reduce friction and link breakage and extend equipment life.		
	H675	H675-0001	Lubricant used as a corrosion preventative. Improves wear resistance on certain materials.		

HAKV	HAKV-0022	Proven in use throughout the New England winter. Meets all chainsaw manufacturer and environmental specifications.		
HAKV	HAKV-0029	This product is a patented, aquatically non-toxic, biodegradable wire rope lubricant. This product contains a unique blend of corrosion inhibitors, thickeners, and wear reducers. It is ideal for all types of wire ropes and chains in a variety of services and environments.		
HAKV	HAKV-0039			
HAKV	HAKV-0040	This product is an aquatically non-toxic, biodegradable chain and saw oil. It contains a unique blend of proven biodegradable base stocks, biodegradable thickeners, and biodegradable wear reducers.		
HAKV	HAKV-0042	This product is a patented, aquatically non-toxic, biodegradable wire rope lubricant. It contains a unique blend of corrosion inhibitors, thickeners, and wear reducers. It is ideal for all types of wire ropes and chains in a variety of services and environments. The product is a low drying formulation that is ideal for continuous applicators.		
HAKV	HAKV-0045	This product is an aquatically non-toxic, biodegradable chain and saw oil. Contains a unique blend of proven biodegradable base stocks, biodegradable thickeners, and biodegradable wear reducers. It is green to make identification easy on metal parts. It is ideal for all chain saws and forest machines in both summer and winter uses.		
J3TP	J3TP-0031	A high quality biodegradable bar and chain lubricant that surpasses the lubricity of most conventional oils.		
J7A3	J7A3-0005	Bar, chain and sprocket oil. Biodegradable chain lubricant.	100	
J7A3	J7A3-0008	Bike lubricant.		
J7A3	J7A3-0009	Bike lubricant.		
J7A3	J7A3-0021	Bike lubricant.		
JB88	JB88-0004	This product is an additive concentrate that can be diluted with suitable vegetable oils to produce a biodegradable, chain bar lubricant with good tack. The concentrate is compatible with most vegetable oils. However, to obtain the best performance, it is recommended that the concentrate be used with high oleic sunflower oil, high oleic canola oil or regular canola oil. The recommended treat level for this product is 18 to 20%.		
KK69	KK69-0001	Advanced agri-synthetic alternative to conventional mineral oil-based chain and bar lubricants. The product is specifically formulated to lubricate high-performance bar and chain applications.		

MPV9	MPV9-0001	Biobased chainsaw bar & chain oil. Stabilized technology for use in all climates. Canola base oil formulation. Provides longer chain life and cooler running engines. This product is 90%+ biodegradable after use.		
NK6D	NK6D-0001	This product is a biodegradable, patent-pending innovation combining a simple, user-friendly delivery technique with solid film lubrication to lost-in-use applications. This product contains renewable crop-based oils combined with natural fibers, rigidizers, and extreme performance additives. The product composite material can be modified as determined by the application and performance demands. This product is extremely versatile with applications ranging from high to moderate loads and high to slow speeds. The patent-pending interconnectivity and retainment mechanism to the applicator, improve safe operation. Current product applications include Rotary Dryers, Railroad Wheel/Flange. and Drive Chains.		
Q445	Q445-0001			
RDO8	RDO8-0029	This product contains plant based thickeners and wear-reducers, and may be applied as necessary for lubrication and corrosion protection. It is ideal for all chain saws and forest cutting machines for both summer and winter use.	99	
RDO8	RDO8-0064		96	
RDO8	RDO8-0073	Available in film-forming and nondrying formulations.	100	
RGWJ	RGWJ-0010	These products are ultimately biodegradable vegetable oils formulated with Antiwear/EP, rust/corrosion and oxidation inhibitors, and a tackifier. They are recommended for heavy chains, sprockets, and cables which are subject to heavy loading or shock loading. The products provide improved fire resistance over equal viscosity petroleum products and contain no chlorine, zinc, or other heavy metals. 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. Laboratory and field tests have shown that the products provide exceptional equipment protection at higher temperatures with excellent cold temperature pumpability.		

	RGWJ	RGWJ-0013	These products are fully formulated ultimately biodegradable vegetable oil based chain and bar oils. They combine agricultural vegetable oils with patented additive technology to provide high performance, biodegradable lubricants. A high level of tackiness with anti-wear and extreme pressure additives prevent oil fling off from chains and sprockets reducing wear. It has been recognized that the use of mineral lubricants poses certain environmental risks. Leakages, emissions and spillages, when handling lubricating oil, lead to direct pollution of the surroundings and the environment. These products were developed to ultimately biodegrade when lost into the environment. They are very tacky, tough, pitch dissolving lubricants that are recommended for chain bars and industrial chains and sprockets including those used in pulp and paper mills, saw mills, plywood mills, and general manufacturing. Other possible uses include chain drives on straddle lift lumber carriers, ATV and motorcycle chains, farm equipment, automatic and hand operated oilers.	80	
	RGWJ	RGWJ-0054		81	
	T3ON	T3ON-0003	This product has performance advantages in some applications such as high speed roller chains, cables and moving parts. It penetrates rapidly and adheres to the application, forming a lubricating film that cannot be wiped away by extreme pressures and high speeds. It protects metal surfaces from rust and corrosion that are exposed to environmental conditions. The molybdenum disulfide (Moly) provides an extreme pressure lubricant that reduces friction and wear.		
	UX2U	UX2U-0009	Chain Oil. This product provides a good barrier and dramatically reduces heat and friction, while providing extreme lubricity. The product contains moly and is readily biodegradable.		
	UX2U	UX2U-0010			
	WF5U	WF5U-0030		100	
	X4YT	X4YT-0001	This product is roller chain oil made from soy beans.		
	X4YT	X4YT-0007	Bar chain oil for chain saws made from soy beans.		
	Y3R8	Y3R8-0003	High performance on- and off-road bicycle chain oils which do not wash off in rain, do not accumulate grit and are 100% biodegradable and nontoxic. 100% vegetable oil.		
	Y3R8	Y3R8-0005			
Corrosion Preventatives	A9G4	A9G4-0001	35L X 24W (IN) Description: Protective anti-corrosion treatment for ferrous and non ferrous metals. Protects against rust and corrosion. Lubricated and seals out water and moisture. Easily removed with a solvent or emulsion cleaner when desired. 5 year protection.		

BP37	BP37-0003	This product is safe, convenient, ready-to-use vegetable oil/solvent-based liquid for general-purpose corrosion protection. Some applications include protection of sheet metals, wire, pipes, flanges and other fabricated and/or machined parts, guns and a host of other products. This product protects against corrosion and works as an excellent lubricant. This product performs effectively even under the adverse condition of 100% relative humidity and in the presence of such corrosive elements as chlorides, hydrogen sulfide and other sulfur compounds.	26	
BP37	BP37-0005	This product is a liquid concrete admixture which contains migrating corrosion inhibitors. Our admixtures are unique in their ability to travel or migrate throughout the concrete. This migration occurs via both liquid and vapor diffusion and has been proven in concrete using Secondary Neutron Mass Spectroscopy (SNMS) methods. For Reinforced concrete structures such as bridges, parking garages, highways, decks and lanais.	56	
BP37	BP37-0006	This product is a liquid concrete admixture which contains migrating corrosion inhibitors	26	
BP37	BP37-0007	Description: This product is a unique building block designed for cooling towers and other open-loop, recirculating cooling systems. This product is a rare combination of a powerful scale inhibition and excellent multi-metal corrosion protection. It is comprised of non-toxic, non-hazardous, and readily biodegradable ingredients. Its main component is a low molecular weight natural polymer, and all the other components are GRAS (Generally Recognized as Safe) substances and food approved preservatives.	91	
BP37	BP37-0014	Description: This product is a biodegradable temporary coating designed for use in high humidity outdoor and indoor environments. It protects against all types of corrosion and oxidation, and works well on a variety of metals. It's excellent penetrating properties aid in loosening frozen or rusted parts. Application: • Machines and equipment • Casings and Tubings • Temporary coating for storage and shipment • Wire • Sheet metals • Pipe • Flanges • Gears • Fabricated or machined parts	94	
BP37	BP37-0016	Description: This product is a biodegradable temporary coating designed for use in severe marine and high humidity outdoor and indoor environments. It protects against all types of corrosion and oxidation, and works well on a variety of metals. Its excellent penetrating properties aid in loosening frozen or rusted parts.	85	
BP37	BP37-0021	Vapor corrosion inhibiting waterborne additive for aqueous systems; good flash rust inhibition for ferrous metal, galvanized, and aluminum		

BP37	BP37-0022	Vapor corrosion inhibiting waterborne additive for aqueous systems; especially good for copper.		
BP37	BP37-0024	This product is a multimetal organic corrosion inhibitor additive for water and solvent-based paints, sealers, adhesives, fluids and more. It is silicone and surfactant-free and can be introduced to formulations at virtually any step of production. This product incorporates our proven corrosion inhibitor technology for protecting metals ranging from steel to copper and most other commonly used metals. It has been designed for easy blending into the production process without unnecessary risks to personnel, equipment or other manufacturing compounds. For corrosion protection this product can be added to: Water-based paints, Water-based waxes and solutions, Adhesives/sealants, Fluids		
BP37	BP37-0025	Contact and vapor corrosion inhibitor with a blend of additives to provide a synergistic corrosion protection for ferrous and aluminum substrates. waterborne coatings		
BP37	BP37-0026	Contact and vapor corrosion inhibiting additive for aluminum and ferrous metals: offers good protection in a salt environment. Post add to coating with slow mixing. A 3/1 ratio of two of our products provides for a synergistic additive blend. These additives must be added separately to the coating.		
BP37	BP37-0027	These products are water-based corrosion inhibitor additives for manufacturers of waterborne coatings or compounds. It provides contact and vapor phase corrosion inhibition for ferrous and non-ferrous metals.		
BP37	BP37-0028	This product is a water-based corrosion inhibitor that is designed to be used with carboxylated acrylic or styrene-acrylic lattices. This product provides corrosion inhibition to ferrous and non-ferrous surfaces. This product should be mixed before use although no settling is anticipated. The recommended starting levels for this product should be 1% to 3% based on the total weight of the formulation.		
BP37	BP37-0029	This product is a water-based corrosion inhibitor additive designed for waterborne coatings or compounds. It should be used with carboxylated acrylic or styrene-acrylic lattices. No ammonia is present in this additive.		
BP37	BP37-0030	Contact and vapor phase inhibitor; multimetal protection for solvent based coatings. Coatings become softer at high levels of this additive		
BP37	BP37-0031	Water-based additive for heat-seal coatings that protects ferrous and non-ferrous metals. Can be added to water-based skin film primers and other coatings.		

BP37	BP37-0032	This product is a liquid additive for solvent-based and a limited number of waterborne systems. This product may be added in a range of 1% to 3% weight to improve corrosion and water resistance. It is recommended as an additive for maintenance coatings. Applications: Solvent-based coatings, Waterborne coatings, Epoxy coatings, Solvent-based waxes and solutions		
BP37	BP37-0044	This product is a waterbased, biodegradable rust preventative that is intended for preservation of metals in storage and during transportation. This product provides multi-metal protection and is an excellent environmentally sound alternative to petroleum derived products. This ready-to-use formulation can provide protection for up to two years of indoor storage, or during shipments when combined with corrosion inhibiting packaging materials. Unlike rust preventative oils, this product leaves a dry film on the surface of the metal which is virtually undetectable. This feature helps to create a clean workplace, and prevents material waste. This product is VOC free, and the formulation is biodegradable, eliminating expensive disposal costs associated with oils.		
BP37	BP37-0045	This product contains corrosion inhibiting powder in a polyvinyl alcohol (PVA) water-soluble bag. The powder formulation is free of phosphates, heavy metals, nitrites and free amines. Designed for dry lay-up of boilers, this product's powder protects metals in enclosed spaces.		
BP37	BP37-0046	Unique corrosion inhibitor blend of corrosion inhibitor powder in polyvinyl-alcohol (PVA) water soluble bags for closed loop systems.		
BP37	BP37-0048	<ul style="list-style-type: none"> • This product is a corrosion inhibiting powder packaged in polyvinyl-alcohol (PVA) water-soluble bags. It is specially developed for dry lay-up of cooling towers for seasonal, short or long-term lay-up. This product is effective up to 12 months. This product offers an extremely efficient method of protecting multimetal in enclosed spaces. When the bag is cut open, the corrosion inhibitors vaporize and adsorb on all metal surfaces - reaching even recessed areas and interior cavities. The corrosion inhibitors form a strong, self-replenishing, protective, molecular layer on the metal. Designed for ease of application, this product enables an easy start-up. Application: • Provides continuous multimetal corrosion protection during lay-up period • Provides three phase multimetal protection - vapor phase, liquid phase and the vapor-liquid interface • Protects inaccessible and recessed surfaces • Requires little or no surface preparation • No special preparation necessary prior to start-up • Eliminates environmental hazards and disposal problems • Reduces chemical consumption and cost • Provides easy, convenient, hands-off application • Enables safe handling • Easy to apply • Increased worker 		

		productivity • Replaces hazardous oil-based products • PVA bags are fully biodegradable		
BP37	BP37-0053	This product is the premium corrosion inhibiting linerboard in the industry. It provides superior corrosion protection for both ferrous and non-ferrous metals.		
BP37	BP37-0057	Provides multi-metal vapor phase corrosion protection, contact corrosion inhibition and mechanical protection. Controlled adhesion layer on this product allows easy application, eliminates residue on protected parts and offers superior strength and corrosion protection. Continuous multi-metal corrosion protection for up to 24 months.		
BP37	BP37-0058	These products combine volatile corrosion inhibitors with cushioning packing bubbles to provide protection for sensitive or delicate components. Using corrosion inhibiting technology, the bubbles protect a variety of metals, including carbon steel, aluminum, copper, brass, silver and stainless steels, without leaving film or residue on packaged items. In addition, this product protect sensitive electronic equipment from triboelectric charge generation. This product is non-toxic and recyclable.		
BP37	BP37-0060	Multi-layer film. Designed for maximum strength and holding force with superior corrosion protection. Conforms exceptionally well to the curvature of the product with extra tear resistance. Developed particularly for low cost procedure to wrap metal coils in rolling position with eye horizontal.		
BP37	BP37-0063	This product (polycoated paper) provides superior corrosion protection for both ferrous and non-ferrous metals. In addition, this product is coated with a polyethylene coating, to provide a moisture barrier and/or moisture-vapor barrier.		
BP37	BP37-0078	This product is a brilliant true gold colored waterbased coating. It has excellent salt spray and humidity resistance similar to another of our products and is available in one package system. This product provides protection in harsh, outdoor, unsheltered applications. The complex mixture of nontoxic organic inhibitors and a platelet type gold pigment offers protection that can compete with zinc rich coatings. This special combination of additives, a platelet pigment, and a polymer barrier, significantly retards the reaction of metal ionization and repels water. It protects against corrosive electrolytes and aggressive environments, thus preventing corrosion.		
BP37	BP37-0079	Dry, hard, waxy film, Excellent for harsh corrosive environments, Multi-year outdoor protection, Containment resistant, UV resistant Application: Pipe coating, Parts storage, Underbody coating, Wire rope, Steel plate, Machined parts		

BP37	BP37-0080	Non drying, Excellent lubricity, Self-healing Application: • Wire rope • Electrical connections/wiring • Sheltered coating • Gear protectant/lubricant • Long-term (5+ years) equipment lay-up • Stamping oil additive • Drawing oil additive • Cylinders • Working/moving parts		
BP37	BP37-0081	Water Based, Clear, dry hydrophobic film, Paintable, 1 year indoor protection, Replaces oil based preventatives, Environmentally friendly Application: Outdoor storage, aircraft, elevators, storage tanks, vehicles, outdoor connections, pumps, cargo holds, marine equipment		
BP37	BP37-0092	This product is a water-based fogger for corrosion protection in enclosed spaces. Equipped with a delayed-released valve actuator, the product can be enclosed in a container and left to dispense. Non-toxic, dries tack-free.		
BP37	BP37-0093	This product is a water-based rust preventative for temporary corrosion prevention. Does not require removal before painting or further processing. Non-flammable.		
BP37	BP37-0107	Safe, convenient, ready-to-use vegetable oil/solvent-based liquid for general purpose corrosion protection. Wet film/non drying. Application: Provides environmentally friendly, universal corrosion protection even in adverse climate conditions.		
BP37	BP37-0117	Corrosion inhibitor for the protection of copper, brass and silver. Benzotriazole (BTA). Designed for water treatment, circulating cooling systems, functional fluids, wrapping tissue, corrosion protective coatings and cleaners.		
BP37	BP37-0119	This product is a multimetal solvent-based organic vapor and contact corrosion inhibitor for use in solvent and some waterborne coatings. The use level recommended is 1 to 3% by weight. Application: • Excellent multimetal corrosion protection • Does not contain hazardous zinc phosphate, chromates, or barium-based inhibitors • Low toxicity • Excellent thermal stability [up to 320°F (160°C)] • Can be post added to most coating system • VOC free • Compatible with solvents based and some waterborne coatings. METALS PROTECTED: Carbon steel, Stainless steel, Galvanized steel, Cold rolled steel, Aluminum, Brass, Copper, Solder, Bronze		

BP37	BP37-0120	This product is an organic corrosion inhibitor that can be used in solvent-based and some waterborne coatings. It is recommended to use between 1% and 3% (by weight) to improve corrosion resistance. Application: • Excellent corrosion resistance • Compatible with majority of solvent based materials and some waterborne coatings • Contains no phosphates, chromates, or barium compounds • Slight tan color that will not detract from a colorant system METALS PROTECTED: Cold rolled steel, Stainless steel, Aluminum, Galvanized steel, Cast iron		
BP37	BP37-0131	This product is a multimetal, flash rust, corrosion inhibitor additive for water-based paints, sealers, adhesives, fluids and more. Free of silicones and surfactants, this product may be introduced to formulations at virtually any step of production. It incorporates our proven corrosion inhibitor technology for protecting metals ranging from steel to copper and most other commonly used metals. Designed for easy blending into the production process without unnecessary risks to personnel, equipment or other manufacturing compounds. Application: For flash rust corrosion protection this product can be added to: Water-based paints, Water-based waxes and solutions, Adhesives/sealants, In-can corrosion, Steel, Cast iron, Common aluminum alloys, Galvanized steel, Stainless steel, Copper		
BP37	BP37-0135	This product is a multimetal, corrosion preventive additive for water-based metalworking fluids, lubricants, cleaners and coatings during product manufacturing. This water-based additive utilizes corrosion inhibitor technology for maximum protection. Application: Coolants, Primer coatings, Alkaline cleaners/detergents		
BP37	BP37-0140	This product is an oil-based package of corrosion inhibitors for hydraulic or lubricating oils. This product is a rust preventive, which provides excellent protection during operating conditions and intermittent operation. This product is very effective for mineral and synthetic oils: naphthenic, iso-paraffinic, PAOs, etc.		
BP37	BP37-0158	Used to prevent corrosion of rebar in concrete. To be added to concrete mix. Application: Reinforced concrete , bridges, decks, ramps, highways, marine structures.		
BP37	BP37-0179	Corrosion inhibitor liquid combined with migratory corrosion inhibitors that prevents "build-up" of concrete, asphalt, dirt and other debris on concrete or other construction equipment. Application: Apply onto equipment with a clean sprayer, roller, or brush.		

