

Proposed Product Category for Biobased Designation

The following biobased product information has been collected to support product category designation by USDA for the BioPreferred Program. This summary reflects data available as of May 6, 2008.

Title: Asphalt and Tar Removers

Description: Cleaning agents designed to remove asphalt or tar from equipment, roads, or other surfaces.

Companies Supplying Product Category: 13 companies supplying Asphalt and Tar Removers have been identified through internet searches, manufacturer's directories, trade associations, and company submissions.

Industry Associations Investigated: The following industry associations have been investigated for member companies supplying Asphalt and Tar Removers:

- United Soybean Board Association
- National Corn Growers Association
- Asphalt Emulsion Manufacturers Association
- Colorado Asphalt Pavement Association
- Ohio Corn Growers Association
- Michigan Corn Growers Association

Commercially Available Products Identified: Of the companies identified, 16 Asphalt and Tar Removers 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 Asphalt and Tar Removers.

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

- No Results

Samples Tested for Biobased Content: 4 samples of Asphalt and Tar Removers have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

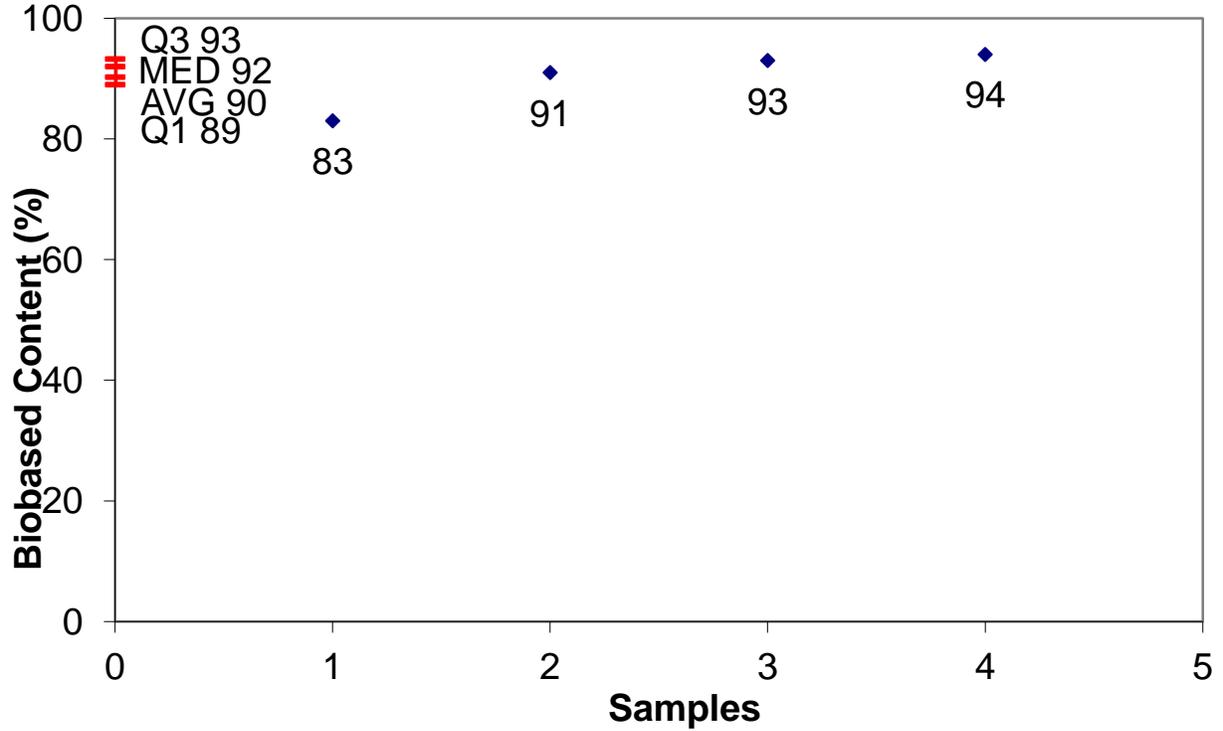
Biobased Content Data: Results from biobased content testing of Asphalt and Tar Removers indicate a range of content percentages from 83% minimum to 94% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

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

BEES Analysis: The life-cycle costs of the submitted Asphalt and Tar Removers range from \$7.61 minimum to \$24.95 maximum per usage unit. The environmental scores range from 0.0155 minimum to 0.0167 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Asphalt and Tar Removers

