

## 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 3, 2008.

**Title:** Interior Paints and Coatings – Latex and Waterborne Alkyd

**Description:** Pigmented liquids, formulated for use indoors, that dry to form a film and provide protection and added color to the objects or surfaces to which they are applied.

**Title:** Interior Paints and Coatings – Oil-based and Solventborne Alkyd

**Description:** Pigmented liquids, formulated for use indoors, that dry to form a film and provide protection and added color to the objects or surfaces to which they are applied.

**Companies Supplying Item:** 15 companies supplying Interior Paints and Coatings 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 Interior Paints and Coatings:

- United Soybean Board
- National Corn Growers Association
- Nation Association of Home Builders
- Nation Paint & Coatings Association

**Commercially Available Products Identified:** Of the companies identified, 114 Interior Paints and Coatings 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 10 Interior Paints and Coatings.

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

- No Results

**Samples Tested for Biobased Content:** 5 samples of Interior Paints and Coatings have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

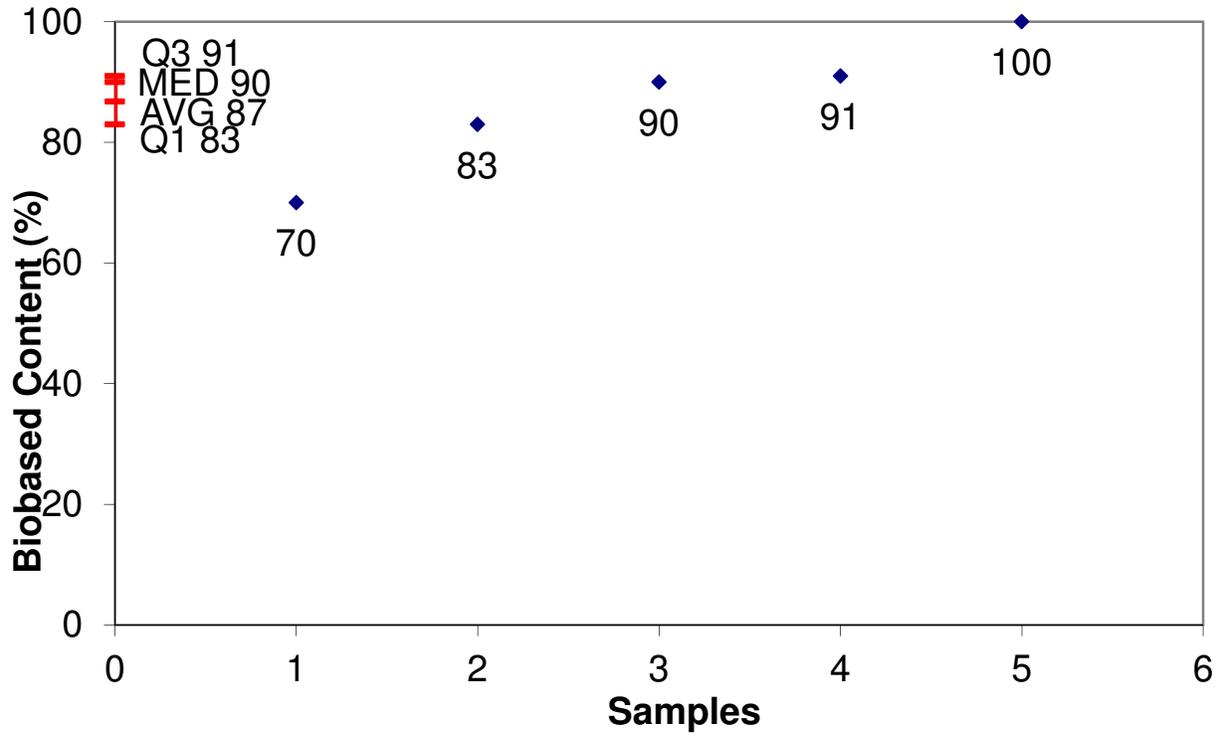
**Biobased Content Data:** Results from biobased content testing of Interior Paints and Coatings indicate a range of content percentages from 70% minimum to 100% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

**Products Submitted for BEES Analysis:** Life-cycle cost and environmental effect data for 2 Interior Paints and Coatings have been submitted to NIST for BEES analysis.