BP37	BP37-0182	This product with a corrosion inhibitor is a single-component cement-based mortar for structurally repairing or overlaying deteriorated concrete. This product provides the necessary concentration of corrosion inhibitor molecules on embedded steel bars. They create a protective monomolecular layer on metals embedded in concrete and inhibit further corrosion of bars.		
BP37	BP37-0234	This product is a corrosion inhibitor powder for corrosion protection of ferrous metals in recessed areas, interior cavities and voids. Application: • Tubular structures, pipes, vessels and turbines • Internal surfaces of compressors, turbines, engines, tanks, boilers and heat exchangers • Dry lay-up of closed circuit cooling systems • Equipment protection after hydrostatic testing • Parts, components and completed assemblies during shipping and storage		
BP37	BP37-0243	Ready-to-use waterborne corrosion inhibitor designed for indoor use. Vapor phase corrosion inhibitors migrate and protect metal surfaces, resulting in time and cost savings. This product is used to protect edges of coils and stacks or to fog void spaces, tanks, containers, packages and enclosures. This product is effective on ferrous metals as well as aluminum and plated steels. Consistently successful in providing protection to the basic metals, metalworking and packaging industries. This product is a ready-to-use, FDA/USDA approved, solvent based corrosion inhibitor for indoor use. Vapor phase inhibitors in this product migrate and protect metal surfaces, resulting in time and cost savings. This product is used to protect edges of coils and stacks. With this product, very little product is needed to protect large areas or volumes. It is effective on ferrous metals as well as aluminum and plated steels. This product is consistently successful in providing protection to the basic metals, metalworking and packaging industries. Application: • In-process protection • Edge spray of coils and sheet stock • Void spaces • Double wall void spaces • Tin can storage (337°F / 169°C)		
BP37	BP37-0244	Waterborne corrosion inhibitor concentrate for indoor use based on proven vapor phase technology. Excellence for edge treating of coils and stacks and of fogging packages and enclosures. Particularly effective on ferrous metals, aluminum and tinplated steels. Also works as a cleaner/degreaser on steel or tinplate. USDA approved.		
BP37	BP37-0245	Environmentally friendly concentrated corrosion preventive liquid/metalworking lubricant for wet tempering of galvanized and cold-rolled steel, difficult-to-produce metal stampings, wire rope, tubular products and machine parts. This product prevents corrosion indoors for up to two years. This product can be removed with conventional alkaline cleaners. Can also be used as a coolant. Apply by dipping.		

BP37	BP37-0247	Liquid that provides corrosion protection for multimetals. Dilutable with water up to 1:40. Excellent lubricating and corrosion inhibiting properties. Replaces slushing oils on cold rolled and galvanized steel. For use as a metal-forming lubricant and synthetic machining coolant. This product is formulated for deep-draw applications.		
BP37	BP37-0256	This product is a modified water-base acrylic, corrosion inhibiting strippable coating. It provides protection in two ways: atmospheric corrosion and as a physical barrier to protect against nicks, abrasion, scratches, etc. This product is used as a dry film, temporary coating for parts and equipment. The coating is stripped or peeled away prior to equipment use, and will not leave a residue.		
BP37	BP37-0260	This product is a water-based concentrate designed as a complete replacement for oil-based corrosion preventives.		
BP37	BP37-0276	This product is a high temperature aluminum waterborne silicone coating that provides excellent corrosion resistance on metal substrates. This product will dry tack free at room temperature to a <6B hardness (Soft). The coating should be cured at 500°F (260°C) for two hours, resulting in an extremely hard film - 9H. Application: FEATURES • Heat stability to 1100°F (593.3°C) • 600 hour salt spray resistance • 9H pencil hardness • 200 double rub MEK resistance with no effect • Brilliant aluminum appearance • No hard settling of aluminum TYPICAL APPLICATIONS • Automotive industry • Power generation • Aviation • Off shore drilling, etc		
BP37	BP37-0292	This product is a corrosion inhibitor powder for corrosion protection of ferrous metals in recessed areas, interior cavities and voids, such as double bottom in storage tanks. This product provides an extremely efficient dry or slurry method to protect metals within an enclosed space. The corrosion inhibitor vaporizes and adsorbs on all metal surfaces, reaching all exposed areas, including recessed sections and interior cavities. Application: • Double bottom of storage tanks floors		
BP37	BP37-0293	This product is a water-soluble corrosion inhibiting powder for wet or dry corrosion protection of ferrous metals and aluminum. Application: • Tubular structures, pipes and vessels • Internal surfaces of compressors, turbines, engines, tanks, boilers, heat exchangers • Steam condensate lines, closed circuit heating and cooling systems • Equipment during and after hydrostatic testing • Parts, components and completed assemblies during shipping and storage • Additive to shot-blasting media, wet blasting • Additive to standing water • Voids, cavities and tanks		

BP37	BP37-0294	Water-based rust preventive concentrate for water blasting or wet abrasive blasting. It leaves a very thin, transparent, tack free film on the metal surface. Weldable and paintable film is non-toxic, pro-environmental and contains no nitrite or phosphate inhibitors.		
BP37	BP37-0296	Proprietary corrosion inhibitor for boiler water systems. Water soluble, provides long-term protection against corrosion and scale formation. Suitable for low to medium pressure boilers.		
BP37	BP37-0298	This product is the only oilfield inhibitor product on the market which combines high level of corrosion protection, biodegradability and low toxicity. This product is soluble in crude oil and dispersible in fresh water and brine solutions. As a fast-acting and long-term inhibitor, this product forms an effective corrosion inhibiting barrier for both ferrous and nonferrous metals in the presence of water, halogens and corrosive gases such as dissolved oxygen, sulfur dioxide, carbon dioxide and hydrogen sulfide.		
BP37	BP37-0300	This series of products form a persistent barrier for continuous protection against severe corrosive attacks encountered in refinery and petrochemical operations. Effective for a wide range of refined hydrocarbons, crudes, and oil/water ratios, these products are highly soluble in crude oil and dispersible in fresh water and brine solutions. As a fast-acting, long-term inhibitor, these products form an effective corrosion inhibiting barrier for both ferrous and nonferrous metals in the presence of water, halogens and corrosive gases such as dissolved oxygen, sulfur dioxide, carbon dioxide and hydrogen sulfide.		
BP37	BP37-0301	Provides internal corrosion protection for gas flow and gas transmission lines. Effective against water, corrosive gasses and chloride contamination.		
BP37	BP37-0302	Description: This product is a waterborne corrosion inhibitor for indoor use based on field-proven vapor phase technology. Corrosion inhibitors in this product migrate and protect metal surfaces, resulting in time and cost savings. This product is used as a water additive in food processing plants for indirect contact with foodstuffs. Typical applications include hydrotesting, closed loop cooling systems, boilers and heat exchangers. This product is particularly effective on ferrous metals and aluminum. Application: This product contains vapor phase inhibitors which provide multimetal corrosion protection. • Leaves a thin, self-healing film that is environmentally friendly • Can be used as a cleaner/degreaser for food processing equipment and processing plants • Does not affect the welding process • This product contains FDA and USDA approved ingredients for use on tinplate, aluminum and other metal products used in food processing and packaging.		

BP37	BP37-0304	This product is a water-based, rust preventive additive for the protection of ferrous and nonferrous metals in industrial waters. This product is nontoxic, environmentally safe and does not contain nitrite or phosphate inhibitors. Based on all organic components, this product has the ability to protect at extremely low concentration levels. It is safe, economical to use and easy to dispose of.		
BP37	BP37-0305	This product is an additive that protects ferrous and nonferrous metals from corrosion induced by waters containing inorganic salts, including chlorides. A concentrated formulation, this product offers low dosage effectiveness as a treatment for a wide variety of marine and process applications requiring economical corrosion inhibition for fresh water, salt water and brine solutions. This product contains organic ingredients and has strong film persistency abilities. This product is effective as a replacement for formulations containing nitrites, phosphates, chromates or other heavy metals.		
BP37	BP37-0306	This product is a unique, concentrated formulation that protects ferrous and non-ferrous metals from corrosive solutions containing chlorides. The product is designed to provide corrosion protection in fresh water, salt water, brine and other highly corrosive solutions containing dissolved halogens. This product is effective as a replacement for nitrite- and chromate-based formulations and hydrazine-based oxygen scavengers. Being environmentally safe to use, this product helps solve the problem of disposal, particularly for large quantities of water.		
BP37	BP37-0307	Vapor phase technology based treatment protects cooling and industrial process systems against corrosion, scale and fouling. Environmentally safe.		
BP37	BP37-0308	This product is a complete corrosion and scale inhibitor liquid concentrate for use in open recirculating cooling water systems. The product is a combination of organic phosphorous compounds, polymers, aromatic azoles, and proprietary components.		
BP37	BP37-0310	This product is a unique powder formulation for protecting different metals against corrosion. It is designed to provide long-term protection in open and closed loop cooling systems. Effective for a broad range of applications to stop aggressive corrosion from fresh water		
BP37	BP37-0311	A liquid inhibitor for corrosion protection of metal surfaces covered with thermal insulation. Can be injected into insulation already in place to protect metal underneath.		
BP37	BP37-0312	Corrosion preventive additive for gasoline, diesel, gasohol mixtures and alcohol fuels that also works as a fuel stabilizer and water emulsifier. Soluble in methanol blends as well as neat methanol fuel or neat gasoline.		

BP37	BP37-0313	This product is a long-lasting, high-shine wax and rust blocker containing high performance corrosion inhibitors. This product stops corrosion, ultraviolet (UV) rays and fiberglass oxidation that silently attacks the finish of vehicles beneath the shine.		
BP37	BP37-0314	Description: This product shines, seals and protects metal surfaces using vapor corrosion inhibitors. This product is formulated for application in high or low pressure sealer arches in automatic car washes and is safe for all paint finishes. This product penetrates into finishes, sealing paint and metal surfaces from the damaging effects of corrosion. Application: This product should be applied to painted finishes with high, medium or low pressure spray. No other finishing treatment is necessary before air drying surfaces.		
G944	G944-0017	This product's biobased formula contains soybean oil and other renewable resources for an effective lubricant that protects longer than petroleum based lubricants and is an environmentally responsible product.	92	
KK69	KK69-0003	Advanced agri-synthetic alternative to conventional mineral oil-based, multi-purpose lubricants. The product is formulated with a highly functional additive package designed to inhibit corrosion, penetrate rust, displace moisture and remove build-up deposits of oil and grease.		
M3D3	M3D3-0049	Displaces water from metal parts - deposits a thin, dry, colorless inert protective film. Resists oxidation, corrosion, scale and salts. Excellent proven performance in parts washing applications.		
NM61	NM61-0001	This product is a unique corrosion control system developed by our company for use on rusted ferrous metal surfaces. The ferrous surface to be protected is converted on contact to a complex organic iron compound by the unique deoxygenating agent incorporated in the product converter. This black, corrosion-resistant layer is formed by utilizing all the surface moisture and oxygen during the reduction reaction. The special copolymer latex emulsion system dries to form an impermeable barrier to oxygen and moisture.		
NM61	NM61-0002	This product is a unique anti-corrosive primer paint for use over pre-treated rusty steel, iron, galvanized steel, blast cleaned steel, cold rolled steel, stainless steel, PVC, fiberglass, or concrete. This product is a single pack, water based system utilizing a remarkable corrosion inhibitor that is able to prevent the spread of localized corrosion. It permits no under creep in the event the coating is damaged.		
NM61	NM61-0003	This product is a high build version of another of our products. It is a unique corrosion control system developed by our company for use on rusted ferrous metal surfaces. It is excellent for use on heavily corroded surfaces where deep pits and fissures are a problem. It		

		smoothes out rough corroded surfaces for a superior finish coat. The ferrous surface to be protected is converted on contact to a complex organic iron compound by the unique deoxygenating agent incorporated in this product's converter. This black, corrosion-resistant layer is formed by utilizing all the surface moisture and oxygen during the reduction reaction. The special copolymer latex emulsion system dries to form an impermeable barrier to oxygen and moisture.		
NM61	NM61-0004	This product is an enzyme based cleaner that effectively removes trace contaminants and soils that prevent our products from properly adhering to substrates. It can be used in a wide range of temperatures and on any surface not harmed by water.		
O539	O539-0002	Soybean- and corn-based industrial cleaner. Water-rinsable. Ideal for parts cleaning, degreasing, graffiti removal and concrete floor cleaning. It is also an effective penetrant and rust preventive. Readily biodegradable.		
OURR	OURR-0001			
QK84	QK84-0001	Stop and inhibit rust, aluminum oxide, "greening" on wiring, and corrosion from dissimilar metals! This product is a unique blend of rust inhibitors to control corrosion on ALL metals.		
QTPR	QTPR-0001	This product is a water displacing oil based rust inhibitor which provides intermediate to long-term indoor rust protection for ferrous and non-ferrous metals. This product can be applied to machined parts, parts exiting from a washer, or to parts following a rust stripping operation and is readily removed from treated surfaces with solvents or industrial alkaline cleaners.		
QTPR	QTPR-0002	This product is a solvent cutback rust inhibitor designed for temporary rust protection, primarily in industrial applications. It has been developed and formulated as a non-staining rust inhibitor for temporary indoor protection of metals. This product leaves a slightly oily protective film. Its metal-wetting polar activity not only displaces water from metal surfaces but helps to prevent the redistribution of free water. This product is formulated to possess a significantly higher flash point for safer use and better working environments. This product is primarily designed for short term indoor protection of finished and ground parts, bearings, wire, automotive parts, screw machine parts, etc.		
QTPR	QTPR-0003	This product is a water displacing oil based rust inhibitor intended to provide one year or more of indoor corrosion protection for ferrous and non-ferrous metals under typical conditions. It is effectively applied using dip, spray, or fogging equipment.		

QTPR	QTPR-0004	This product is a water emulsifiable rust inhibiting oil formulated for use on ferrous and non-ferrous metals. It produces an oily film that provides corrosion inhibition against high humidity during storage and shipment of finished parts. Protection of three to nine months, depending on dilution, can be expected.		
QTPR	QTPR-0005	This product is a new water-based temporary rust inhibitor designed to effectively replace old, environmentally harmful oil or solvent based corrosion preventives. This product excels in its rust and corrosion inhibiting characteristics, along with outstanding wetting properties. It is biodegradable and may be customized to the length of rust protection desired. It can be used on both ferrous and non-ferrous metals.		
QTPR	QTPR-0007	This product is a water displacing solvent based rust inhibiting oil designed to provide indoor storage protection of ferrous and non-ferrous metals. When water wet or alkaline solution wet parts are immersed in this product, the compound displaces the water or alkali solution (which falls to the bottom of the tank) and completely covers the part with oil. On removal from the compound, the volatile portion of the oil slowly evaporates leaving an ultra thin strongly rust protecting film on the part.		
QTPR	QTPR-0008	This product is a solvent based, water displacing rust inhibitor intended to provide one year or more of indoor corrosion protection for ferrous and non-ferrous metals under typical conditions. This product is used as received in dip, spray or fogging equipment where excellent displacement of water or alkaline cleaning solution is required and one year of indoor protection is required. Surface films of this product are readily removed with typical industrial alkaline cleaners or by vapor degreasing.		
QTPR	QTPR-0009	This product is a solvent based outdoor rust inhibitor. It is intended for use on component parts or finished assemblies and equipment to provide six months of outdoor storage protection under typical conditions. This product also will provide two years of indoor storage protection under typical conditions.		
RGWJ	RGWJ-0005	This product provides a corrosion inhibiting, waxy film that is especially effective in protecting ferrous metals in acid fume (hydrochloric acid) environments and against high humidity. These are excellent products that can be used in many industrial and commercial applications where corrosion inhibiting, waxy films are beneficial.		