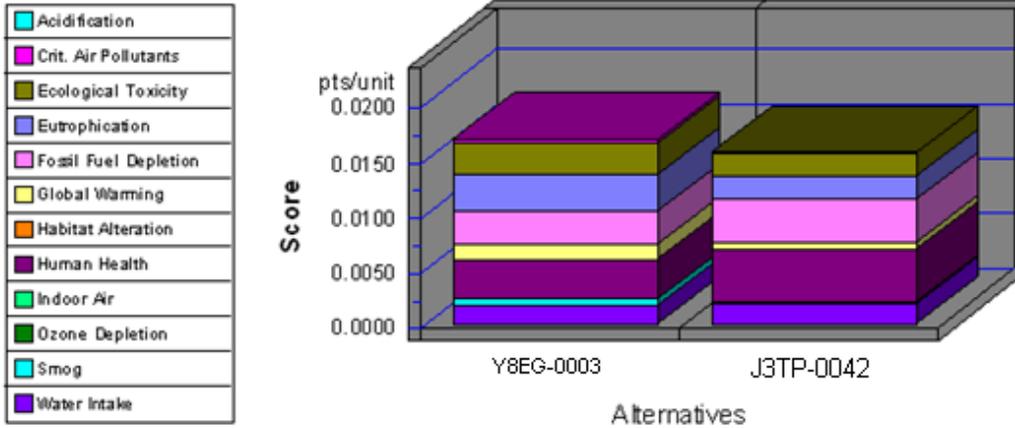


	Company	Product	C14	BEES
1	Y8EG	Y8EG-0003	83	Yes
2	RYB8	RYB8-0013	91	
3	X3E5	X3E5-0008	93	
4	J3TP	J3TP-0042	94	Yes

Appendix B - BEES Analysis Results

Functional Unit: 1 gallon

Environmental Performance

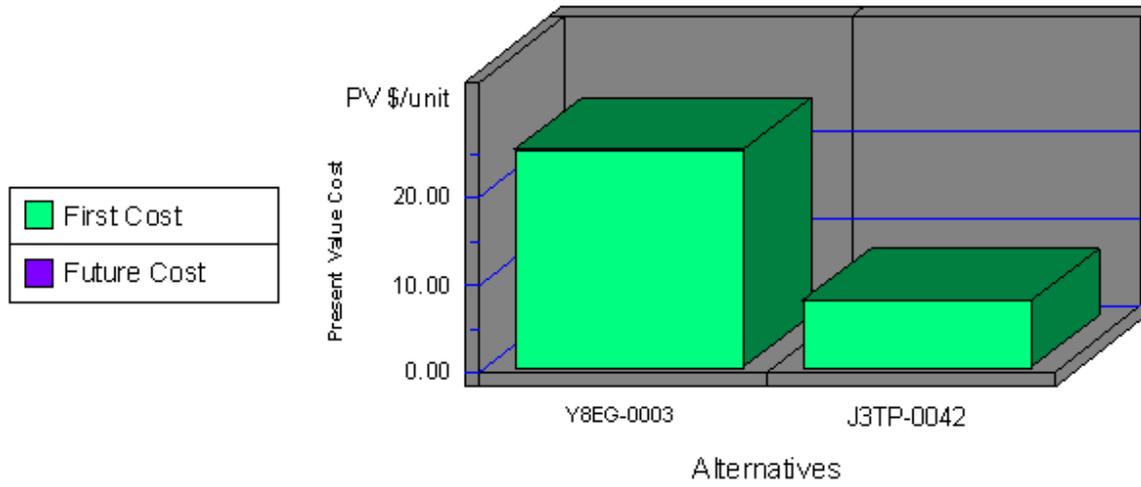


Category	Y8EG-0003	J3TP-0042
Acidification--3%	0.0000	0.0000
Crit. Air Pollutants--9%	0.0003	0.0000
Ecolog. Toxicity--7%	0.0028	0.0021
Eutrophication--6%	0.0033	0.0021
Fossil Fuel Depl.--10%	0.0030	0.0038
Global Warming--29%	0.0013	0.0006
Habitat Alteration--6%	0.0000	0.0000
Human Health--13%	0.0037	0.0049
Indoor Air--3%	0.0000	0.0000
Ozone Depletion--2%	0.0000	0.0000
Smog--4%	0.0006	0.0001
Water Intake--8%	0.0017	0.0019
Sum	0.0167	0.0155