**BEES Analysis:** The life-cycle costs of the submitted Interior Paints and Coatings range from \$1.03 minimum to \$1.20 maximum per usage unit. The environmental scores range from 0.0088 minimum to 0.0116 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Interior Paints and Coatings

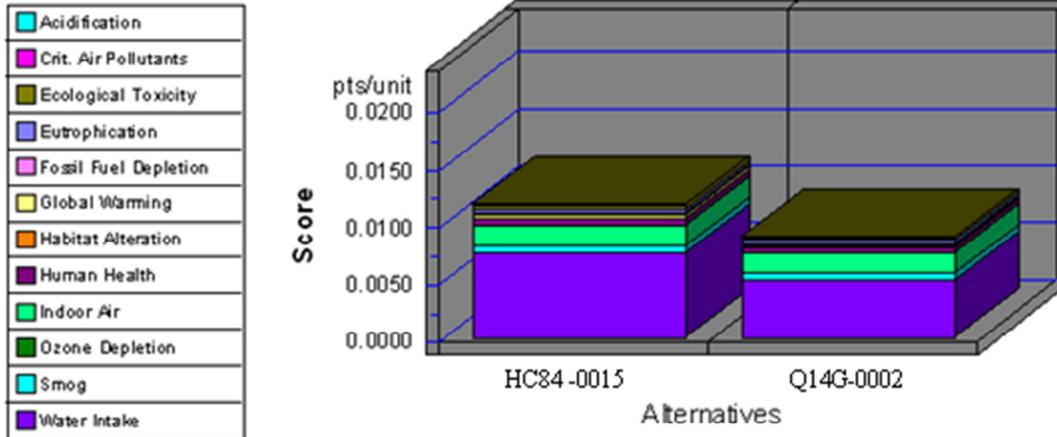


	Company	Product	C14	BEES
1	HC84	HC84-0015	70	Yes
2	Q14G	Q14G-0002	83	Yes
3	Q14G	Q14G-0013	90	
4	Q14G	Q14G-0009	91	
5	MXF6	MXF6-0004	100	

## Appendix B - BEES Analysis Results

Functional Unit: 1 sq. ft. over 50 years

### Environmental Performance



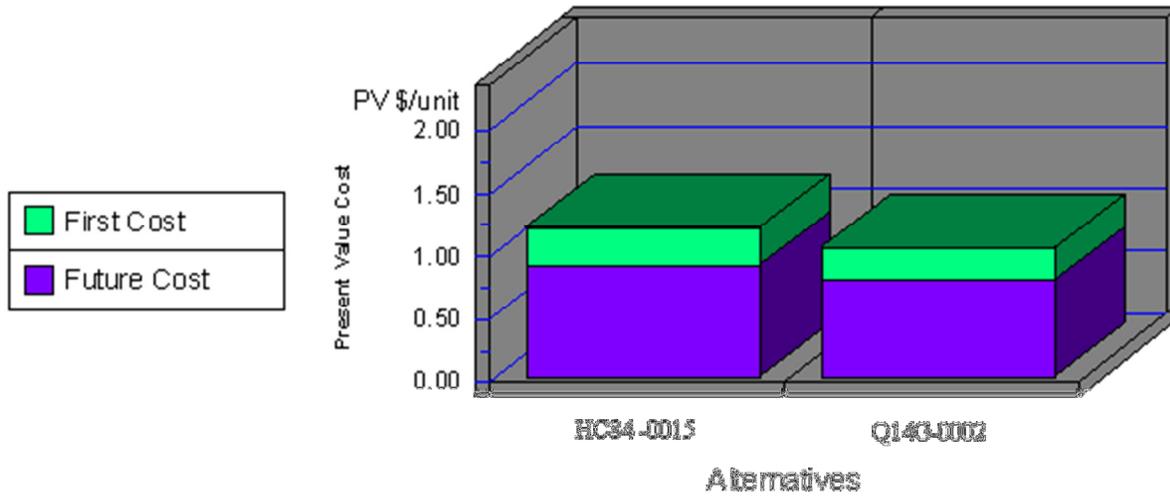
Note: Lower values are better

Category	HC84-0015	Q14G-0002
Acidification-3%	0.0000	0.0000
Crit. Air Pollutants-8%	0.0000	0.0000
Ecolog. Toxicity-7%	0.0004	0.0000
Eutrophication-8%	0.0003	0.0000
Fossil Fuel Depl.-10%	0.0002	0.0002
Global Warming-28%	0.0003	0.0001
Habitat Alteration-6%	0.0000	0.0000
Human Health-13%	0.0006	0.0004
Indoor Air-3%	0.0018	0.0018
Ozone Depletion-2%	0.0000	0.0000
Smog-4%	0.0006	0.0006
Water Intake-8%	0.0074	0.0081
<b>Sum</b>	<b>0.0118</b>	<b>0.0086</b>