RGWJ	RGWJ-0053	A product that gives outstanding corrosion protection as measured by humidity cabinet and salt spray test. Provides protection on ferrous and non-ferrous metals and is non-staining. Excellent as a wire rope lubricant, preservative lubricant, etc. on sheet steel and steel parts and is more fire resistant than mineral base formulas with the same viscosity. Also, excellent on copper corrosion test (Passed Clean 1A).	74	
RGWJ	RGWJ-0079	An outstanding, water emulsifiable corrosion inhibitor with BCI technology that provides a light film. It may be used in many metalworking applications where excellent in-house corrosion protection and easy cleaning of parts is essential.		
RGWJ	RGWJ-0080	These products are outstanding water displacing, non-staining rust preventatives. They will rapidly separate water displaced from metal surfaces after machining operations or after alkali cleaning. Ultra thin, highly protective films can be applied easily by dipping, spraying, or brushing. These ultra thin films are effective in the protection of ferrous and non-ferrous metals from atmospheric corrosion even under conditions of high humidity. When they are agitated vigorously with water or alkaline solutions, the water will separate completely and rapidly.		
RGWJ	RGWJ-0118	Biobased ultimate biodegradable Turbine R & O fluids designed to replace mineral oil in environmentally sensitive areas as in hydroelectric turbine bearings that require rust and oxidation inhibitor properties.	61	
T3ON	T3ON-0002	The addition of a food grade tackifier provides adhesiveness to the performance of BPL. Some applications and environmental conditions may require an additional tacky surface film that protects equipment from corrosion. The tackifier also holds the lubricant to the surface of moving parts and improves anti-wear properties		
X3E5	X3E5-0001	100% non-toxic bed release agent used to easily release hot or cold asphalt from truck beds. 100% oil-based using a combination of soy, citrus based, and corn oils.		
X3E5	X3E5-0002	Prevents corrosion from occurring by fusing to metals and preventing oxygen from escaping. Can be applied to a variety of metal surfaces.		
YJ3R	YJ3R-0019	A substance used to cleanse a variety of items; used both in industrial and domestic settings.		
Z8F8	Z8F8-0001	Fluids are non-aqueous, 100% synthetic, fire-resistant hydraulic fluids, approved by FMRC as a "less hazardous hydraulic fluid". These products contain additives which provide rust and oxidation protection, as well as superior anti-wear properties.	59	

Food Cleaners	C3PW	C3PW-0001	Neutral food grade cleaner for use in the food industry. NSF approved. Biodegradable and free rinsing.		
	CF61	CF61-0001	Because wax—and the dirt, soil, and residues that may get trapped underneath—is not removed simply by rinsing with water, water is not the best solution for clean produce. This product, however, removes dirt and more water-resistant wax than water alone—using only ingredients from natural sources, like baking soda and citric acid.	98	
	G944	G944-0014	Up to 3 times more concentrated! This product is a safe, natural, effective cleaner that helps remove soil, waxes, pesticides, herbicides, fungicides, and other unhealthy pollutants from your fruits, vegetables, and poultry. Even when eating organic fruits and vegetables, contaminates through handling, storage, and shipping can still be an issue, and should always be washed. This product also keeps your food preparation, storage, and equipment more sanitary by removing and rinsing away contaminants. So concentrated that just a few drops go a long way, and is much more effective than the watered down versions on the market today. With no left over residue or aftertaste, by using this product, you can eat safer, healthier, and with more peace of mind.	56	
	HNG5	HNG5-0009	A phosphate-free, non-alkaline household cleaner that is safe enough to use on fruits and vegetables! Tough enough to tackle stubborn stains yet gentle enough for fine washables, use this biodegradable cleaner diluted or full strength around the house as a laundry detergent, a stain remover, a produce wash and more.		
	K4U8	K4U8-0011	This product contains ingredients approved by the FDA for use on foods. Proven to be effective at removing most natural waxes, oils, pesticides, and other residues. Super-concentrated solution (1:16) saves shipping costs; very economical to use. Or dilute 1 ounce in a sink or bowl for light cleaning of larger quantities. Cleans quickly and easily, leaving only the natural taste of the produce. Contains beta carotene, a substance from plants that the body converts into Vitamin A. Beta carotene is known as an antioxidant and immune system booster. Made from natural soaps and beta carotene, is environmentally preferable and non-toxic.		
	O5MZ	O5MZ-0001	This product very effectively helps remove pesticides, chemicals, heavy metals, fuel residues, dirt, animal waste, waxes, and other environmental contaminants (usually deposited in "layers of sedimentation"). It is especially effective on delicate produce like lettuce, berries, and mushrooms.		

RDO8	RDO8-0014	Designed specifically to safely remove pesticides and neutralize allergens on delicate fruit and vegetable surfaces. No fragrances, colorants, builders or reagents are added.		
RDO8	RDO8-0028	This product will completely surround and hold the soil in suspension so that it can be washed away without damaging the fruit or vegetable surface. May also be used to clean storage bins, crates, conveyors, flumes, and controlled atmosphere (CA) rooms.	65	
RDO8	RDO8-0031	This product will remove more protein and sugar soils than traditional detergent and provides a fresh, clean, natural fragrance. This product may be used safely to wash fruit and vegetables for removing pesticides, herbicides, fertilizers and organic soils.		
ULHI	ULHI-0022	This product safely and effectively removes wax, soil and agricultural chemicals found on standard and organic produce. It cuts through the wax and chemicals to leave fruits and vegetables truly, safely clean. This product is 100% natural, using ingredients from citrus, corn and coconut to remove harmful substances.	76	
ULHI	ULHI-0034			
V321	V321-0001	This product is a proprietary non-metallic, organic antibacterial and anti-fungal compound. Recommended application for home use includes using the product in a final rinse prior to food preparation and consumption. Use to disinfect countertops, cutting boards, utensils, etc. during all steps of food processing. Our all-natural products are liquid formulas of organic origin, which act by destroying the cellular membrane of the micro-organism. The germ and bacteria eliminating power is due to a synergetic action created by the reaction of ascorbic acid (Vitamin C) with the natural organic acids. This gives our products their unique physical and biological properties.		
WF5U	WF5U-0031	This product will remove more protein and sugar soils than traditional detergent and provides a fresh, clean, natural fragrance. This product may be used safely to wash fruit and vegetables for removing pesticides, herbicides, fertilizers and organic soils.	61	
WF5U	WF5U-0036	This product removes soils without damaging metal, rubber, vinyl, plastic, paint or fabrics. This product does not cause allergic responses in skin. A warm water sink for soaking dishes and 2 to 3 caps full of the product will remove more protein and sugar soils than traditional detergent and provides a fresh, clean, natural fragrance. This product may be used safely to wash fruit and vegetables for removing pesticides, herbicides, fertilizers and organic soils.		
XB9O	XB9O-0015			

Forming Lubricants	AJTK	AJTK-0031	A readily biodegradable solvent, derived from citrus peels and soybeans, suitable for many types of industrial applications such as parts cleaning, cold cleaning, resin removal, ink removal, and heavy oil degreasing.		
	AJTK	AJTK-0032	This product is a readily biodegradable soy-based metal forming fluid formulated with select US grown vegetable seed oils for use as a high performance metal forming fluid.		
	AJTK	AJTK-0033	This product is a readily biodegradable soy-based metal forming fluid formulated with select US grown vegetable seed oils for use as a high performance metal forming fluid.		
	AJTK	AJTK-0034	This product is a readily biodegradable soy-based metal forming fluid formulated with select US grown vegetable seed oils for use as high performance metal forming fluid.		
	AJTK	AJTK-0056	A readily biodegradable solvent, derived from citrus peels and soybeans, suitable for many types of industrial applications such as parts cleaning, cold cleaning, resin removal, ink removal, and heavy oil degreasing.		
	HAKV	HAKV-0025	Provides extreme pressure lubricity allowing tube bending, stretch forming, press braking, swaging and similar applications to be performed with ease.		
	HAKV	HAKV-0044	This product dries to a waxy film permitting the most demanding processes to be accomplished without signs of seizing or galling. The film easily washes off with water. Apply this product to clean dry base stock prior to fabrication. This product is best used in conjunction with tool & die treatment. Together they combine to provide a synergistic effect which will eliminate galling, seizing and sticking. Application: Spray, dip or tumble. A thin film will dry faster and perform better. SHAKE WELL before and during use. Keep containers closed to prevent evaporation.		
	KM73	KM73-0001	Forming lubricant	85	
	RDO8	RDO8-0004	Designed for the most difficult metal-forming applications. It provides high-level lubricity performance, which can offset the use of conventional chlorinated additives. This product will enhance performance in all types of ferrous metal working applications, which utilize a water-soluble design. It optimizes the plant-based content for the most economical design. It may be removed with a mild alkaline spray or warm water rinse. This product is a 100% water-soluble. Use at levels up to 1:5 for heavy duty metal removal and drawing/stamping operations.	85	

	RDO8	RDO8-0058	Designed for general-purpose, high volume metal-forming applications. It provides high-level lubricity performance, which can offset the use of conventional chlorinated additives. This product will enhance performance in all types of metalworking applications which utilize a water-soluble, and may be used at levels up to 1:5 for heavy-duty metal removal and drawing/stamping operations. It provides rust protection up to a 20 to 1 dilution (indoors only) and may be removed with a warm water rinse.	71	
	RDO8	RDO8-0079	100% water soluble and specifically designed for metalworking and metal forming of aluminum. It provides high-level lubricity performance, which can offset the use of conventional chlorinated additives. This product will enhance performance in non-ferrous metalworking applications, which utilize a water-soluble design. This product is water-white and water thin. It is particularly recommended for thin gauge aluminum jobs where an invisible residue and viewing of the work piece is preferred. Use at levels up to 1:10 for most nonferrous metal removal and drawing/stamping operations		
	WF5U	WF5U-0016	Designed specifically for the most difficult metal-forming operations. it provides high level lubricity performance; which can offset the use of conventional chlorinated additives. does not contain oil, chlorine or sulfur. Designed specifically for metal-forming operations when painting is a secondary operations. This product will enhance performance in all types of ferrous and on-ferrous applications which utilize a water soluble design. It may be recycled via filtration to reduce economics by up to 25%. It is mild to the skin and does not leave a tacky residue. The Dried residue on the formed part may be painted over without cleaning in most applications.	38	
	WF5U	WF5U-0017	Designed specifically for the most difficult metal-forming operations. it provides high level lubricity performance; which can offset the use of conventional chlorinated additives. does not contain oil, chlorine or sulfur. a unique plant-based vanishing oil with excellent high temperature oxidation stability. It contains no solvents or VOC's and is therefore specifically recommended as a varnishing oil	99	
Gear Lubricants	AJTK	AJTK-0020	Premium-quality gear lubricant formulated with the best optimized biotech-based, domestically grown, natural seed oil that surpasses the lubricity of most conventional oils. It protects against wear, has a high flash point for safety and is readily biodegradable.		
	AJTK	AJTK-0047	This product is a premium quality biodegradable gear lubricant formulated with the best optimized biobased USA-grown natural seed oil that surpasses the lubricity of most conventional oils. It protects against heat, has a high flash point for safety and is readily	81	

		biodegradable.		
BP37	BP37-0071	This product is a premium quality gear oil with viscosity grade ISO 220.		
HAKV	HAKV-0026	Only readily biodegradable and worker-friendly industrial gear fluids offered in true AGMA 2-8A viscosities. High performance meets or exceeds manufacturers' standards.		
J7A3	J7A3-0003	Gear oil	4	
JB88	JB88-0007	Food grade gear oil concentrate.		
JY3G	JY3G-0036	Biodegradable food grade industrial gear oils formulated with premium high oleic canola oil.		
JY3G	JY3G-0004	Biodegradable industrial gear oil blended with synthetic ester base stocks.		
N1H5	N1H5-0011	Our gear lubricants are biodegradable and virtually non-toxic to the environment and enable extreme pressure protection under shock loading conditions. This series also offers excellent compatibility with the materials of construction and a longer service life than conventional biodegradable gear lubricants.	89	
RDO8	RDO8-0068	This product is a gear lubricant that combines the advantages of a blended vegetable oil base with an extreme pressure performance package compounded from botanical materials. This product is a non-toxic, biodegradable family of fluids for industrial gearboxes. It contains a unique blend of environmentally compliant corrosion inhibitors, thickeners and wear reducers. The proper AGMA grade is ideal for all types of gear units in a variety of services and environments and provides superior protection from heat and wear. This product's botanical EP package reduces sliding, rolling & pressure friction; lowers operating temperatures and prolonged fluid life; and improves heat transfer from gears to the exterior of gearbox. These lubricants are designed for use in industrial power transmission units and gearboxes. They can also be used as a general high viscosity industrial oil for sprockets, ways and chains. They offer cooler, more efficient running and significant savings minimizing friction and wear. They are non-foaming, water repelling and rust preventive.	97	
RDO8	RDO8-0086	Vegetable oil-based, heavy-duty gearbox oil.		

RDO8	RDO8-0097	This product is a gear lubricant that combines the advantages of a blended vegetable oil base with an extreme pressure performance package compounded from botanical materials. This product is a non-toxic, biodegradable family of fluids for industrial gearboxes. It contains a unique blend of environmentally compliant corrosion inhibitors, thickeners and wear reducers. The proper AGMA grade is ideal for all types of gear units in a variety of services and environments and provides superior protection from heat and wear. This product's botanical EP package reduces sliding, rolling & pressure friction; lowers operating temperatures and prolonged fluid life; and improves heat transfer from gears to the exterior of gearbox. These lubricants are designed for use in industrial power transmission units and gearboxes. They can also be used as a general high viscosity industrial oil for sprockets, ways and chains. They offer cooler, more efficient running and significant savings minimizing friction and wear. They are non-foaming, water repelling and rust preventive.	100	
RGWJ	RGWJ-0004			
RGWJ	RGWJ-0009	Gearhead Oil.		
RGWJ	RGWJ-0036			
RGWJ	RGWJ-0040	Designed to meet the GL-4 requirements of spiral bevel transmission and moderate service hypoid gears.	87	
RGWJ	RGWJ-0041	Designed for the right angle gear drive commonly used to reduce the speed of an irrigation engine to drive water well turbine pumps.	61	
RGWJ	RGWJ-0042	Recommended for lubricating spur, helical, bevel, and worm gear configurations which are subject to heavy loading or shock loading and are synthetic base stocks and mild E.P./antiwear additives.	69	
RGWJ	RGWJ-0043	For gear drives and right angle gear drives commonly used in food processing equipment, essentially odorless and tasteless.		
RGWJ	RGWJ-0062	A biobased and biodegradable gearhead oil that provides protection advantage of mild EP and anti-wear of API GL-3 type gear lube.		
RGWJ	RGWJ-0063	A biobased and biodegradable gearhead oil that provides protection advantage of mild EP and anti-wear of API GL-3 type gear lube.		
RGWJ	RGWJ-0064	Same high performance as another of our products except the EP and anti-wear additives are designed for fluid clutch power shift systems		
RGWJ	RGWJ-0066	For gear drives and right angle gear drives commonly used in food processing equipment, essentially odorless and tasteless.		
T3ON	T3ON-0007			

General Purpose Household Cleaners	AY9O	AY9O-0006	Formulated to remove greasy soils commonly found in the kitchen, but without the unpleasant fumes that can irritate your skin, nose and eyes. Pleasant citrus scent. Ingredients: Hydrogen peroxide (the active stain removal agent), biodegradable surfactants (for soil removal), citrus oil (for grease removal), food-grade, non-toxic oxygen stabilizers (to help the hydrogen peroxide last longer), Water.		
	C9PX	C9PX-0006	Safer for kids with asthma and allergies, this non-toxic and fume free cleaner powerfully cleans windows, mirrors, hard surfaces, play areas and toys, laminated furniture and woodwork without the hazardous eye, lung and skin irritants found in other products.	61	
	FCM9	FCM9-0007	The cutting-edge biotechnology of natural enzymes solves important household problems. We've harnessed this new technology for Citra-Spot spot and stain remover. Citra-Spot attacks and breaks down organic stains and odors such as blood, pet stains, urine, grass stains and more. Available in a 22-ounce spray bottle.	42	
	H96J	H96J-0002	A safe and natural cleaner based on soy and corn technologies. Cuts through stubborn grease and grime. This product handles the toughest chores... from removing baked-on grease, crayon and black heel marks to hand cleaning and more. The unique two sided scrubbing cloth provides scratch-free scrubbing on one side and an absorbent wiper on the other.	54	
	HNG5	N5U4-0006	A phosphate-free, non-alkaline household cleaner that is safe enough to use on fruits and vegetables! Tough enough to tackle stubborn stains yet gentle enough for fine washables, use this biodegradable cleaner diluted or full strength around the house as a laundry detergent, a stain remover, a produce wash and more.		
	J3TP	J3TP-0001	Marketed product type: BBQ grill cleaner, Degreaser, Driveway & patio cleaner	91	
	J3TP	J3TP-0010	A natural soy based, non toxic product for effective cleaning of oil, ink, gum, tar, scuff marks, nail polish and other stains from hard surfaces. Non Flammable, cleans up with soap and water.		

K4U8	K4U8-0003	Environmentally Friendly • User Safe • Plant-Based Ingredients. Finally A Cleanser That Won't Leave A Messy Residue. Provides very low dynamic surface tension resulting in faster, more efficient cleaning. Quickly and easily breaks down even the toughest grease, oils and grime from hard surfaces. Super-concentrated - three times more scrubbing power than comparable products. Won't leave a messy, powdery residue; can be used with or without water. Use it on tubs, tile, stove tops, toilets, countertops, cookware and stainless steel. Takes off mineral deposits, mold and mildew from tile grout, and soap scum from shower doors. Does not contain bleach, calcium carbonate, or phosphate; non-abrasive. Has almost no odor and is gentle on hands.		
M3D3	M3D3-0029	This product is an unscented natural bactericidal formulation that works to destroy odors caused by organic decay, smoke, chemicals, sewage, mold, mildew, human scent, fish and animals. Accumulative, long lasting residual effects. Non-staining formula. This product is a natural citrus bactericidal formulation that works to destroy odors caused by organic decay, smoke, chemicals, fuel oil, kerosene, diesel fuel, gasoline, sewage, mold, mildew, human scent, fish and animals. Accumulative, long lasting residual effects. Non-aerosol spray protects the ozone layer. Uses: Deodorize floors, walls, fabrics, laundry rinse cycle to eliminate odor, spray effected pet areas, interiors of boats, cars & RV's, boating & hunting shoes, holding tanks/bilges, hunters outer apparel, fishing lures		
M3D3	M3D3-0037	Fabric Protector - Water Repellent. Repels wetness, stains, soil, road salt, and grime. Keeps fabrics dry and looking new. Odorless, fast-drying formula that will not discolor surface. One application provides an unequalled moisture barrier that lasts for months. Applications: Professional: carpet, upholstery, canvas, fabrics, leather. Outdoor gear: boots, tents, tarps, backpacks, sleeping bags. Outerwear: coats, snow pants, gloves, Gortex, hunting gear and hundreds more.		
M3D3	M3D3-0040	Neutral Germicidal Cleaner - Mold Removal & Remediation. A one-step disinfectant cleaner that is effective against a broad spectrum of bacteria, is virucidal* (Including HIV), fungicidal, and inhibits the growth of mold and mildew and their odors when used as directed. EPA registered and recommended for use in hospitals, medical and dental offices, nursing homes, public restrooms, institutions, schools, colleges, athletic facilities, food processing plants, food storage areas, kitchens, restaurants and bars, airports, transportation terminals, hotels, and motels. This product contains no phosphorous.		

