

Proposed Item for Biobased Designation

The following biobased product information has been collected to support item designation by USDA for the Federal Biobased Product Preferred Procurement Program (FB4P). This summary reflects data available as of September 15, 2005.

Title: Penetrating Lubricants

Description: Penetrating lubricants represent that group of products formulated for use in a wide variety of industrial and domestic applications requiring light lubrication including frozen nuts and bolts, power tools, gears, valves, chains and cables. Penetrating lubricants are typically multifunctional products providing lubrication in close tolerant areas, as well as acting as corrosion inhibitors for both internal and external applications.

Manufacturers Identified: 14 manufacturers producing Penetrating 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 Penetrating Lubricants:

- Biobased Manufacturers Association
- Independent Lubricant Manufacturers Association
- National Oil Recyclers Association

Commercially Available Products Identified: Of the manufacturers identified, 22 Penetrating 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 12 Penetrating Lubricants.

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 #D130-04 Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test
- American Society for Testing and Materials #D2266-01 Standard Test Method for Wear Preventive Characteristics of Lubricating Grease (Four-Ball Method)
- American Society for Testing and Materials #D2783-03 Standard Test Method for Measurement of Extreme-Pressure Properties of Lubricating Fluids (Four-Ball Method)
- American Society for Testing and Materials #D287-92(2000)e1 Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)
- American Society for Testing and Materials #D3233-93(2003) Standard Test Methods for Measurement of Extreme Pressure Properties of Fluid Lubricants (Falex Pin and Vee Block Methods)

- 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 #D5864-00 Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components
- American Society for Testing and Materials #D5985-02 Standard Test Method for Pour Point of Petroleum Products (Rotational Method)
- 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 #D93-02a Standard Test Methods for Flash-Point by Pensky-Martens Closed Cup Tester

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

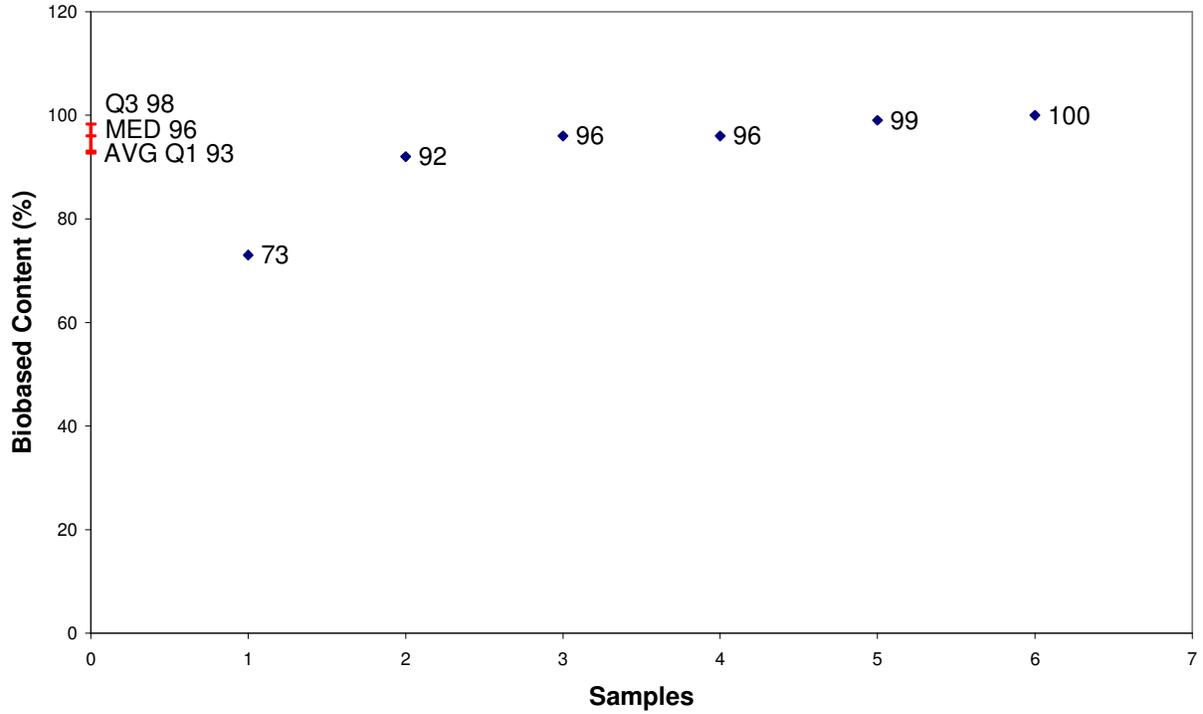
Biobased Content Data: Results from biobased content testing of Penetrating Lubricants indicate a range of content percentages from 73% minimum to 100% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

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

BEES Analysis: The life-cycle costs of the submitted Biobased Carpets range from \$6775.53 minimum to \$7868.18 maximum per usage unit. The environmental scores range from 16.6355 minimum to 21.4856 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Penetrating Lubricants