<b>Interior Paints and Coatings</b>			
<b>Impacts</b>	<b>Units</b>	<b>HC84-0015</b>	<b>Q14G-0002</b>
Acidification	millimoles H <sup>+</sup> equivalents	1.45E+02	1.78E+02
Criteria Air Polutants	microDALYs	5.29E-02	4.79E-02
Ecotoxicity	g 2,4-D equivalents	4.34E+00	3.61E+00
Eutrophication	g N equivalents	8.33E-01	1.05E+00
Fossil Fuel Depletion	MJ surplus energy	8.15E-01	5.86E-01
Global Warming	g CO <sub>2</sub> equivalents	2.66E+02	9.25E+01
Habitat Alteration	T&E count	0.00E+00	0.00E+00
Human Health--Cancer	g C <sub>6</sub> H <sub>6</sub> equivalents	3.45E-01	2.81E-01
Human Health--NonCancer	g C <sub>7</sub> H <sub>8</sub> equivalents	7.41E+02	4.91E+02
Indoor Air Quality	g TVOCs	2.05E+01	2.05E+01
Ozone Depletion	g CFC-11 equivalents	9.03E-07	1.18E-06
Smog	g NO <sub>x</sub> equivalents	2.16E+01	2.31E+01
Water Intake	liters of water	4.92E+02	3.38E+02
Functional Unit	-----	1 sq. ft over 50 years	

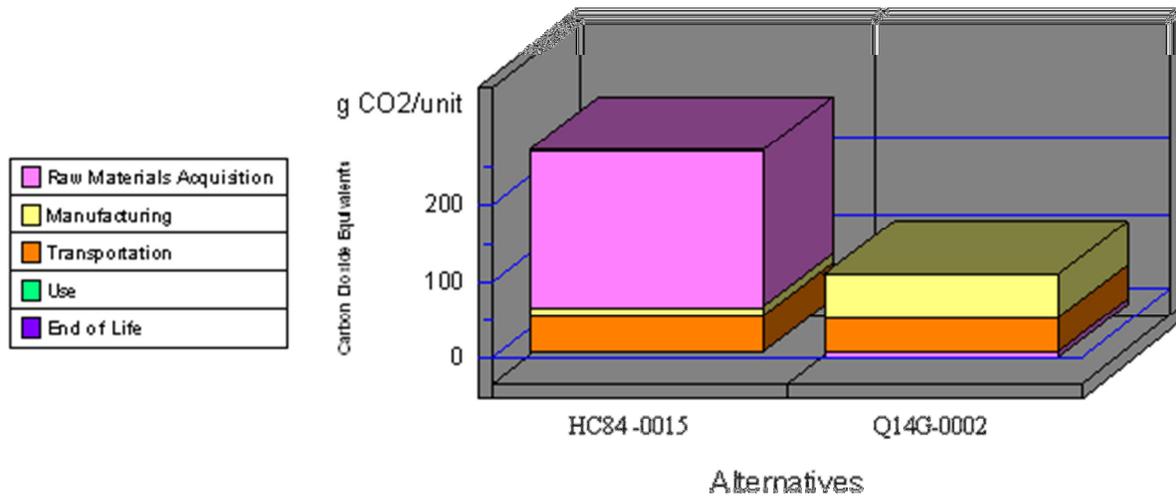
1 Following are more complete descriptions of units: Acidification: millimoles of hydrogen ion equivalents; Criteria Air Pollutants: micro Disability-Adjusted Life Years; Ecological Toxicity: grams of 2,4-dichlorophenoxy-acetic acid equivalents; Eutrophication: grams of nitrogen equivalents; Fossil Fuel 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	HC84-0015	Q14G-0002
First Cost	0.31	0.28
Future Cost- 3.0%	0.89	0.77
<b>Sum</b>	<b>1.20</b>	<b>1.03</b>