M3D3	M3D3-0041	Heavy Duty Shop Degreaser. Quickly dissolves and emulsifies heavy greases, carbon deposits, soap scum, oxidized waxes, oil, inks and heavy dirt buildup. Excellent results on floors, walls, engines, greasy laundry, kitchens, machinery, ceramic tile, and concrete. A very effective concentrate for hand washing, mopping, automatic scrubbers, and pressure washers. ECONOMICALLY CONCENTRATED for use in garages, motels, schools, factories, restaurants and hospitals.		
M3D3	M3D3-0044	Bowling Ball Cleaner. A professional bowling ball cleaner that deep cleans and lifts out grease, oils and grime from bowling balls. Just spray-on & wipe-off for fast and effective cleaning. Restores factory finish for maximum hook and a great shine. Removes belt and rubber marks and increases "tac". Contains natural citrus oil extracts. Safe to use on all ball types and all hard surfaces. 100 % Biodegradable.		
HNG5	HNG5-0009	This product unlocks the natural power of citrus to dissolve grease, penetrate stains and wash away tough dirt. Unlike many conventional heavy-duty cleaners, our product does not create unpleasant fumes, will not leave harmful residues and is safer for the environment.		
ULHI	ULHI-0020	This product is specially formulated to remove the greasy soils most commonly found in the kitchen. Unlike many conventional kitchen cleaning products, our product does not create unpleasant fumes and will not leave harmful residues.		
P382	P382-0001	This product is a thick liquid cleaner that effectively removes hard water deposits from all surfaces that come in contact with water. The product chemically attacks the calcium carbonate and soap scum on surfaces where water has evaporated. A mild abrasive is added to help remove the stain when rubbing the surface. The product's consistency is thicker than other household cleaners, it adheres to the surface and requires less product and effort to remove the deposit. Most important, it is safe for general household use		
RDO8	RDO8-0038	Spray or dip applied to air filters, this product will neutralize existing airborne protein allergens on contact. Monthly reapplication will ensure improved particulate catch.	95	
S198	S198-0015	Cleans, sanitizes and deodorizes kitchens, baths, pet areas and diaper pails, and handles a variety of tough cleaning situations.		
TA8E	TA8E-0021	A naturally derived powder cleanser that contains no chlorine bleach. Safer for the user and the environment. Mildly abrasive for use on sinks, counter tops, bathtubs, shower stalls and other areas where slight abrasion is needed.		

	ULHI	N5U4-0007	Kitchen Cleaner is specially formulated to remove the greasy soils most commonly found in the kitchen. Unlike many conventional kitchen cleaning products, our product does not create unpleasant fumes and will not leave harmful residues.		
	ULHI	ULHI-0019	Degreaser	72	
	ULHI	ULHI-0036	Carcinogen-Free, Readily-Biodegradable cleaning and degreasing solution. Available in ready-to-use quarts with applicators and one gallon highly concentrated jugs.	82	
	V865	V865-0010	Our new Multi-Surface Cleaner cleans and enhances many surfaces including granite, stainless steel, finished wood, and smooth leathers. Enhance effectively cleans and leaves a beautiful shine behind. Great for the car too! Another great product that contains no harmful ingredients.	10	
	X4H4	X4H4-0006	We developed our smudge-busting Stainless Steel Cleaner & Polish using innovative natural vegetable-derived ingredients and then added refreshing essential fragrances. It easily cleans food grime, oily fingerprints and even kitchen grease. This unique streak-free formula produces a beautiful shine on appliances and all stainless steel surfaces. It is non-toxic and safe for food-handling environments. Available in grapefruit-ginger, lemongrass-lime, or sage-citrus scents.	81	
Industrial Cleaners	A7XC	A7XC-0001	General, all purpose cleaner/degreaser, this product was especially developed for use on board naval vessels. This product will not harm you, color stripping or the surface of any aircraft. Clean your carrier flight deck and leave NO residue that could be reactivated with a slight rain or mist, creating a slippery deck. Removes grease, wax, gum, dirt, oil, ink, mildew, carbon, running rust and difficult soils from any surface not harmed by water or solvents. This is the safest clean anything cleaner available on the market today. If it is cleanable, this product will clean it. Do away with all the various specific cleaners you have around and use only one, this product, the jet action safety cleaner and degreaser that has an unlimited amount of uses. Environmentally Friendly, Non-Toxic, Non-Flammable, Non-Corrosive		
	BP37	BP37-0013	Engine Cleaner	49	
	BP37	BP37-0017	Industrial strength, biodegradable and water-dilutable cleaner and degreaser. Use in parts washers, dip tanks, and ultrasonic and pressurized cleaning systems.		

BP37	BP37-0038	This product is a heavy-duty, water-dilutable, cleaner/degreaser liquid. This product is designed for extra tough cleaning jobs in industrial and commercial applications. This product cleans heavy-duty machinery, shop tools, hoods, parts-in-process, food processing equipment, office equipment, floors, walls, lavatories and desks. This product is very effective in dissolving grease, oil, paraffins and waxes.	85	
BP37	BP37-0097	Heavy-duty water-based alkaline cleaner and degreaser offering unique flash corrosion protection. This product can provide corrosion protection for up to 6 months during indoor storage.		
BP37	BP37-0282	Heavy-duty, water-based cleaner/degreaser formulation combined with unique corrosion protection action. Can be metered into power washers, steam cleaners, sprayers and dipping tanks. USDA approved.		
BP37	BP37-0283	Heavy-duty cleaner/degreaser developed for cleaning industrial equipment. Excellent for power washing machinery or conveyor systems. Low foaming formulation phosphate-free.		
C2C8	C2C8-0001	This product removes grease, oil, sludge, dirt, tar, asphalt, mastic, adhesive, wet paint, and more without harming the cleaning surface. This product is also non-flammable, and rinses away clean and residue free with water.		
C3PW	C3PW-0003	Heavy-duty cleaner used for the removal of grease and oils from equipment and machinery. It is environmentally safe and biodegradable. This formulation has proven successful in removing petroleum oils as well as water-based lubricants from materials, including titanium and aluminum, without oxidizing the surface of the metals. This product is completely free rinsing, and has also proven to be a highly effective scour for the removal of oils, greases, soils, and lanolin from wool and cloth.		
C9PX	C9PX-0002	A moderately alkaline, water dilutable, extreme duty stripper/cleaner. Whitewall tire cleaner, latex paint remover, oven cleaner, industrial plant soak tank, pressure wash, steam cleaning compound, extreme duty transportation vehicle and engine cleaner, heavy duty truck and trailer pressure washer, printing plate cleaner, water base tire mold cleaner, silicone and water base varnish remover.		

C9PX	C9PX-0018	A 21st century alternative to traditional extraction cleaners. Replaces powder that can clog lines and affect pumps. Replaces Butyl based cleaners that can irritate lungs and do not remove food residue well. Replaces high alkaline products that can damage or brown carpet and strip carpet protectors. Cleans deodorizes and emulsifies grease economically. May be disposed of into sewers without pH adjustment. Carpet Extraction, Bonnet Cleaner, Traffic Lane Cleaner, Restaurant Carpet Degreaser, Truck Mount Emulsifier, Upholstery Cleaner		
C9PX	C9PX-0023	A pH neutral, ALL NATURALLY DERIVED, water dilutable cleaner/degreaser. Replaces corrosive, caustic and Butyl based degreasers that can instantly burn skin or permanently damage internal organs. Outperforms traditional water-soluble degreasers. May be disposed of into sewers without pH adjustment. A tremendous spray and wipe type cleaner.		
CAMU	CAMU-0001	Solvent blends with DMSO are readily available to assist in the removal of any of the most difficult residues in tight geometries. DMSO is a powerful solvent for removing a wide variety of coatings. It gives inks many superior qualities with respect to the ease of printing and quality of print.		
CJQ1	CJQ1-0001	Biodegradable, Non-toxic solvent cleaner made from farm grown plants! It is an earth friendly product. Formulated for use in applications where rinsibility is critical, This product is tested and proven to be a safe, effective and powerful product for use in many industries including: Industrial/Manufacturing, Electronics, Paint Gun Clean-up, Asphalt, Maintenance, Graphic & Jet Ink Clean-up, Graffiti Removal, Grease & Oil Clean-up, Mastic Removal, Adhesive Removal, Heavy Lube Clean-up, Tar & Asphalt Removal, Decal Removal, Hydrocarbon Cleaning, Rubber Compound Cleaning, Paint Clean-up		
D54E	D54E-0012	This product is a biodegradable solvent occurring in nature as the main component of citrus peel oil. As a straight solvent, citrus natural solvent can replace a wide variety of products, including mineral spirits, methyl ethyl ketone, acetone, toluene, glycol ethers, and of course fluorinated and chlorinated organic solvents. Replacement for toxic chlorinated solvents, glycol ether, MEK (methyl ethyl ketone), xylene, Freon, and CFC's parts cleaner, engine degreaser (automotive, aircraft and aerospace industries), electronics cleaning, tar and asphalt remover, asbestos shingle remover, graffiti remover, grease trap maintainer, lift station and sewage treatment applications, hand cleaner, floor cleaner, printing press cleaner, carpet stain cleaner, metal cleaner, aerosol ingredient, fragrance additive, deodorant for petroleum industry, heat transfer medium, and possible candidate for a variety of medical applications		

D5XU	D5XU-0004	This product is readily water emulsifiable and has extremely high solvency characteristics. Recommended as a cleaner-degreaser for difficult jobs where the use of petroleum based or water based cleaning agents is neither desirable nor effective.		
DRL2	DRL2-0006	Solvent made from 100 percent domestically grown soybeans, not petrochemicals. As a result, this solvent is safe for the environment and safe for users.	74	
ES5W	ES5W-0003	Methyl ester of fatty acid that performs as well as harsh chemical solvents, but made from soybeans and priced affordably. Some current applications are: adhesive removers, asphalt cleanup, auto waxes, corrosion preventatives, graffiti removes, hand cleaners, metal working lubricants, mold release agents, oil spill cleanup and bioremediation, paint removes, parts cleaning and degreasing, paint and resin cleanup, pesticide carriers and adjuvants, and screen printing ink removers.		
F8N9	F8N9-0001	An amazing all natural citrus extract solvent degreaser deodorizer which is designed for a multitude of industrial and institutional cleaning, degreasing and deodorizing applications.		
F8N9	F8N9-0003	Our newest cleaner, degreaser that is non-flammable, non-toxic, non-corrosive, non-polluting and bio-degradable. Will clean from rigs and platform oils and disperse greases. This product will degrease all hard surfaces. It can be used as a heavy duty cleaner both in manual and automatic machines. USDA APPROVED. It is one of 50 products that the EPA has put on the National Contingency Plan (N.C.P.) list of registered oil emulsifiers. Our product is an extremely effective oil emulsifier suitable for any kind of oil soil cleaning applications, in the petroleum, marine and other industries. It's a low-foaming detergent concentrate, comprised of non-ionic and specialty surfactants, a water softener and conditioner, and builder powders to raise and buffer pH. It contains NONE of the 327 carcinogenic substance on the EPA list of hazardous materials.		
G944	G944-0016	This product uses Soybean Oil Extract in place of high levels of citrus extract (d'limonene) and petrochemicals to offer you a much safer, natural alternative without sacrificing health, environmental, and cleaning quality.	92	
I677	I677-0012	Asphalt Cleaner, Industrial Cleaner, Degreaser. Cleaners & Degreasers. 100% orange peel solvent with emulsifier.		
I677	I677-0014	80% Pine oil soap used as an emulsifiable strong solvent cleaner. Also available as similar product which is similar to above, but 15% pine oil. Another similar product is in a pure gel form.		

J4FB	J4FB-0005	Formulated for use in applications where rinsability is critical, this product is tested and proved to be safe, effective and powerful product for use in many industries including: Industrial/Manufacturing, Electronics, Paint Gun Clean-up, Asphalt Maintenance, Graphic & Jet Ink Clean-up, Graffiti Removal, Grease & Oil Clean-up, Mastic Removal, Adhesive Removal, Heavy Lube Clean-up, Tar & Asphalt Removal, Decal Removal, Hydrocarbon Cleaning, Rubber Compound Cleaning, Paint Clean-up		
J4FB	J4FB-0009	Environmentally safe, industrial-strength solvent made from domestically grown soybeans.		
JOXA	JOXA-0001	This product is a 100% active, all natural, highly concentrated citrus based industrial degreaser cleaner in an aerosol can. Concentrated cleaner degreaser is water rinse able and environmentally safe. Contains NO Chlorinated solvents, NO Petroleum Distillates only natural byproducts. Industrial Degreaser that easily is emulsifiable in water. Powerful citrus oils quickly cut grease and grime with no harsh chemical odors. Product leaves area clean and with a fresh citrus fragrance.		
JOXA	JOXA-0003	To begin, this solvent degreaser has virtually NO VOC's (Volatile Organic Compounds) known to contribute to low level ozone or smog. This product is non-toxic and has no strong smell, fumes or vapor. It is a non-petroleum-based, biodegradable product derived from a renewable resource (soy beans). As for this product's cleaning ability, it removes grease, oil, sludge, dirt, tar, asphalt, mastic, adhesive, wet paint, and more without harming the cleaning surface. This product is also non-flammable, and rinses away clean and residue free with water. This product is a great alternative to citrus based degreasers when flammability, plastic or paint compatibility, or VOC are concerns. CPC recommends industrial companies to start using this product today. It is packaged in 20-ounce aerosol cans with 15-ounce net weights. Complies with 2005 California VOC regulations, and with all its other earth friendly attributes, it appears that this product (and the numerous other soy based product to follow) will be a viable solvent cleaning option for many years to come.		
JW37	JW37-0007			
K46X	K46X-0002	100% Biobased, Registered with the USDA and Approved by the U.S. EPA's Design for the Environment Program (DfE), this product is a powerful, multi-purpose cleaner and degreaser. This highly effective, non-ionic primary linear alcohol surfactant can be used for a wide range of routine and emergency cleaning applications to remove all hydrocarbon soils including petroleum derivates, fats, oils, lipids, proteins, sugars.		

K46X	K46X-0003	100% Biobased and Approved by the U.S. EPA's Design for the Environment Program (DfE), this product is formulated to eliminate residue, improve flash drying and leave an antistatic surface that minimizes soiling. This product is ideal for: Glass, Bright, Metals & Chrome, Painted Surfaces, Vinyl & Acrylic Finishes, Ceramic Tile, Plastic Laminates, Porcelain Tubs & Sinks, Rubber. This product will not stain or leave streaks, and it great for preventative maintenance, continuous use will prevent damage to rubber and vinyl gaskets and leave these surfaces oxidant-free.		
K46X	K46X-0004	100% Biobased and Certified as a Clean Air Solvent by the CA South Coast Air Quality Management District, this aircraft & metal cleaner is specifically formulated to clean aluminum and other soft, nonferrous metal surfaces without harming metal finishes. This medium foaming cleaner is a safer way to remove soils from the exterior of aircraft, airport ground support equipment, municipal buses, subway & rail cars trucks, farm tractors & other agricultural equipment, off-road construction equipment mining equipment, marine vessels. This product meets Air Force Mil-PRF-87937 Specification for Type IV Combined Cleaner and Solvent and has broad usage for specialty aerospace parts and component manufacturing including fin coils that require delicate soft metal cleaning.		
K4U8	K4U8-0010	This product is a non-emulsifying cleaner & degreaser that quickly and easily penetrates and breaks down even the toughest soils, grease and grime. It produces low, controlled foam, is totally free rinsing, and leaves no residue to re-attract soils. Super-concentrated, dilute for greatest economical advantage, up to 1:256. Great for use in pressure washers, won't harm plants or shrubs. Safe on aluminum, is non-conductive - terrific for truck, RV, building, or pool deck washing. Use on concrete, marble, stone, slate, brick, quarry/ceramic tile, vinyl, asphalt, linoleum, rubber. Product is non-flammable, safe to the skin, biodegradable, and produces no odors.	52	
K6ON	K6ON-0001	A readily biodegradable solvent, derived from citrus peels and soybeans, suitable for many types of industrial applications such as parts cleaning, cold cleaning, resin removal, ink removal, and heavy oil degreasing.		
KE9G	KE9G-0001	23L X 23W Biodegradable, biodegradable citrus cleaning solvent, degreasers, cleaning compound, engine degreaser, tar & asphalt remover, parts washer solvent, ink remover, press wash, roller wash		
KG89	KG89-0003	This product is a bio-based, biodegradable, non toxic, low VOC/ high performing solvent that is derived from American grown soybeans. This product, soy methyl ester solvent, is the "green" choice for solvents that meets stringent EPA clean air and other environmental challenges faced by today's solvent users.		

KG89	KG89-0004	This product is soy methyl ester solvent. Like another of our products it is a bio-based, biodegradable, non toxic, low in VOCs and a highly rated performance solvent, making it a logical choice for answering clean air and environmental challenges faced by today's solvent users. This product contains no antioxidants.		
KG89	KG89-0005	This product is a double distilled soy methyl ester solvent. The additional distillation process removes all color and odor from the solvent giving it a water-white appearance. Like another of our products it is bio-based, biodegradable, non toxic, low in VOCs and a highly rated performance solvent, making it a solid solution to the clean air and other environmental challenges faced by today's solvent users.		
KG89	KG89-0006	This product is a biodegradable, non toxic, low VOC water rinsable solvent that is highly compatible with many other solvents in formulations or microemulsions containing d'Limonene, NMP, mineral spirits and alcohols. Derived from soybean oil, this soy methyl ester solvent is blended with a surfactant for easy water rinsing. The product's "green" profile makes it a logical choice for answering clean air and other environmental challenges faced by today's solvent users.		
KG89	KG89-0007	This product is a biodegradable, non toxic, low VOC water rinsable industrial solvent. Derived from soybean oil, this soy methyl ester solvent is blended with a high performing, biodegradable surfactant for easy water rinsing. This product's "green" profile makes it a logical choice for answering clean air and environmental challenges faced by today's solvent users.		
KG89	KG89-0008	This product is a biodegradable, non toxic, low VOC high oleic content solvent derived from canola oil. The high oleic characteristic makes the solvent especially effective in higher heat and in applications where oxidation has the greatest potential. Like its soy methyl ester counterparts, the methyl canolate is a high performing "green" solvent that meets clean air and environmental challenges faced by today's solvent users.		
KK69	KK69-0002	Advanced agri-synthetic alternative to conventional hydrocarbon solvents. The product is formulated with a highly functional, grease-penetrating additive package designed to aid in removing tough grease deposits.		
KV79	KV79-0007	Industrial solvents and cleaners for the removal of tar, grease, oil, ink, graffiti, paint and other products.		