Asphalt and Tar Removers			
Impacts	Units	Y8EG-0003	J3TP-0042
Acidification	millimoles H ⁺ equivalents	1.89E+03	2.55E+01
Criteria Air Polutants	microDALYs	5.50E-01	9.95E-02
Ecotoxicity	g 2,4-D equivalents	3.31E+01	2.48E+01
Eutrophication	g N equivalents	1.07E+01	6.61E+00
Fossil Fuel Depletion	MJ surplus energy	1.06E+01	1.35E+01
Global Warming	g CO ₂ equivalents	1.13E+03	5.19E+02
Habitat Alteration	T&E count	0.00E+00	0.00E+00
Human Health--Cancer	g C ₆ H ₆ equivalents	2.37E+00	3.14E+00
Human Health--NonCancer	g C ₇ H ₈ equivalents	2.23E+03	2.27E+03
Indoor Air Quality	g TVOCs	0.00E+00	0.00E+00
Ozone Depletion	g CFC-11 equivalents	3.84E-05	2.25E-06
Smog	g NO _x equivalents	2.43E+01	3.05E+00
Water Intake	liters of water	1.14E+02	1.29E+02
Functional Unit	-----	1 gallon of product	

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

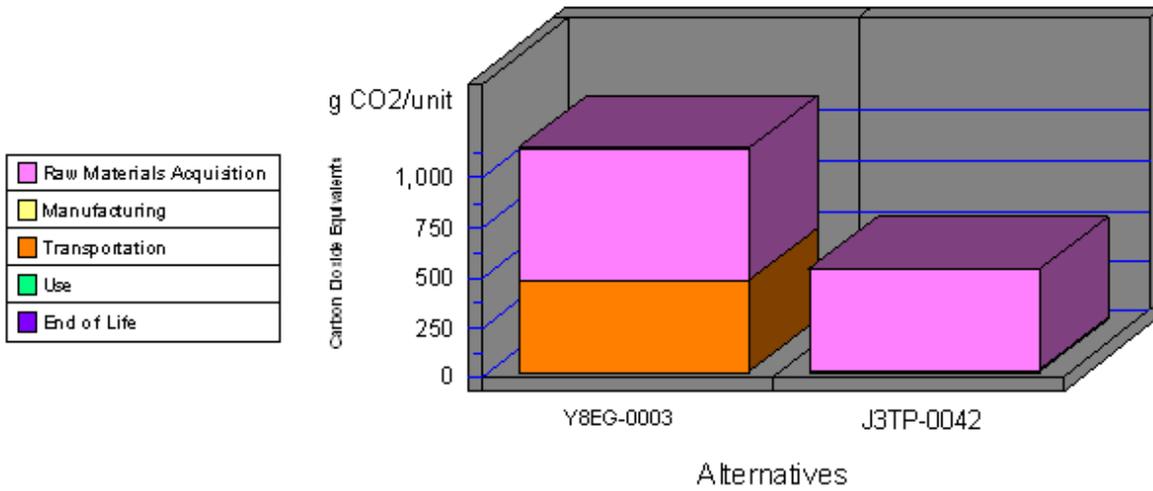
Economic Performance



Category	Y8EG-0003	J3TP-0042
First Cost	24.95	7.61
Future Cost- 3.0%	0.00	0.00
Sum	24.95	7.61