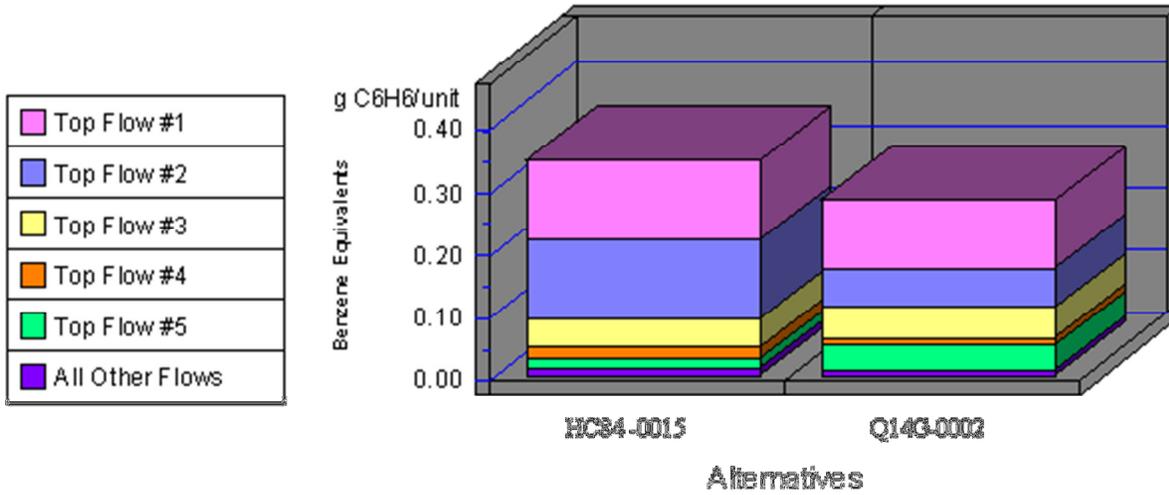
# Global Warming by Life-Cycle Stage



Note: Lower values are better

Category	HC84-0015	Q14G-0002
1. Raw Materials	206	-9
2. Manufacturing	13	57
3. Transportation	47	44
4. Use	0	0
5. End of Life	0	0
<b>Sum</b>	<b>286</b>	<b>83</b>

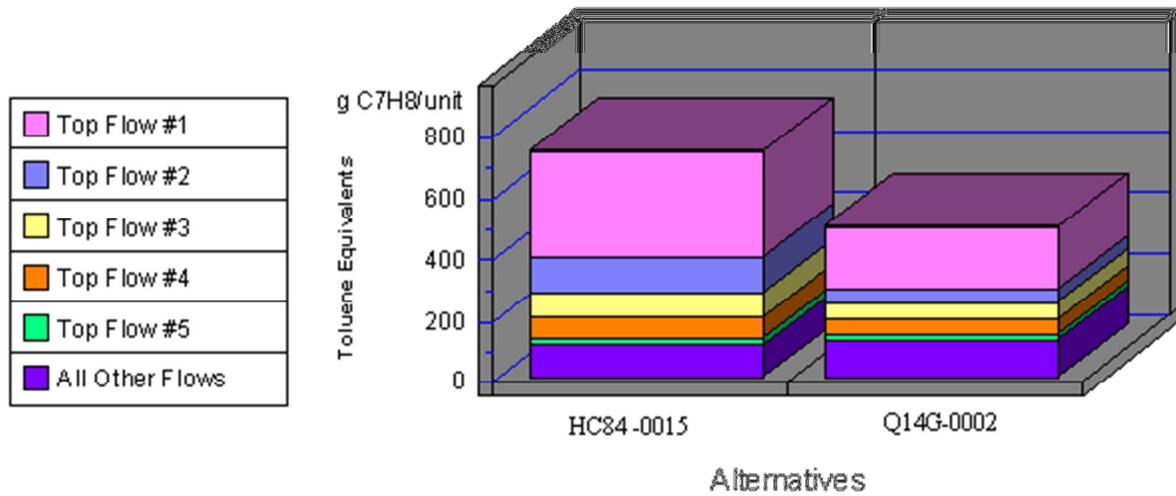
## Human Health Cancer by Sorted Flows\*



Note: Lower values are better

Category	HC84-0015	Q14G-0002
Cancer-(w) Arsenic (As3+, As5+)	0.13	0.11
Cancer-(w) Phenol (C6H5OH)	0.13	0.08
Cancer-(a) Arsenic (As)	0.05	0.05
Cancer-(a) Chromium (Cr III, Cr VI)	0.02	0.01
Cancer-(a) Dioxins (unspecific)	0.01	0.04
All Others	0.01	0.01
<b>Sum</b>	<b>0.35</b>	<b>0.28</b>

## Human Health Noncancer by Sorted Flows\*



Note: Lower values are better

Category	HC84-0015	Q14G-0002
Noncancer--(a) Mercury (Hg)	343.57	197.39
Noncancer--(w) Mercury (Hg+, Hg)	119.86	46.96
Noncancer--(a) Lead (Pb)	77.97	55.44
Noncancer--(a) Aluminum (Al)	68.09	45.41
Noncancer--(w) Lead (Pb <sup>++</sup> , Pb <sup>4+</sup> )	27.84	21.79
All Others	106.03	124.34
<b>Sum</b>	<b>741.37</b>	<b>491.32</b>