L8O1	L8O1-0002	The benefits of another of our products but with a lemon-lime fragrance. Although that other product has a very mild odor, we have a version with a bit of lemon-lime fragrance added. This product meets the same performance standards as its unscented peer and is specified by McDonnell Douglas (now Boeing) and deHavilland among others. It is also widely used in the vinyl window manufacturing and printing industries. EPA SNAP listed.	61	
M179	M179-0001	An industrial strength Cleaner and Degreaser, For tough oil and grease covered surfaces, Non-polluting and low foaming. Uses in Petroleum, Auto, Marine, Consumer applications, A unique water-based formulation that encapsulates and emulsifies petroleum based products rendering them non-flammable and biodegradable, Formulated to work in tough hydrocarbon spills, contamination and through micellular action.		
M179	M179-0002	Emulsifies greasy soil and prevents redeposit, balanced builder blend buffered alkalinity flash, corrosion inhibitor, no solvents		
M179	M179-0005	Industrial heavy duty maintenance cleaner for floors, walls, machinery, hoods, sumps, vent systems through cleaning devices.		
M179	M179-0009	Industrial maintenance cleaner for floors, walls, machinery, hoods, sumps, vent systems through mechanical cleaning devices, mop or bucket		
M179	M179-0010	A unique cleaner and degreaser that provides a quick breaking emulsifying surfactant systems that provides loam foam for use with any mechanical cleaning device and recycling scrubbers.		
M7FY	M7FY-0002	This product is a readily biodegradable replacement for MEK, Methylene chlorine, mineral spirits, other petroleum based solvents. Flash point greater than 300 F, VOC less than 50 g/L. Multiuse solution to address the EPA and environmental issues facing solvent users.	94	
M7FY	M7FY-0004	This product is a highly concentrated cleaner/degreaser comprised of a non-ionic surfactant system and natural lemon scent that may be used for the removal of hydrocarbon and organic soils (petroleum derivatives, fats, oils, greases, lipids, proteins, and sugars). This product is not a soap, detergent or petroleum based solvent and will not react with other chemicals to create hazardous conditions. This product is compatible with ozonated water and does not inhibit oil/water separators. This product will not harm fabrics and may be used without protective clothing or any special handling precautions and may be stored indefinitely.		

M7MP	M7MP-0001	This product is water based concentrated formulation. Its powerful formulation cleans and removes dirt, carbon, oil, and grease. It can be used in cold or hot cleaning/degreasing process. It resists rust formation on metal surfaces during and after cleaning.> This product is a zero VOC product> This product is readily biodegradable> This product is not a petroleum based product> This product is phosphate free, solvent free, butyl free, glycol free> This product does not deplete ozone layer> This product is non-flammable> This product is for cold or hot, manual or auto-wash applications> This product is alkaline in nature. Dilution with water significantly reduces alkalinity. A pair of protective gloves & eye glasses is recommended while handling.		
U4WQ	U4WQ-0003	Natural stone cleaner and calcium deposit remover.	80	
MODM	MODM-0003	This product is a water-rinsable, industrial strength degreaser designed to be used in concentrated form. Formulated with new soybean oil technology and boosted with d-limonene, this degreaser tackles the toughest tasks. A user-friendly product with a translucent pale yellow color and a pleasant hint of orange fragrance. All of the product's ingredients are active parts of its cleaning and degreasing ability. Void of any inactive ingredients, this product works in many medium to heavy duty cleaning tasks.	18	
NM61	NM61-0005	This product is a proprietary blended solvent that offers a solution to the Environmental and EPA issues facing those companies that use solvents. This solvent has proven effective as a replacement for naphtha, mineral spirits and other petroleum based solvents. This product removes heavy oils and greases, tars, adhesives and inks. This solvent has a KB value (which measures solvency) 65% greater than mineral spirits. More importantly, it is non-toxic and is 95% degraded in soil in 28 days. Users will also be pleased to find this solvent is low VOC and generates ultra low evaporative emissions.		
NMO3	NMO3-0009	Biodegradable, Environmentally Sensitive -This product uses biodegradable, naturally derived, organic cleaning agents and surfactants. Phosphate-Free - our products contain no phosphates, which disrupt the natural ecological balance of streams and lakes. Economical, Highly Concentrated Formula -This product is a concentrated formula and therefore requires less packaging, which reduces solid waste in the environment. It also saves you money.		
NMO3	NMO3-0011	A ready -to-use all natural 100% biodegradable citrus solvent cleaner, degreaser, and deodorant that will safely and easily remove all heavy grease and soil deposits by heavy duty penetration and emulsifying action. Contains no petroleum distillates or butyl cellosolve.		
O9MM	O9MM-0011	Biobased cleaner derived from a 100% blend of corn and soy esters.	97	

O9MM	O9MM-0012	The aMAIZEing 100% Biobased Solvent & Stripper is based on a combination of corn and soybean oil esters designed to lift and remove mastics, adhesives, paint and more from concrete, masonry, wood, metal and a host of other surfaces.	95	
PN64	PN64-0004	This product is a heavy-duty, all-purpose citrus cleaner/ degreaser and is our best performing multi-purpose cleaner, specially blended to clean a variety of surfaces. Our heavy-duty cleaner is formulated to cut through oil, tar, grease, & road dirt, while being tough enough to remove all industrial grime as well.		
PWLI	PWLI-0006	This product is a variation of our solution cleaner, whereby the strength is greatly amplified for heavier degreasing applications, such as in the auto parts, aircraft, boat, truck, machine shops, farm equipment, and most manufacturing plants with automated equipment, factories, foundries, and the military. This product is disposable in accordance with local municipal regulations, is able to clean parts without being heated, is aqueous based and will work with all equipment, has a scrubbing agent that will provide micron level cleaning, is totally biodegradable, has no VOC's, and has no flashpoint, is environmentally safe, contains no phosphates and nitrates, and is people and pet safe.		
RDO8	RDO8-0012	Can be used in a variety of cleaning applications. Can also be used as a co-solvent or solvent additive in non-ionic surfactant solutions for heavy duty degreasing. It is intended to loosen hardened hydrocarbon soils.		
RDO8	RDO8-0045	This product is a powerful non-evaporative solvent that creates an effective release agent for heavy grease, oil and tar, as well as organic and some inorganic inks. A blend of soy methyl ester and other vegetable esters, this product is ideal for cleaning tools, parts and equipment in the transportation and printing industries. This product is not water-soluble and may be used with other plant based solvents and surfactant systems for more effective cleaning.	97	
RDO8	RDO8-0046	This product is an emulsion of soy methyl or ethyl ester together with nonionic surfactant and water for use as a co-solvent or degreaser. It is a milky white aqueous solution with solvent properties similar to soy ester while having no measurable VOC. This product is suitable for solvating and removal of organic inks, latex, oils, lubricants, and fats and greases. It may also be used as a heated solvent for vapor degreasers, ultrasonic cleaners, and as a CIP solution for cooking oils.	77	
RDO8	RDO8-0049	Nonvolatile industrial solvent that will not react with other chemicals.		

RDO8	RDO8-0056	This product is a 100% water miscible, highly evaporative solvent that can replace hazardous volatile products. An organic solvent with low flammability, it is safe to use, will not react with other cleaning compounds and is acceptable for landfill or sewer disposal. This product has a Kauri Butinal (KB) value estimated at 1,000+ and is appropriate for applications where the item being cleaned needs to be left dry, without any residual product requiring a further cleaning steps, such as electronic contact cleaning. This product is a suitable release agent for natural and synthetic resins, silicones, and epoxies, as well as an effect co-solvent with aqueous surfactant systems.		
RDO8	RDO8-0057	This product is a non-evaporative solvent that safely removes most organic and inorganic soils without damaging the cleaning surface. With a Kauri Butinol (KB) value estimated in excess of 150, this product removes lubricants, brake fluid, engine oil, lithium grease, paint, permanent marker, and certain adhesives. This product is non-aromatic and contains no ozone depleting chemicals. This product is an organic, antioxidant solvent that will not harm most plastics, vinyl, nylon, butene, rubber, ferrous metals or natural fibers. This product is water miscible and works effectively in ultrasonic cleaners and automatic parts cleaners.	91	
RDO8	RDO8-0062		96	
RDO8	RDO8-0089	Coatings solvent. Multiuse solvent that addresses the environmental, regulatory and safety issues facing solvent users today and in the future. Contains a food-grade antioxidant. Used in specialty coatings applications where product oxidation is desired.		
RDO8	RDO8-0090	Distilled Coatings solvent. Used in specialty coatings applications where product oxidation is desired. Water-white product for applications where color bodies cause difficulties. Multiuse solvent that addresses the environmental, regulatory and safety issues facing solvent users today and in the future. Contains a food-grade antioxidant.		
RDO8	RDO8-0091	This product is a solvent that addresses the environmental, regulatory and safety issues facing solvent users today and in the future. Contains a food-grade antioxidant. With surfactant additive. Water rinsable to reduce film in degreasing.		
RDO8	RDO8-0094	Multiuse solvent that addresses the environmental, regulatory and safety issues facing solvent users today and in the future. Contains a food-grade antioxidant.		
RDO8	RDO8-0100	bio-based solvent		

RGWJ	RGWJ-0022	A specially formulated, ultimately biodegradable Soy Cleaner/Degreaser that can be used to replace petroleum solvents for cleaning parts and equipment. This safe, nonflammable product has been formulated with anti-oxidants and corrosion inhibitors for improved stability.		
RGWJ	RGWJ-0023	An excellent biobased, ultimate biodegradable product that can be used to replace petroleum solvents for cleaning parts and equipment. May be used as a straight solution or may be solubilized with water before use. When used as a straight solution the product cleans and breaks down easily with a garden hose or pressure washers. Provides short term corrosion protection.		
RGWJ	RGWJ-0093	A specially formulated, ultimately biodegradable Soy Cleaner/Degreaser that can be used to replace petroleum solvents for cleaning parts and equipment. This safe, non-flammable product has been formulated with anti-oxidants for improved stability.	92	
RYB8	RYB8-0003	This product series solvents are mixtures of terpene hydrocarbons manufactured from naturally occurring orange and pine terpenes. The pine terpenes contained in this series of solvents are isomeric with citrus d-limonene, but have the advantage over the fruit by-product of factory controlled quality, stable availability and performance benefits in certain applications.	100	
RYB8	RYB8-0004	A blend of esters, citrus terpenes and surfactants formulated to offer a balance of selective solvency, low toxicity and no environmental impact. It is readily biodegradable and does not contribute to ozone depletion. Effectively removes light oils, greases, lubricants and other metal-working soils. An excellent general shop cleaning solvent, it typically replaces the use of high VOC solvents used in machining operations. Concentrated product provides some corrosion protection if left on the surface of a metal part; however, it may also be blended with corrosion inhibitors to ensure complete protection.	95	
RYB8	RYB8-0006	An ultra-low residue terpene solvent designed for hand wipe cleaning applications. Has exceptional solvency and leaves no surface residue upon evaporation. A very high purity d-limonene solvent, biodegradable, made from 100% citrus terpenes.	100	
RYB8	RYB8-0008	This precision cleaner is a food grade, citrus terpene-based product that is especially effective against heavy oils and greases, adhesives, asphalt, tar, waxes and pitches. It is used in hand wipe cleaning processes as an alternative to other chemicals. Because it is more highly refined, it is an excellent alternative to technical grade d-limonene, offering lower odor and non-volatile residue.	100	

RYP8	RYP8-0010	This precision cleaner is a blend of highly refined citrus terpenes, non-linear alcohol and aliphatic hydrocarbons. It is an excellent cleaner for a broad range of soils including oils, greases, adhesives, mold release, fingerprints, silicone, tar and others.	18	
S198	S198-0008	Replace mineral spirits, lacquer thinner, MEKs and other dangerous environmentally threatening chemicals with a natural soybean oil-derived solvent. It effectively removes dirt, oil, grease, tar, grime, paint, printing inks and lubricants.		
SC8J	SC8J-0001	These products are unique natural biomass alcohol based invert emulsions utilizing the newest research chemistry. These emulsions do not contain aromatic, petroleum, chlorinated or fluorinated solvents. They have low odor and a Tag Closed Cup flash point over 212° F providing safer and pleasant environments at work stations in and out of the plant. Our patented technology offers the biomass alcohol technology with low degree of odor and flash points over 212° F.		
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SC8J	SC8J-0002	General-purpose heavy-duty cleaning and degreasing solvent. This unique solvent blend is very effective in resin cleanup and degreasing, and as a solvent for general-purpose use.	69	
SC8J	SC8J-0005	This product is a general purpose heavy duty cleaning and degreasing solvent. This unique solvent blend is very effective in resin clean-up and as a solvent for urethane manufacture. Ideal for use in all engineering applications, especially as a urethane flush and clean-up solvent.		
SC8J	SC8J-0006	This product is a general purpose, heavy duty concentrate, cleaning and degreasing microemulsion. Ideal for use in all heavy duty cleaning and degreasing applications. A modern cleaning and degreasing solvent emulsion for machine parts, tools, metals and many plastics.		
SC8J	SC8J-0008	These products are unique natural biomass alcohol based invert emulsions utilizing the newest research chemistry. These emulsions do not contain aromatic, petroleum, chlorinated or fluorinated solvents. They have low odor and a Tag Closed Cup flash point over 212° F providing safer and pleasant environments at work stations in and out of the plant. Our patented technology offers the biomass alcohol technology with low degree of odor and flash points over 212° F.		

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T17G	T17G-0001	Environmental- and safety-related properties makes for an ideal alternative to solvent-based cleaning formulations. Essentially odor-free and has a flash point greater than 300°F.		
T3ON	T3ON-0010	An excellent bio-based, biodegradable product that can be used to replace petroleum solvents for cleaning parts and equipment.		
TA8E	TA8E-0002	All-purpose solvent for use as a solvent potter for carpets, industrial equipment wipe, vapor degreaser, pars washer, rubber burn remover or wherever very hazardous solvents need to be replaced.		
TNX7	TNX7-0001	This degreaser conveniently comes in a one gallon jug featuring a revolutionary designed Easy Grip handle. The Easy Grip system was ergonomically designed to perfectly fit the human hand. This feature not only allows for easy handling, but also decreases the amount of product that is spilt.		
TTHO	TTHO-0004	These are biodegradable cleaning and degreasing safe solvent wipes. It can be used for heavy duty cleaning application both indoors and outdoors. A natural stone cleaner safe on marble and granite. Excellent removal of stains like coffee and lipstick marks. Good for cleaning appliances.		
TXH8	TXH8-0012	An economical, low VOC, bio-based, environmentally sound solvent that can replace many common terpene or petrochemical based products including mineral spirits, D'limonene, and naphtha. Non flammable and is ideal for degreasing and cleaning operations including automotive, aircraft, agricultural and marine parts cleaning and degreasing, engine degreasing, adhesive removal, stainless steel cleaning and many other tasks requiring a safe, non volatile, cost effective solvent.	79	
TXH8	TXH8-0013	A powerful, cost effective, low VOC, bio-based, environmentally sound solvent that replaces many common terpene or petrochemical based products including mineral spirits, D'limonene, naphtha, and toluene. Non flammable and is ideal for all stripping and removal operations including paint stripping, mastic and adhesive removal, coating removals, heavy duty degreasing and carbon removal, silk-screen and printing ink removal and press cleanup, tar and asphalt cleaning and many other tasks requiring a safe, non volatile, environmentally	44	

		friendly solvent.		
U4WQ	U4WQ-0003	A highly concentrated powerful, economical, and versatile cleaner for organic and synthetic oils, grease, grime, carbon, and other difficult cleaning applications on hard or soft surfaces. Excellent for use in pressure washers.	80	
U4WQ	U4WQ-0008	Removes lime based grout haze and lime based grouts.	73	
ULHI	ULHI-0029	It safely handles oil spills, grease traps, drains, engines, barbeque grills, ovens, wax, vents, decks, even paint brushes and printing ink. It's made for the hard-to-remove organic stains, like blood and barbeque grease and it does it all without the caustic chemicals of other heavy duty cleaners.		
V422	V422-0001	Efficiently dissolves and removes grease, oil, tar, crude oil, paint/undercoating overspray, lubrication fluids, organic oils/fats, paraffins, adhesives. It is also used for maintenance cleaning of mechanical parts prior to service.		
V7US	V7US-0001	This product cleans, removes stains, abates odors, removes mold and mildew at the molecular level and keeps it from coming back for up to one year. This product is enzyme based, industrial strength, 100% biodegradable and environmentally safe: safe for kids, plants, pets, and the end user		
W64A	W64A-0004	Excellent for vessel cleaning --tank trucks, ISO tanks, semi-bulk bins, reactors, storage tanks. Outstanding for formulating floor-stripping products to remove polymers and polishes. Ideal for flushing paint lines, cleaning spray guns and cleaning paint booths.	100	
W64A	W64A-0007	This product is a ethyl lactate (ethyl alpha-hydroxy propionate) solvent. It is the ester of natural (L+) produced by fermentation from corn derived feedstock. This product is a clear and colorless liquid of low volatility with a natural distinctive odor. Lactate esters have found industrial applications in specialty coatings, inks, cleaners and straight use cleaning because of their high performance and versatility. They have an excellent safety and environmental record due to their organic origin, have very low toxicities and are readily biodegradable.		
W64A	W64A-0009	This product is a corn and citrus fruit derived solvent. It is a patented blend of another of our products and orange or lemon/lime. This product is ideal for flushing paint lines, cleaning spray guns and paint booths. Because of its high KB value, less solvent is required to do the job than with polyurethane, enamel, epoxy and UV curable coatings. This product is also an excellent wipe solvent (especially for pre-cleaning parts prior to painting) for cleaning without leaving a greasy residue. Ideal for vessel clear coat, tar trucks, semi-bulk bins, reactor storage tanks.	100	

W916	W916-0004	Can be used in solvent, degreasing, lubricating and many other applications. Can be a replacement for solvents such as naphtha, d-limonene, kerosene and mineral spirits. Form at 25C° Clear, amber liquid	96	
W916	W916-0005	Multi-purpose solvent. This bio-solvent is ideal for many solvent cleaning applications.	98	
WF5U	WF5U-0041	INCREASE READINESS, REDUCE INVENTORY, LIABILITY, and DISPOSAL. This product is our most popular dilution of another of our products. This product offers the user versatility in purchasing power while still providing a concentrated all purpose cleaner. This product is a bio-based, low/non-emulsifying product suitable for wash racks, manufacturing, transportation, shop cleaning, food processing, janitorial, and more. This product is exceedingly economical and can be used straight for janitorial, carpet stains, 5:1 for floors, marble, tile and extraction machines, and 40:1 for glass and acrylics. This product is the best purchase if proportioners are not a key part of your program. This product replaces laundry stain remover, carpet stain remover, heavy duty cleaner/degreaser, all purpose cleaner, tile cleaner, carpet extraction machine cleaners, pressure washers cleaner. It is safe to use on all types of carpet (even wool), vehicle interiors/exterior, walls, floors, ceilings, equipment, dishes, concrete, shop tables, tools, etc.		
WF5U	WF5U-0046	This product is a qualified product certified to MIL-PRF-87937D, Type IV (HEAVY DUTY). It is a versatile product engineered for aluminum, sensitive magnesium, aircraft exterior and component parts, aerospace manufacturing, ground support equipment, and more. This product is a moderate foaming, highly concentrated cleaner/degreaser comprised of a non-ionic surfactant system that may be used in the most difficult cleaning situations. This product will NOT react with other chemicals to create hazardous conditions. This product may be used without any special PPE or handling precautions and may be stored indefinitely. This product is safe to use and dispose of in neat form. This product may be used in soak tanks, manufacturing process cleaning, pressure washers, steam cleaners, throughput, ultrasonic, and centrifugal machines.		
WUH6	WUH6-0001	This product is a low-volatility substitute for Methyl Ethyl Ketone (MEK), 1,1,1 Trichloroethane, Toluene and blends of MEK and Toluene. This product is made especially for surface preparation, general solvent cleaning, and cleaning prior to sealing. It is literally a biodegradable solvent replacement for mineral spirits, thinners, and chlorinated solvents.		