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

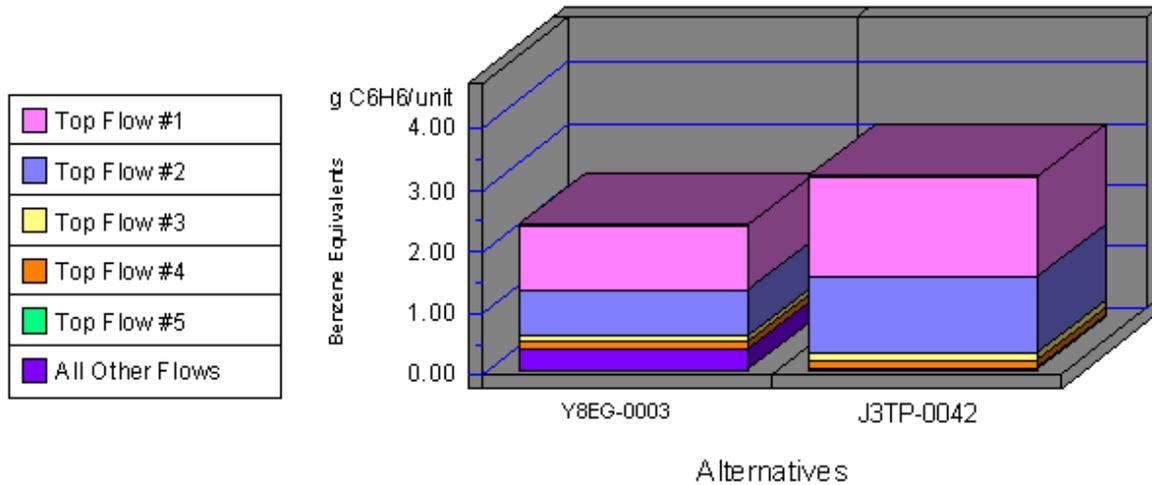
Global Warming by Life-Cycle Stage



Note: Lower values are better

Category	Y8EG-0003	J3TP-0042
1. Raw Materials	669	508
2. Manufacturing	1	0
3. Transportation	458	11
4. Use	0	0
5. End of Life	0	0
Sum	1128	519

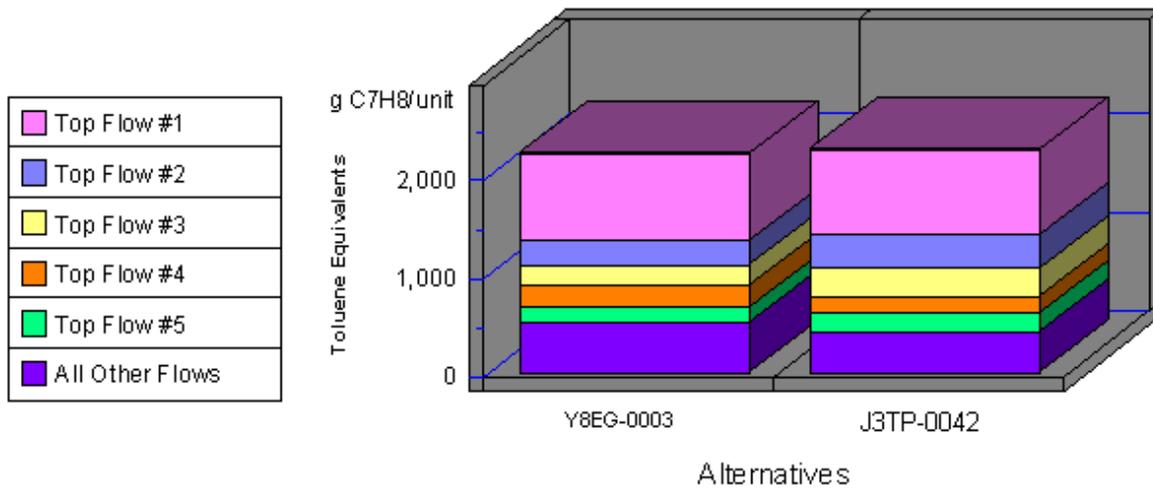
Human Health Cancer by Sorted Flows*



Note: Lower values are better

Category	Y8EG-0003	J3TP-0042
Cancer--(w) Arsenic (As3+, As5+	1.06	1.60
Cancer--(w) Phenol (C6H5OH)	0.74	1.23
Cancer--(a) Benzene (C6H6)	0.09	0.14
Cancer--(a) Arsenic (As)	0.12	0.12
Cancer--(w) Benzene (C6H6)	0.01	0.01
All Others	0.35	0.02
Sum	2.37	3.14

Human Health Noncancer by Sorted Flows*



Note: Lower values are better

Category	Y8EG-0003	J3TP-0042
Noncancer--(a) Mercury (Hg)	891.66	873.99
Noncancer--(w) Barium (Ba++)	251.20	331.06
Noncancer--(w) Lead (Pb++, Pb4+)	200.63	285.10
Noncancer--(a) Lead (Pb)	231.65	180.68
Noncancer--(a) Cadmium (Cd)	143.84	171.21
All Others	515.91	432.58
Sum	2,234.89	2,274.63