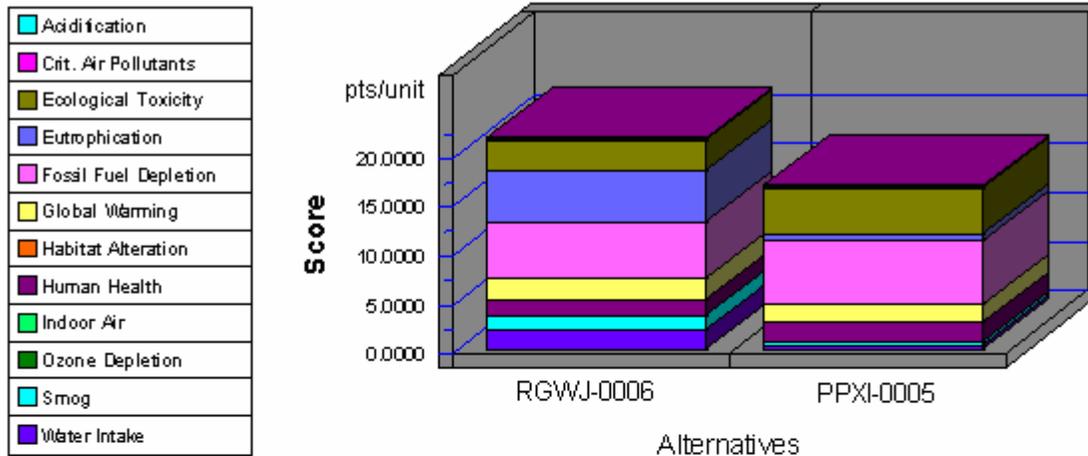


	Manufacturers Identified	Products Identified	C14	BEES
1	RGWJ]	RGWJ-0006	73	yes
2	G944	G944-0017	92	
3	J3TP	J3TP-0009	96	yes
4	J3TP	J3TP-0033	96	
5	DQJV	DQJV-0001	99	
6	J7A3	J7A3-0001	100	

Appendix B - BEES Analysis Results

Units: One 55-gallon Drum over 10 Years of Use

Environmental Performance

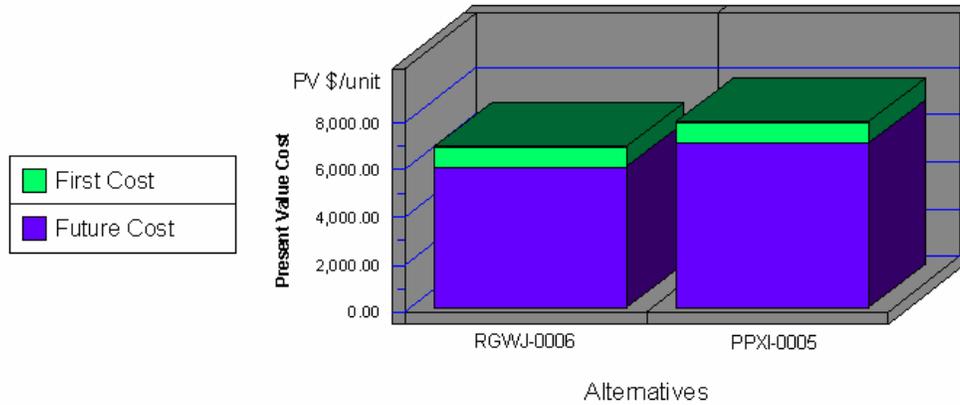


Note: Lower values are better

Category	RGWJ-0006	PPXI-0005
Acidification-5%	0.0014	0.0008
Crit. Air Pollutants-6%	0.0880	0.1325
Ecolog. Toxicity-11%	3.1112	4.6811
Eutrophication-5%	5.1427	0.7865
Fossil Fuel Depl.-5%	5.8819	6.4847
Global Warming-16%	2.0684	1.6861
Habitat Alteration-16%	0.0000	0.0000
Human Health-11%	1.6283	2.1279
Indoor Air-11%	0.0000	0.0000
Ozone Depletion-5%	0.0000	0.0001
Smog-6%	1.4777	0.2843
Water Intake-3%	2.0860	0.4515
Sum	21.4856	16.6355

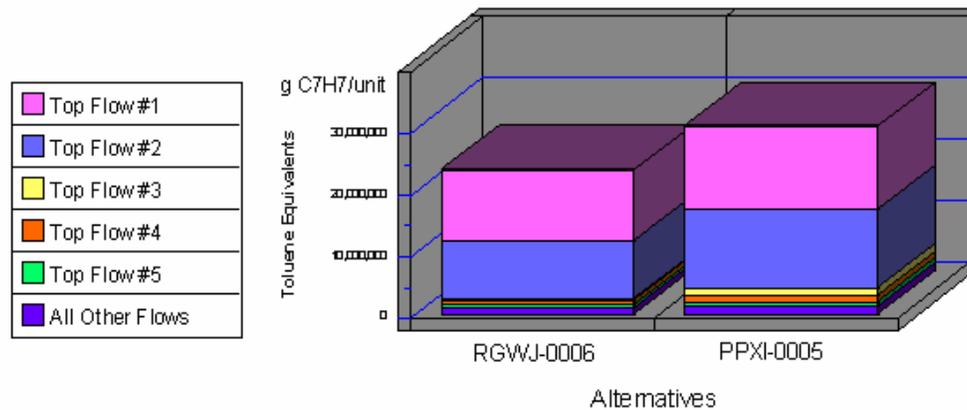
Appendix B (continued)

Economic Performance



Category	RGWJ-0006	PPXI-0005
First Cost	799.89	929.02
Future Cost- 3.9%	5974.64	6939.16
Sum	6774.53	7868.18

Human Health by Sorted Flows*



Note: Lower values are better

Category	RGWJ-0006	PPXI-0005
Cancer-(w) Arsenic (As3+, As5+)	11,548,209.23	13,536,015.73
Cancer-(w) Phenol (C6H5OH)	9,216,691.00	12,656,413.00
Cancer-(a) Benzene (C6H6)	217,013.50	1,346,180.00
Cancer-(a) Dioxins (unspecifc)	852,969.04	895,090.97
Cancer-(a) Arsenic (As)	573,229.66	884,851.16
All Others	1,094,077.41	1,395,024.40
Sum	23,502,189.84	30,713,575.25

*Sorted by five topmost flows for worst-scoring product