WUH6	WUH6-0004	This product is a unique cleaning compound designed as a substitute for MEK, MEK/Toluene blends, and lacquer washes. This product functions well as a low volatility surface preparation solvent and is excellent for resin and paint application equipment clean up.		
X3UX	X3UX-0001	This product is a non-flammable, heavy-duty, biodegradable organic solvent developed to safely remove asphalt, tar, mastics, grease, glue, rubber, and other difficult materials without fumes, pungent odors, skin or lung irritation and other problems associated with the use of petroleum or citrus solvents. This product is a warm weather formula primarily for applications on horizontal surfaces or soak vats.	82	
X3UX	X3UX-0002	This product is an aqueous based, non-toxic, non-hazardous, biodegradable all-purpose industrial cleaner and degreaser concentrate. This product effectively dissolves and lifts tough oil, grease and dirt from all water washable surfaces. It is uniquely designed for easy rinsing or wiping dry with towels, leaving surfaces sparkling clean and residue free.	2	
X3UX	X3UX-0007	This product is a non-flammable, heavy-duty, biodegradable organic solvent developed to safely remove asphalt, tar, mastics, grease, glue, rubber, and other difficult materials without fumes, pungent odors, skin or lung irritation and other problems associated with the use of petroleum or citrus solvents. This product is a high viscosity warm weather formula primarily for applications on vertical surfaces and equipment cleansing.		
X3UX	X3UX-0008	This product is a non-flammable, heavy-duty, biodegradable organic solvent developed to safely remove asphalt, tar, mastics, grease, glue, rubber, and other difficult materials without fumes, pungent odors, skin or lung irritation and other problems associated with the use of petroleum or citrus solvents. This product is a warm weather formula primarily for applications on horizontal surfaces or soak vats.		
X3UX	X3UX-0009	This product is a non-flammable, heavy-duty, biodegradable organic solvent developed to safely remove asphalt, tar, mastics, grease, glue, rubber, and other difficult materials without fumes, pungent odors, skin or lung irritation and other problems associated with the use of petroleum or citrus solvents. This product is a high viscosity warm weather formula primarily for applications on vertical surfaces and equipment cleansing.		
Y8EG	Y8EG-0010	Replaces mineral spirits. A clean air solvent. No dangerous vapors. Readily biodegradable and virtually nontoxic. Removes tape residue on frame edge. Made naturally from soybeans.		
Y8EG	Y8EG-0012	Replaces mineral spirits. Ideal for on-press color changes. Safe, virtually nontoxic, readily biodegradable and recyclable. Fresh aroma.		

	Y8EG	Y8EG-0026	This product is a scorch remover. Sometimes flash cure units and dryers just can't tell time worth a hoot - leaving you hooting for sure! Our biodegradable product will change those hoots to whistles as it removes the nasty old scorch marks and returns you and your textile to the professional level that all our customers possess.		
	YJ3R	YJ3R-0021	Used for the removal of high temperature greases, oils and dirt.		
	ZGB8	ZGB8-0001	A highly concentrated cleaning compound for use in a wide variety of applications. This product should be used for the most difficult cleaning needs for the removal of all hydrocarbon soils including petroleum derivatives, fats, oils, greases, lipids, proteins, and sugars		
	ZGB8	ZGB8-0005	This product is a low to moderate sudsing, highly concentrated cleaner/degreaser that provides a ternary, non-ionic surfactant system that can be used in the most challenging cleaning situations. This product is not a soap, detergent or solvent. It causes organic soils to repel from the soiled surface and to become suspended in the product solution, so that it can be rinsed away with water. It can be used safely on any surface that is compatible with water. It is particularly effective for sensitive aluminum surface cleaning.		
	ZGB8	ZGB8-0007	This product is a plant-based solvent with excellent solvency power that is non-toxic and readily biodegradable. It is a powerful all-purpose industrial and transportation solvent manufactured from agricultural sources. This product is non-aromatic, contains no ozone depleting chemicals, and is a high triglyceride antioxidant solvent that will not harm most plastics, vinyl, nylon, butane, rubber, metals, or natural fibers.		
	ZGB8	ZGB8-0009	This product is a 100% water miscible, evaporative, flammable, non-toxic multipurpose solvent, formulated from corn alcohol and plant derived acids that achieve a KB (Kauri Butinol) value of 1000+. It is safe to use and to store, and is acceptable for landfill disposal. This product contains no hazardous air pollutants, and is 100% readily biodegradable.		
Multipurpose Cleaners	A29D	A29D-0001	All-purpose, ready-to-use cleaner for both indoors and outdoors. Readily biodegradable, highly filterable and reusable.		
	AY9O	AY9O-0001	This product effectively cleans even greasy soils from counter tops, walls, and other surfaces so they sparkle! Our all-purpose cleaner is 100% solvent and VOC free - we guarantee you will be able to smell the difference!		

AY9O	AY9O-0002	This product unlocks the natural power of citrus to dissolve grease, penetrate stains and wash away tough dirt. Unlike many conventional heavy-duty cleaners, our product does not create unpleasant fumes, will not leave harmful residues and is safer for the environment. Ideal for grease and oil, carpet and fabric stains, markers, crayons, lipstick, tar, pet stains, and adhesives. Not for use on brass.		
C9PX	C9PX-0012	A naturally derived cleaner made entirely from replenishable natural resources. Instantly removes grease, tar, oil, lipstick, make-up, crayon, Vaseline, etc. from any surface. Use on clothes, furniture, carpet, concrete, etc. Removes light graffiti, chewing gum, candle wax, adhesives, labels and bumper stickers.		
C9PX	C9PX-0014	All Purpose Cleaner, Automatic Scrubber and Concrete Floor Cleaner, Spray & Wipe Cleaner/Degreaser, Carpet Extraction, Bonnet and Traffic Lane Cleaner, Garage Floor Degreaser. Soak Tank and Steam Cleaning Compound, Kitchen Degreaser and Cleaner.	25	
C9PX	C9PX-0019	A naturally derived cleaner made primarily from replenishable natural resources. Cleans any surface not harmed by water. Ideal for use on tile floors, marble, terrazzo and walls. Rinsing is not needed. Will not film or streak as it cleans and brightens surfaces. Deodorizes as it cleans. Outperforms traditional cleaners, other naturally derived cleaners and homemade products.	37	
D5XU	D5XU-0007	Highly dilutable multi-purpose cleaner designed to suite today's cleaning needs. Uniquely formulated so that it will also act as a degreaser as well as a rinse less all purpose cleaner. Various uses with dilution up to 1 part this product to 100 parts water. USDA A1.		
E8HD	E8HD-0001	A biodegradable all purpose cleaner that cleans and deodorizes with a "pine fresh" scent. Can be used on Tile, Stove Tops, Floors, Auto, Marine, and Vinyl		
G944	G944-0015	One of the most concentrated, versatile cleaners on the market. Effective against more kinds of grease and soil. Safe for more types of surfaces and materials than commercial cleaning products. Works powerfully in all kinds of water and at all temperatures, and yet is environmentally safe and biodegradable. The pleasant, natural orange scent makes all cleaning projects in and outside the home a pleasant, effortless experience. Used for kitchens, bathrooms, floors, walls, laundry, hand soap, autos, RVs, boats, and any situation to clean dirt and grease. Also safe and effective produce wash.		

G944	G944-0024	Our non-toxic cleaner uses natural citrus peel extracts, grapefruit seed extract (@ 500 ppm), and cold pressed Valencia orange oil for a broad range of cleaning tasks that will not harm materials such as rubber and vinyl and without harsh or toxic fumes. Instantly deodorizes washable surfaces without harsh or annoying fumes. Excellent for cleaning water-safe surfaces, including stainless steel, chrome, carpet stains, upholstery, laundry stains, toilets, showers, plant leaves, countertops, autos and anything else water safe.		
HN7J	HN7J-0001	One cleaner for all your daily cleaning needs. Developed for the chemically sensitive. Friendly to children, pets and the environment. Contains no pesticides, preservatives, petrochemicals, phosphates, EDTA, NTA, dyes or perfumes. No toxicity, No residue. use on floors, toilet bowls and urinals, windows, walls, glass, tubs and shower stalls. Application specific labels available.		
I677	I677-0015	Liquid soap for all types of cleaning, made from vegetable oil soap		
IB5T	IB5T-0001	Basic creped textured disposable wipe that can be used for a variety of tough jobs, it's durable, strong and ready for every day residential, work, or office usage.		
J5Z2	J5Z2-0001	This product is an environmentally friendly general purpose cleaner/degreaser. pH neutral product with no hazardous ingredients. Great product for floors, walls, hard surfaces, grease and oil removal, aircraft and car wash. This product has successfully passed APR 1755B category 10 for use in the aerospace industry. A highly concentrated, true "non-hazardous cleaner.		
J5Z2	J5Z2-0002	This product is a friendly general purpose cleaner/degrease pH neutral product with no hazardous ingredients. Great product for floors, walls, hard surfaces, grease and oil removal, aircraft and car wash. This product has successfully passed APR 1755B, category 10 for use in the aerospace industry. A highly concentrated, true "non-hazardous" cleaner.		
K4U8	K4U8-0012	Environmentally Friendly • User Safe • Plant-Based Ingredients. For Spray & Wipe Household And Maintenance Applications. Provides very low dynamic surface tension resulting in faster, more efficient cleaning. Quickly and easily breaks down even the toughest grease and grime from hard surfaces. Ready-To-Use cleaning power is far better than most industrial strength formulas. Solution will not cloud or streak surfaces. Non-ionic (no APEs), cationic character provides for complete and easy rinse off. Virtually free of VOCs. Non-toxic, non-hazardous. No carcinogens. Pleasant odor, even at elevated temperatures. Product is non-flammable, safe to the skin, and contains no harmful chemicals or solvents.		

K6DW	K6DW-0010	This product is an ideal general purpose cleaner-degreaser to be used in food processing plants. It has the unique ability to “enhance digestion of animal/vegetable greases, fats, oils, lipids & starches associated with these types of facilities.		
M179	M179-0003	Commercial, industrial, institutional maintenance cleaner for ALL hard surfaces and uses.		
M2RO	M2RO-0021	A proprietary blend of organic cleaning agents, organic surfactants, biocatalysts and enzymes. A unique and highly effective product that is specifically formulated to clean and biodegrade organic stains such as blood, vomit, fecal matter, urine and food. This non-caustic biodegradable formulation continues working to safely biodegrade all residual traces of the organic based stain. It is especially effective on hard to clean surfaces such as grouting, corners, cracks and crevices. May be used on carpets, clothing, furniture, floors, tile and grout.	45	
MODM	MODM-0006	Dilutable concentrate for use on a variety of surfaces.	72	
N5U4	N5U4-0012	This product effectively cleans and degreases inside and outside of the home. Unlike many conventional cleaning products, our product does not create unpleasant fumes, will not leave harmful residues, and is safer for the environment.		
NMO3	NMO3-0008	Phosphate-Free - Our products contain no phosphates, which disrupt the natural ecological balance of streams and lakes. Biodegradable Environmentally Sensitive - FORMOR uses biodegradable, naturally derived, organic cleaning agents and surfactants. Safe on all surfaces that are not harmed by water. Economical, Highly Concentrated Formula - This product saves you money because it is highly concentrated, and requires less packaging, reducing solid waste in the environment.		
PH7O	PH7O-0001	Blend of pure, natural pine oil and surfactants. Vigorous cleaner for all soil levels. Amber color. Fresh pine fragrance.4/1 gallon per case.		
RDO8	RDO8-0005	It is the most versatile and powerful surfactant system in the industry today. The core ingredient in many of our products. It is a colloidal solution that creates a unique hydrocarbon release agent that can tolerate tremendous soil load.	96	
RDO8	RDO8-0032	All-purpose, ready-to-use cleaner for both indoors and outdoors. Readily biodegradable, highly filterable and reusable.		
RDO8	RDO8-0042	Based on our most popular aqueous-based surfactant technology. Ideal for all types of cleaning applications and surfaces.		

RDO8	RDO8-0066	This product contains all properties of one of our similar products with a small amount of defoamer added. This product is our most versatile and powerful cleaner used in a variety of industrial and commercial applications. Comprised of non-ionic surfactants and seed ester alcohols, this product is a colloidal solution that creates a unique hydrocarbon release agent that can tolerate tremendous soil load. The powerful micelle cleaning action of this product will cause long chain hydrocarbon soils including fats, greases, oils, and sugars to repel from the surface so that it can be rinsed away with water, without damaging or reacting with the cleaning surface. This product is not a typical caustic detergent or petroleum solvent, therefore it will not damage or react with the cleaning surface.		
RGWJ	RGWJ-0052	An excellent biobased, ultimately biodegradable degreaser/cleaner that is a safe improvement over petroleum solvents, this product is a highly concentrated industrial degreaser that removes and cleans surfaces of stubborn stains, greases, and oily grimy dirt fast. Nothing cleans better than this product. A super all-purpose product for degreasing and cleaning warehouses and shop walls, floors, parts, tools, engines, and equipment. Unbelievable cleaning ability on RV camper and motor-home black streaks. Excellent for cleaning road grime and tar from tires and vehicles. This non-foaming product is great for cleaning and lifting cooked-on grease and fats off of stoves and grills. Also excellent for cleaning boats, decks, and around marine areas. This fresh citrus-scented nonflammable biobased product is specially formulated with soy and orange solvents to provide an environmentally safe improvement in removing Grease, Crayon, Lipstick, Tape, Glue, Oil, Tar, Wax, Gum, Marker, Asphalt, Adhesives, Stickers, Ink, Scum, Tree Sap, Scuff Marks, Make-up, Shoe Polish, & Tire Marks from wood, vinyl, steel, and aluminum siding, tires, wheels, grills, decks, walls, floors, tile and grout, bathroom sinks, tubs, toilets, counter tops, cabinets, hood and exhaust vents, showers, fireplaces, etc.	69	
SDH5	SDH5-0001	This all-purpose cleaner/degreaser can be used on any washable surface, from floors and walls to laundry and vehicles. It removes the toughest stains including dirt, grease, oil, pet stains, coffee & juice stains, lipstick, blood, adhesives & much more.		

TA8E	TA8E-0006	A pH neutral, non-hazardous, non-toxic, biodegradable, all natural, water dilutable cleaner and degreaser. Use for any light to heavy duty cleaning task. Replaces hazardous cleaners, petroleum based degreasers and solvents, corrosive products. Excellent for literally hundreds of uses. Extremely concentrated. Use as little as 1 ounce to as much as 32 ounces per gallon of water depending upon the severity of the grime. An excellent spray and wipe cleaner when diluted with ten parts of water. Works equally well in cold or hot water. Breaks down and deodorizes all types of oils, soils and fats. Non-filming. Needs no rinsing.		
TA8E	TA8E-0012	A non-hazardous, biodegradable, non-toxic super concentrated cleaner. For floors, walls and windows use just 1/8 to 1/4 cup per gallon of water. Saves energy because it works very well in cold water. Will not film floors or re-deposit soil. Never needs rinsing. Made of 100% naturally derived ingredients from replenishable natural resources.	31	
TA8E	TA8E-0018	A moderately alkaline, naturally derived cleaner made primarily from replenishable natural resources. Replaces corrosive, caustic and Butyl based cleaners. Outperforms traditional cleaners, other naturally derived cleaners and homemade products. Lower in alkalinity than most heavy-duty cleaners.		
TA8E	TA8E-0030	An all-purpose natural cleaner made primarily of replenishable natural resources. Can be used to clean everything from glass to toilet bowls just by changing the dilution of the cleaner with water. Reduce the quantity and variety of cleaning products by consolidating cleaner use. Works well in both warm and cold water. Economical- use 1/4 ounce per quart of water for windows- use one ounce per gallon of water for most floor mopping.		
TA8E	TA8E-0032	An alkaline, water dilutable, heavy duty degreaser and cleaner containing a perfect balance of natural solvents, wetting agents, and alkaline detergents. Removes automotive, industrial, and kitchen soils/oils instantly. Inhibits corrosion to metal. Replaces traditional caustic and butyl based cleaners.	78	
TPHG	TPHG-0009	This powerful concentrated all purpose cleaner is made from orange oil. This product is a free rinsing phosphate free cleaner that penetrates and emulsifies hard to remove grease and grime. This product can be used on kitchen surfaces, floors, furniture/wood work, and it can even clean your oven.		
TPHG	TPHG-0035	A concentrated natural orange oil all purpose cleaner. It comes in a 16 ounce size bottle, but makes over 10 gallons of ready to use all purpose cleaner. 100% biodegradable. Comes in a number 1 PET bottle.	88	

TTHO	TTHO-0003	It's an anti-bacterial biodegradable concentrated problem solver. It is excellent on crayon, lipstick, magic marker, oil, and grease. A direct competitor of the citrus solvent products, This product can be used in industrial machinery without harming the sensitive rubber seals and squeegees without sacrificing cleaning power. This is a revolutionary new product.		
ULHI	ULHI-0017	General cleanser	84	
ULHI	ULHI-0032	According to manufacturer same formula and ingredients as general purpose cleaner		
ULHI	ULHI-0037		79	
V2QF	V2QF-0001	A non-hazardous, biodegradable, non-toxic super concentrated cleaner. For cleaning glass, mopping waxed floors, carpet spot remover, tire marks, tar, heavy degreasing and as tile & grout cleaner. Made of 100% naturally derived ingredients from replenishable natural resources.		
V2QF	V2QF-0011	An alkaline, water dilutable, heavy duty degreaser & cleaner containing a perfect balance of natural solvents, wetting agents and alkaline detergents. Removes automotive, industrial, and kitchen soils/oils instantly. Works in both hot and cold water. Inhibits corrosion to metal. Extremely multi purpose. Replaces traditional caustic and butyl based cleaners.		
V2QF	V2QF-0012	A moderately alkaline, naturally derived cleaner made primarily from replenishable natural resources. Replaces corrosive, caustic and butyl based cleaners. Outperforms traditional cleaners, other naturally derived cleaners and homemade products.		
V422	V422-0008	This product can be used as a water-based cleaner for almost all industrial applications, such as engineering cleaning; car and truck cleaning (power washing) and general household cleaning. Highly suitable as an antifoaming and wetting agent for cleaning in the food industry, such as breweries, dairies, where high alkaline cleaners are traditionally used.		
V865	V865-0013	This product is specially formulated to clean and degrease all surfaces, including floors, kitchen areas and bathrooms. This powerful natural citrus-based cleaner is a powerful force against grease and grime while safe for the lungs and skin.		

VQXI	VQXI-0006	These white wipers are strong when wet or dry. Each soft, flexible, and absorbent wiper is sturdy enough to wipe up most messes. Applications for the wipers include: utility companies, plant maintenance, fleet maintenance, heavy manufacturing, machine shops, mining, grocery stores and beauty shops. The wipers are made from wood fiber with a binder added for strength they have no disagreeable odor, either wet or dry, in accordance with reasonable industry practice. Available in all styles and sizes, pop-up boxes, rolls, or folded.		
VWD1	VWD1-0002	This compound can be used for the following applications: Fertilizer, Laundry, Multi-Purpose, Hand Wash, Pet Care	49	
W732	W732-0002	Dilutable, multipurpose cleaner/degreaser. A concentrated cleaner and degreaser that you can use anytime, anywhere. Combines a variety of natural and biodegradable detergents and emulsifiers made from corn, oranges and soybeans — all in perfect balance to produce a “green” cleaner that dissolves the heaviest grease deposits. Developed as an alternative to cleaners		
W732	W732-0004	A ready-to-use cleaner and degreaser that you can use anytime, anywhere. Combines a variety of natural and biodegradable detergents and emulsifiers made from corn, oranges and soybeans — all in perfect balance to produce a “green” cleaner that dissolves the heaviest grease deposits. Developed as an alternative to cleaners made with harsh butyls and alkalies, it is as versatile as it is safe. Use it to remove gum, wax, oil, tar, dirt, adhesives as well as grease and grime. Can be used on fabrics and hard surfaces like: wood ceramic, metal, glass, rubber, fiberglass, plastic, carpet & upholstery.		
W916	W916-0002	Used as a solvent replacement and in water-based cleaning and degreasing formulations.	15	
W916	W916-0004	Can be used in solvent, degreasing, lubricating and many other applications. Form at 25C° Clear, amber liquid	96	

WF5U	WF5U-0011	This product is the premier all purpose, bio based (E.O. 13101) cleaner for vehicle wash/maintenance, manufacturing, shop cleaning, food processing (USDA A1 & L1), janitorial, and more. This product is exceedingly economical with dilutions ranging from 4:1 (RTU) for heavy duty degreasing, 10-20:1 for All Purpose Janitorial to 350:1 for glass/acrylic. This product easily replaces up to 8 typical janitorial/maintenance cleaners. It is a highly concentrated cleaner/degreaser comprised of a non-ionic surfactant system and natural lemon scent that may be used for the removal of hydrocarbon and organic soils (petroleum derivatives, fats, oils, greases, lipids, proteins, and sugars). This product is not a soap, detergent or petroleum based solvent and will not react with other chemicals to create hazardous conditions. It is compatible with ozonated water and does not inhibit oil/water separators. This product will not harm fabrics and may be used without protective clothing or any special handling precautions and may be stored indefinitely.	65	
WF5U	WF5U-0032	INCREASE READINESS, REDUCE INVENTORY, LIABILITY, and DISPOSAL. This product is our most popular dilution of one of our other products. This product offers the user versatility in purchasing power while still providing a concentrated all purpose cleaner. It is a bio-based, low/non-emulsifying product suitable for wash racks, manufacturing, transportation, shop cleaning, food processing, janitorial, and more. This product is exceedingly economical and can be used straight for janitorial, carpet stains, 5:1 for floors, marble, tile and extraction machines, and 40:1 for glass and acrylics. It is the best purchase if proportioners are not a key part of your program. This product replaces laundry stain remover, carpet stain remover, heavy duty cleaner/degreaser, all purpose cleaner, tile cleaner, carpet extraction machine cleaners, pressure washers cleaner. It is safe to use on all types of carpet (even wool), vehicle interiors/exterior, walls, floors, ceilings, equipment, dishes, concrete, shop tables, tools, etc.	59	
WH38	WH38-0003	Ready-To-Use industrial cleaner/degreaser product for multi-surfaces.	11	
X3UX	X3UX-0005	This product is an aqueous based, non-toxic, non-hazardous, biodegradable all-purpose cleaner and degreaser concentrate. It effectively dissolves and lifts oil, grease and dirt from all water washable materials, leaving surfaces sparkling clean and residue free - particularly important when cleaning notoriously slippery floors. Other surfaces including walls, tools, counters, or electrical equipment can be wiped clean using rags or towels.		
XB9O	XB9O-0003	As versatile as it is safe. Use it to remove gum, wax, oil, tar, dirt, adhesives as well as grease and grime. Can be used on fabrics and hard surfaces like: wood, ceramic, metal, glass, rubber, fiberglass, plastic, carpet & upholstery.		

	XB9O	XB9O-0006	This product cleans everything from greasy stovetops to patio furniture, carpet stains and spills. It can be used full strength from the bottle like 409 or Fantastic, or it can be diluted in water and used to mop and clean floors and other hard surfaces. Unlike other cleaning products, this product does not use a harsh, petroleum chemical based solvent (like butyl). It uses lemon oil, a natural cleaner. This product also makes an excellent pre-treater for laundry.		
	XB9O	XB9O-0007	This product is our hospital strength, EPA Registered, germicidal deodorizing cleaner. It's the right product to use at home for healthcare/sick-room care. It is also perfect for bathrooms, kitchens, garbage cans, storage areas and basements, or wherever germs may hide. It is effective against a broad spectrum of germs to include bacteria and viruses such as tuberculosis, HIV (AIDS Virus) and pneumonia. This product is also an effective fungicide and mildewstat. It has an attractive fresh citrus scent, so it is pleasant to use.		
	Y8EG	Y8EG-0022	It's a "top gun" window cleaner and also good for any other hard surface needing "white glove" treatment.		
	YJ3R	YJ3R-0008	This product is a fume-free deodorizing cleanser that can handle a wide variety of general cleaning projects. Developed by and for people with allergies, asthma and chemical sensitivities. Free of commonly occurring respiratory and skin irritants. This product effectively removes soil and residue from virtually any water-safe surface such as: counters, porcelain, tiles, walls, cars and even white walls. This product is made with naturally occurring renewable resources, contains no petroleum based ingredients, or added fragrances and dyes that are common triggers for respiratory and skin irritations.	28	
	ZGB8	ZGB8-0002	This product is a low to moderate sudsing, concentrated aqueous cleaner especially formulated for removing moderate to heavy hydrocarbon soils. This product is a powerful, non-ionic primary linear alcohol surfactant that releases long-chain hydrocarbon soils, including oils, fats, greases, lipids, proteins, and sugars, without reacting with the surface being cleaned. Recommend for use with automotive work counters and tools, food and beverage processing equipment, oily or food soiled floors, manufacturing work areas, vehicle maintenance, shipping containers, and utility equipment. Acts as an oil dispersant in rivers and lakes.		
Parts Wash Solutions	BP37	BP37-0067	Non-chlorinated, No residue, Non-conductive, Aggressive degreasing properties, Fast evaporation. Application: Is non-chlorinated, non-corrosive, and biodegradable for safe handling.		
	CNFX	CNFX-0001	Formulated from corn and soybean byproducts. For use in all degreasing applications.		

EPQD	EPQD-0001	Gentle enough to use as a hand cleaner, yet can clean even your grimeiest parts. In fact, in field tests under actual working conditions, this product has consistently been rated equal to or better than traditional, potentially hazardous cleaners.		
K6DW	K6DW-0007	This product is a parts washer that REDUCES VOCS - NON FLAMMABLE, EPA CLEAN AIR ACT #1, OSHA HYGIENE BENEFITS, HIGHLY EFFECTIVE GREASE CUTTER, CALIFORNIA AIR QUALITY CERTIFIED, CONTAINS RUST INHIBITOR, SUPERIOR IN HIGH PRESSURE SYSTEM		
M179	M179-0004	Formulated for use in elevated temperature parts washing operations. Low foam formula provides reserve alkaline strength for extended bath life and superior hard water stability to conventional formulas.		
M3D3	M3D3-0047	This parts washer uses a dual filter system to continuously clean and recycle the cleaning solution. An 8 micron filter is positioned in the fluid delivery line between the pump and the adjustable flex spout. The system traps all solid particles greater than 8 microns - eliminating solid contaminates. The oil skimmer is mounted on the side of the all steel construction base. Oil and other contaminates float to the top of the reservoir. The operator has a continuously clean solution and NO hazardous waste to dispose of. When the level of the solution goes down due to evaporation, simply add more water. This product uses a biodegradable water based cleaning solution. Water based detergents clean parts quickly and thoroughly when heated. This product uses a 1500 Watt immersion heating element that is thermostat controlled for optimum parts cleaning."		
M3D3	M3D3-0048	This product is a powder parts washing cleaner. Works well in spray applications. Designed to quickly dissolve and emulsify heavy grease, carbon deposits, soap scum, oxidized waxes, oils, inks and built-up dirt. Economical cleaner for high pressure spray washers and parts washers.		
M3D3	M3D3-0050	This product is a parts washing cleaner. Our best seller for spray applications. Designed to quickly dissolve and emulsify heavy grease, carbon deposits, soap scum, oxidized waxes, oils, inks and built-up dirt. Economical cleaner for soaking operations, immersion tanks, spray washers, re-circulation systems and parts washers. Safely replaces vapor degreasers.		
M7FY	M7FY-0003	Liquid concentrate cleaner and degreaser. Readily biodegradable, pH 7-8 in concentrated form. Rinses film-free. Nonstreaking, virtually nontoxic, nonhazardous, noncorrosive, nonflammable, noncaustic and nonfuming. Contains no phosphates, nitrates, sulfates, sulfonates, caustics, terpenes, chlorinated solvents or petrochemical byproducts.		

O539	O539-0002	Soybean- and corn-based industrial cleaner. Water-rinsable. Ideal for parts cleaning, degreasing, graffiti removal and concrete floor cleaning. It is also an effective penetrant and rust preventive. Readily biodegradable.		
RGWJ	RGWJ-0021	A specially formulated, ultimately biodegradable Soy Cleaner/Degreaser that can be used to replace petroleum solvents for cleaning parts and equipment. This safe, non flammable product has been formulated with anti-oxidants for improved stability.	94	
RYB8	RYB8-0002		89	
TA8E	TA8E-0002	All-purpose solvent for use as a solvent potter for carpets, industrial equipment wipe, vapor degreaser, pars washer, rubber burn remover or wherever very hazardous solvents need to be replaced.		
W64A	W64A-0006	Manual and Automatic Cleaning Systems, Spray Booths, Automatic Parts Cleaners, Immersion Tanks, Ultrasonic Cleaners, Agitated Tank Cleaners, Moderately Heated Cleaning Tanks	96	
WF5U	WF5U-0038	This floor stripper is a highly dilutable, odorless, fast acting floor finish remover which may be used in conjunction with any floor finish program. It is a versatile stripper/degreaser for removing floor finish, wax, rubber paints, inks and other difficult to remove materials from floor surfaces such as concrete, plastics, tile, painted and metal surfaces. This product's powerful action is supplied by a proprietary blend of North Atlantic Ocean Kelp extracts and naturally derived non-ionic surfactants and fatty acid esters.	12	
Y8EG	Y8EG-0008	Industrial parts washing solution. Cleaning those tough oils, greases, carbons and inks doesn't get any safer or easier.	83	
Y8EG	Y8EG-0020	Removing floor tile and carpet mastic can be a messy job, but you can't beat the sense of accomplishment when the job is done! To guarantee that the floor is absolutely pristine clean or to prep for a new surface, there is nothing better than a final rinse with this product.Use this product to clean hard surfaces, parts and tools, or as a parts washer solution. Removes dirt and grime easily leaving you with a smile of satisfaction. Clean Dirt and Oil from concrete and asphalt. Dirt and Grime from walls and other surfaces.		
Y8EG	Y8EG-0028	This parts washer safely cleans light and medium rust from parts and tools, while having the same powerful properties as our original parts washer solvent.		
YJ3R	YJ3R-0009	Industrial parts cleaner	13	
YJ3R	YJ3R-0018	Highly effective for the removal of high temperature greases, oils and dirt.		

ZGB8	ZGB8-0006	This product is a powerful non-ionic primary linear alcohol surfactant that is highly effective in releasing long-chain hydrocarbon soils including fats, greases, oils, lipids, proteins and sugars without reacting with the soiled surface. This product is not a soap, detergent or petroleum solvent. It will not react with other chemicals to create hazardous conditions, chemicals or gases.		
ZR7U	ZR7U-0001	Powerful bio-based parts cleaning fluid derived from soybeans and other natural sources. This product replaces mineral spirits in manual and immersion-type parts washers. It's safer, cleans better and lasts longer. Pleasant to use – low toxicity, no unpleasant fumes or skin irritation. Non-polluting, biodegradable.	68	

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.

Industry Performance Standards				
Round 5				6/4/2007
Item	Mfg Listed Standard	Organization	Standard Title	Type
Chain and Cable Lubricants	EPA 560/6-82-003	Environmental Protection Agency	EPA 560/6-82-003, number CG-2000, it the Shake Flask Test used by the lubricant industry to evaluate biodegradability.	Test Method
	EPA 600/4-90/027 for aquatic toxicity	Environmental Protection Agency	Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms	Test Method
Corrosion Preventatives	ASTM D 1748	American Society for Testing and Materials	D1748 Standard Test Method for Rust Protection by Metal Preservatives in the Humidity Cabinet	Test Method
	ASTM D-1735	American Society for Testing and Materials	D1735 Standard Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus	Test Method
	ASTM D-445	American Society for Testing and Materials	D445 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)	Test Method
	ASTM D-92	American Society for Testing and Materials	D92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester	Test Method
	ASTM D-97	American Society for Testing and Materials	D97 Standard Test Method for Pour Point of Petroleum Products	Test Method
	NACE TM0374	National Association of Corrosion Engineers	Laboratory Screening Tests to Determine the Ability of Scale Inhibitors to Prevent the Precipitation of Calcium Sulfate and Calcium Carbonate from Solution (for Oil and Gas Production Systems)	Performance Standard
Food Cleaners	536A	Federal Test Method Standard	SOAP AND SOAP PRODUCTS (INCLUDING SYNTHETIC DETERGENTS) SAMPLING AND TESTING	Test Method
	Boeing D6-7127	Boeing	D6-7127 "Cleaning Interiors of Commercial Transport Aircraft"	Test Method, Performance Standard

	Clean Air	South Coast Air Quality Management District	The South Coast Air Quality Management District hereby certifies the above product as a "Clean Air Solvent".	Test Method
	Navsea 6840	US Navy	U.S. Navy surface ship (non-submarine) authorized chemical cleaning products and dispensing systems	Performance Standard
Forming Lubricants	Boeing Process Specification BAC 5001-4	Boeing	Flareless Tube End Fabrication	Test Method
	EPA 560/6-82-003	Environmental Protection Agency	Describes methods for performing testing of chemical substances under the Toxic Substances Control Act	Test Method
Gear Lubricants	ANSI/AGMA 9005-E02	American Gear Manufacturers Association	Industrial Gear Lubrication	Performance Standard
	AGMA 2-8A	American Gear Manufacturers Association	R&O and EP Gear Lubes Grades	Performance Standard
	API GI-1	American Petroleum Institute	Designates the type of service characteristics of automotive spiral-bevel and worm gear axles as well as some manually operated transmissions operating under such mild conditions of low unit pressures and sliding velocities that straight mineral oil can be used satisfactorily. Oxidation and rust inhibitors, defoamers and pour depressants may be utilized to improve the characteristics of lubricants for this service. Frictional modifiers and extreme pressure agents shall not be utilized.	Performance Standard
	API GL-2	American Petroleum Institute	Designates the type of service characteristics of automotive type worm gear axles operating under such conditions of load, temperature and sliding velocities that lubricants satisfactory for API GL-1 service will not suffice. (obsolete)	Performance Standard
	API GL-3	American Petroleum Institute	Lubricant with light EP effect for transmissions and non-hypoid gear drives. Used by several vehicle manufacturers for first fill of transmissions.	Performance Standard

API GL-4	American Petroleum Institute	API GL-4 is generally equivalent to military specification MIL-L-2105 for manual transmissions and spiral bevel gears engaged in moderate service. API GL-4 rates a gear lubricant's performance. Designates the type of service characteristics of gears, particularly hypoid in passenger cars and other automotive equipment operated under high-speed: shock-load, low-torque, and low-speed: high-torque conditions.	Performance Standard
ASTM D-1404	American Society for Testing and Materials	D1404/D1404M Standard Test Method for Estimation of Deleterious Particles in Lubricating Grease	Test Method
ASTM D-2270	American Society for Testing and Materials	D2270 Standard Practice for Calculating Viscosity Index From Kinematic Viscosity at 40 and 100°C	Test Method
ASTM D-2619	American Society for Testing and Materials	D2619 Standard Test Method for Hydrolytic Stability of Hydraulic Fluids (Beverage Bottle Method)	Test Method
ASTM D-2711	American Society for Testing and Materials	D2711 Standard Test Method for Demulsibility Characteristics of Lubricating Oils	Test Method
ASTM D-445	American Society for Testing and Materials	D445 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)	Test Method
ASTM D-5864	American Society for Testing and Materials	D5864 Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components	Test Method
ASTM D-665	American Society for Testing and Materials	D665 Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water	Test Method
ASTM D-892	American Society for Testing and Materials	D892 Standard Test Method for Foaming Characteristics of Lubricating Oils	Test Method
ASTM D-92	American Society for Testing and Materials	D92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester	Test Method
ASTM D-97	American Society for Testing and Materials	D97 Standard Test Method for Pour Point of Petroleum Products	Test Method
ASTM D-974	American Society for Testing and Materials	D974 Standard Test Method for Acid and Base Number by Color-Indicator Titration	Test Method

	DIN 51517	Deutsches Institut fur Normung	Lubricants - Lubricating oils - Part 1: Lubricating oils C; Requirements	Test Method
	DB s1.53.101	David Brown Power Transmission Products	Meets or exceeds requirements of David Brown performance requirement	Performance Standard
	FGZ (DIN51354)	Deutsches Institut fur Normung	Gearwheel twisting/tension testing machine for lubricants	Test Method
	ASTM D-2266	American Society for Testing and Materials	D2266-01 Standard Test Method for WEAR Preventive Characteristics of Lubricating Grease (Four-Ball Method)	Test Method
	ISO 150	International Organization for Standardization	ISO 150 specifies the requirements and the corresponding methods of test for raw, refined and boiled linseed oils for paints and varnishes.	Test Method
	ISO 46	International Organization for Standardization	ISO 3448 Industrial liquid lubricants -- ISO viscosity classification	Test Method
	ISO 90	International Organization for Standardization	ISO 3448 Industrial liquid lubricants -- ISO viscosity classification	Test Method
	Readily Biodegradable EPA 560/6-82-003	Environmental Protection Agency	Describes methods for performing testing of chemical substances under the Toxic Substances Control Act	Test Method
	SAE 30	Society of Automotive Engineers	SAE J300 Engine Oil Viscosity Classification	Test Method
	SAE GEARGRADE 80W90	Society of Automotive Engineers	SAE J300 Engine Oil Viscosity Classification	Test Method
General Purpose Household Cleaners	536A	Federal Test Method Standard	SOAP AND SOAP PRODUCTS (INCLUDING SYNTHETIC DETERGENTS) SAMPLING AND TESTING	Test Method
	GS-8	Green Seal	Green Seal Environmental Standard for Household Cleaners	Test Method
	ASTM D1308	American Society for Testing and Materials International	D1308 Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes	Test Method

	Boeing D6-7127	Boeing	D6-7127 "Cleaning Interiors of Commercial Transport Aircraft"	Test Method, Performance Standard
	Clean Air	South Coast Air Quality Management District	The South Coast Air Quality Management District hereby certifies the above product as a "Clean Air Solvent".	Test Method
	Navsea 6840	US Navy	U.S. Navy surface ship (non-submarine) authorized chemical cleaning products and dispensing systems	Performance Standard
Industrial Cleaners	ASTM D13	American Society for Testing and Materials International	D13 Standard Specification for Spirits of Turpentine	Performance Standard
	ASTM D1364	American Society for Testing and Materials	D1364 Standard Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)	Test Method
	ASTM D1836	American Society for Testing and Materials	D1836 Standard Specification for Commercial Hexanes	Performance Standard
	ASTM D235	American Society for Testing and Materials International	D235 Standard Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)	Performance Standard
	ASTM D3278	American Society for Testing and Materials	D3278 Standard Specification for 2-Ethoxyethyl Acetate (99 % Grade)	Performance Standard
	ASTM D-445	American Society for Testing and Materials	D445 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)	Test Method
	ASTM D-446	American Society for Testing and Materials	D446 Standard Specifications and Operating Instructions for Glass Capillary Kinematic Viscometers	Performance Standard
	ASTM D-92	American Society for Testing and Materials	D92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester	Test Method
	Boeing BAC 5750 Section 5.1s Glidsafe Prepsolv (Glidco:former manufacturer)	Boeing	Solvent Cleaning	Performance Standard

	EPA Method 24	Environmental Protection Agency	Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings	Test Method
	EPA SNAP	Environmental Protection Agency	Significant New Alternatives Policy: Section 612 of the Clean Air Act (CAA) requires EPA to establish a program to identify alternatives to Class I (CFCs, halons, carbon tetrachloride, methyl chloroform, methyl bromide, and HBFCs) and Class II (HCFCs) ozone-depleting substances and to publish lists of acceptable and unacceptable substitutes. Upon promulgation of the final rule, it is illegal to replace a Class I or Class II substance with any substitute which the Administrator determines may present adverse effects to human health or the environment where other substitutes have been identified that reduce overall risk and are currently or potentially available.	Other
	GS-37	Green Seal	Green Seal Environmental Standard for General-Purpose, Bathroom, Glass, and Carpet Cleaners Used for Industrial and Institutional Purposes	Test Method
	On the National Contingency Plan (N.C.P.) list of registered oil emulsifiers	Environmental Protection Agency	National Contingency Plan	Other
Multipurpose Cleaners	APR 1755B, category 10 for use in the aerospace industry	Society of Automotive Engineers	Effect of Cleaning Agents on Aircraft Engine Materials, Stock Loss Test Method	Test Method
	ASTM D1298	American Society for Testing and Materials	D1298 Standard Test Method for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method	Test Method
	ASTM D130	American Society for Testing and Materials	D130 Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test	Test Method
	ASTM D2500	American Society for Testing and Materials	D2500 Standard Test Method for Cloud Point of Petroleum Products	Test Method

	ASTM D86	American Society for Testing and Materials	D86 Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure	Test Method
	EPA/600/4-90/027, USEPA EMSL	Environmental Protection Agency	EPA 600/4-90-027F: Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms	Test Method
	GS-34	Green Seal	This standard establishes environmental requirements for cleaning/degreasing agents.	Performance Standard
	GS-37	Green Seal	Green Seal Environmental Standard for General-Purpose, Bathroom, Glass, and Carpet Cleaners Used for Industrial and Institutional Purposes	Test Method
	OECD 301B	Organization for Economic Cooperation and Development	CO2 Evolution Test for biodegradation	Test Method
	VOC's - EPA 601	Environmental Protection Agency	Purgeable Halocarbons	Test Method
	VOC's - EPA 602	Environmental Protection Agency	Purgeable Aromatics	Test Method
	VOC's - EPA 608	Environmental Protection Agency	Organochlorine Pesticides and PCBs	Test Method
Parts Wash Solution	ASTM D-92	American Society for Testing and Materials	D92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester	Test Method
	ASTM D-446	American Society for Testing and Materials	D446 Standard Specifications and Operating Instructions for Glass Capillary Kinematic Viscometers	Test Method
	ASTM D-445	American Society for Testing and Materials	D445 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)	Test Method
	ASTM D-877	American Society for Testing and Materials	D877 Standard Test Method for Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrodes	Test Method

CHAPTER 4.0

PURCHASE DATA

Using terms that best match the items in the proposed rule for Round 5, 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. For example, the search did not reveal any "hits" for products within the parts wash solutions item, but USDA knows that at least one U.S. Air Force base uses biobased parts wash solutions in the repair of aircraft parts.

Federal Purchase Information

Round 5

GSA Schedules e-Library
GSA Schedule Sales
Query

Item

Category/SIN	Description	Quarterly Purchases				Total FY
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Chain and Cable Lubricants

		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
834 900	Petroleum and Fuel	\$12,262	\$4,088	\$4,009	\$6,473	\$26,832
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:						\$873,509

Corrosion Preventatives

		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
834 100	Aerospace commercial coatings (including recycled coatings), adhesives, and sealants	\$566,242	\$497,667	\$653,734	\$628,814	\$2,346,457
834 200	Marine commercial coatings (including recycled coatings), adhesives and sealants	\$1,623,034	\$1,292,060	\$1,881,415	\$1,499,958	\$6,296,467
834 300	Vehicle and industrial commercial coatings (including recycled coatings), adhesives and sealants	\$2,660,982	\$1,704,038	\$2,377,045	\$2,255,604	\$8,997,669
834 400	Architectural commercial coatings (including recycled coatings), adhesives and sealants	\$2,343,909	\$1,505,135	\$1,974,139	\$1,592,718	\$7,415,901
834 500	Stains, Varnishes, Sealers, Shellacs and Lacquers	\$151,347	\$50,160	\$131,662	\$68,101	\$401,270
Total:						\$25,457,764

Food Cleaners		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
375 361	Biodegradable Cleaner/Degreaser (Water Based) Non-Phenolic and Non-Petroleum - Products approved by USDA for Food Handling Areas	\$572,057	\$703,487	\$876,835	\$681,756	\$2,834,135
Total:						\$2,834,135

Forming Lubricants		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
834 900	Petroleum and Fuel	\$12,262	\$4,088	\$4,009	\$6,473	\$26,832
Total:						\$26,832

Gear Lubricants		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
834 900	Petroleum and Fuel	\$12,262	\$4,088	\$4,009	\$6,473	\$26,832
Total:						\$26,832

General Purpose Household Cleaners		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
852 3	Lodging and Hospitality Supplies and Services	\$5,130,244	\$4,728,632	\$2,703,328	\$2,377,481	\$14,939,685
375 361	Biodegradable Cleaner/Degreaser (Water Based) Non-Phenolic and Non-Petroleum - Products approved by USDA for Food Handling Areas	\$572,057	\$703,487	\$876,835	\$681,756	\$2,834,135
375 362	Biodegradable Cleaner/Degreaser (Solvent Based) Non-Phenolic and Non-petroleum	\$57,875	\$10,910	\$8,323	\$13,473	\$90,581
375 363	Cleaners/Degreasers - (Water and/or Solvent Based Detergent)	\$1,021,075	\$697,904	\$682,983	\$778,403	\$3,180,365
J375 366	Glass Cleaner	\$2,695	\$7,864	\$2,892	\$1,070	\$14,521

J375 363	Cleaners/Degreasers (Water And/or Solvent Based Detergent)	\$37,960	\$22,298	\$9,436	\$8,451	\$78,145
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Total: \$21,137,432

Industrial Cleaners

		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
375 364	Cleaner/Degreasers and Polishes - (I,I,I Trichloroethane CFC Replacement for Industrial/Electrical Applications)	\$887,666	\$944,734	\$855,937	\$1,392,710	\$4,081,047
852 3	Lodging and Hospitality Supplies and Services	\$5,130,244	\$4,728,632	\$2,703,328	\$2,377,481	\$14,939,685
375 362	Biodegradable Cleaner/Degreaser (Solvent Based) Non-Phenolic and Non-petroleum	\$57,875	\$10,910	\$8,323	\$13,473	\$90,581
375 363	Cleaners/Degreasers - (Water and/or Solvent Based Detergent)	\$1,021,075	\$697,904	\$682,983	\$778,403	\$3,180,365
J375 363	Cleaners/Degreasers (Water And/or Solvent Based Detergent)	\$37,960	\$22,298	\$9,436	\$8,451	\$78,145

Total: \$22,369,823

Multipurpose Cleaners

		Jul-Sep 05	Oct-Dec 05	Apr-Jun 06	Jan-Mar 06	Total FY 06
476 13	Disinfectants	\$446,473	\$419,807	\$661,425	\$474,976	\$2,002,681
375 363	Cleaners/Degreasers - (Water and/or Solvent Based Detergent)	\$1,021,075	\$697,904	\$682,983	\$778,403	\$3,180,365
J375 363	Cleaners/Degreasers (Water And/or Solvent Based Detergent)	\$37,960	\$22,298	\$9,436	\$8,451	\$78,145
375 362	Biodegradable Cleaner/Degreaser (Solvent Based) Non-Phenolic and Non-petroleum	\$57,875	\$10,910	\$8,323	\$13,473	\$90,581

Total: \$5,351,772

Parts Wash Solutions

No Results

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 5 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 first 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 first-round items.

Chain & Cable Lubricants – The first company producing chain and cable lubricants we identified was founded in 1907, and they claim to have begun making biobased products that same year. Most companies did not begin making biobased products until the 1990s to 2000s.

Corrosion Preventatives – Although the oldest company submitting information for this item was founded in the early 1930s, the first biobased products were produced in 1991.

Food Cleaners – The earliest biobased food cleaner we identified began production in 1990.

Forming Lubricants – The first company we identified was founded in 1984, but the earliest known biobased product was not produced until 1997.

Gear Lubricants – Although several of the gear lubricants manufacturers we identified were founded as long ago as the mid-1800s and 1920s, the earliest biobased products were produced in the early 1990s.

General Purpose Household Cleaners – The first company producing biobased household cleaners was founded in 1907. Most companies did not begin making biobased household cleaners until the 1990s to 2000s.

Industrial Cleaners – The first company was founded in 1929. The first product was produced in 1949, although most of the products identified were developed in the 1980s. (See letter from Florida Chemical Company)

Multi-Purpose Cleaners – Although several of the multi-purpose cleaners manufacturers we have identified were founded as long ago as the 1880, the earliest biobased product was produced in the 1970s with the majority not produced until the 1990s to 2000s.

Parts Wash Solutions – The first company producing biobased parts wash solutions of those that we have identified was founded in 1930. The first product was produced in 1981.

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
10/31/2008

Mature Markets Background Document
Round 5

5/16/2006

Item	Company	Year Founded	Year Began Biobased
Chain & Cable Lubricants	AJTK	2001	1991- started at UNI
	BP37	1985	1998
	C9JH		1992
	D8E9	1907	1907
	DRL2	1929	
	H675	1946	
	HAKV	1984	
	J3TP	2001	1997
	J7A3		
	JB88	1928	2004
	KK69		
	MPV9	2000	2000
	NK6D		
	Q445		
	RDO8	1992	1992
	RGWJ	1991	1991
	T3ON		
	UX2U		
	WF5U	1997	1997
	X4YT	1999	
Y3R8			
Corrosion Preventatives	A9G4		
	BP37	1985	1998
	G7P9	1961	
	KK69		
	M3D3		
	NM61		
	O539	1976	
	OURR		
	QK84	1986	

	QTPR		
	RGWJ	1991	1991
	T3ON		
	X3E5		
	YJ3R	1987	2002
	ZGB8	1933	2003
Food Cleaners	C3PW		
	CF61		
	G944	1990	1990
	HNG5	2003	2003
	K4U8	2001	2001
	O5MZ		
	RDO8	1992	1992
	ULHI	1999	1999
	V321	late 1990s	
	WF5U	1997	1997
	XB9O	1983	1983
	Forming Lubricants	AJTK	2001
HAKV		1984	
KM73		1925	1931
RDO8		1992	1992
WF5U		1997	1997
Gear Lubricants	AJTK	2001	1991- started at UNI
	BP37	1985	1998
	HAKV	1984	
	J7A3		
	JB88	1928	2004
	JY3G	1866	mid 1900s
	N1H5	1858	1858
	RDO8	1992	1992
	RGWJ	1991	1991
	T3ON		
General Purpose Household Cleaners	AY9O		
	C9PX	1990	1990
	FCM9	1977	1987

	H96J	2002	2002
	HNG5	2003	2003
	J3TP	2001	1997
	K4U8	2002	2002
	M3D3		
	N5U4	1988	
	P382		
	RDO8	1992	1992
	S198	1990	1990
	TA8E	2002	2002
	ULHI	1999	1999
	V865	1991	1991
	X4H4	1969	2005
Industrial Cleaners	A7XC		
	BP37	1985	1998
	C2C8		
	C3PW		
	C9PX	1990	1990
	CAMU	2000	2000
	CJQ1	1960	
	D54E	1999	1999
	D5XU	1992	1992
	DRL2	1929	
	ES5W		
	F8N9		
	G944	1990	1990
	I677	1944	2001
	J4FB	1985	
	JOXA	1961	1997
	JW37		
	K46X		
	K4U8	2001	2001
	K6ON	1949	1949
	KE9G	1982	1982
	KG89	1983	1983

	KK69		
	KV79	2000	2000
	L8O1		
	M179		
	M7FY	1981	1981
	M7MP		
	MG2M		
	MODM	1956	
	NM61		
	NMO3	1996	1996
	O9MM		
	PN64	1978	2000
	PWLI		
	RDO8	1992	1992
	RGWJ	1991	1991
	RYB8	1981	1981
	S198	1990	1990
	SC8J		
	T17G		
	T3ON		
	TA8E	2002	2002
	TNX7	2004	2004
	TTHO		
	TXH8	2002	2002
	U4WQ	1992	1992
	ULHI	1999	1999
	V422		
	V7US		
	W64A	1997	~1997
	W916		
	WF5U	1997	1997
	WUH6	1990's	
	X3UX		
	Y8EG	1984	~1995
	YJ3R	1987	2002

	ZGB8		
Multipurpose Cleaners	A29D		
	AY9O		
	C9PX	1990	1990
	D5XU	1992	1992
	E8HD	1970	
	G944	1990	1990
	HN7J	1968	
	I677	1944	2001
	IB5T	1880	
	J5Z2	1996	
	K4U8	2001	2001
	K6DW	1989	1989
	M179		
	M2RO	1994	1998
	MODM	1956	
	N5U4	1988	
	NMO3	1996	1996
	PH7O		
	RDO8	1992	1992
	RGWJ	1991	1991
	SDH5	late 1970s	late 1970s
	TA8E	2002	2002
	TPHG	1993	1993
	TTHO		
	ULHI	1999	1999
	V2QF	2000	2000
	V422		
	V865	1991	1991
	VQXI	1999	1999
	VWD1		
W732	1960		
W916	1932		
WF5U	1997	1997	
WH38	1939		

	X3UX		
	XB9O	1983	1983
	Y8EG	1984	~1995
	YJ3R	1987	2002
	ZGB8	1933	2003
Parts Wash Solutions	BP37	1985	1998
	CNFX		
	EPQD	1993	1993
	K6DW	1989	1989
	M179		
	M3D3		
	M7FY	1981	1981
	O539	1976	
	RGWJ	1991	1991
	RYB8	1981	1981
	TA8E	2002	2002
	W64A	1997	~1997
	WF5U	1997	1997
	Y8EG	1984	~1995
	YJ3R	1987	2002
	ZGB8		
	ZR7U		