



BIO-DERIVED RENEWABLE CONTENT PRODUCT CALCULATION INSTRUCTIONS

1. Enter all of the required information on the user agreement and worksheet such as company name, contact information, ink identification, etc
2. Deconstruct the manufactured ink formula to the basic purchased raw material components.
3. Using the Bio-derived Renewable Content (BRC) worksheet (see enclosed), assess the bio-derived renewable content (BRC) of each raw material as follows:
 - a. Calculate the percentage of raw materials that are defined as 100% bio-derived renewable materials (e.g., linseed oil, soybean oil, water).
 - b. For raw materials where the BRC is unknown, contact the raw material supplier to obtain the percentage content of bio-derived raw materials (e.g., the percentage of tall oil rosin in a maleated rosin ester) or reference the Chemidex Cybrary (www.chemidex.com).
 - c. Determine the sum percentage of bio-derived renewable raw materials in the product.
 - d. Round the BRC to the nearest 0.1%.
4. For the assessment of a single discreet product, the result of 3(c) is the BRC.
5. For the assessment of a product line, calculate the average BRC as follows:
 - a. For a process series, calculate the BRC for cyan, magenta, yellow, and black. Average the results to determine the overall BRC.
 - b. For non-process systems, calculate the BRC for the 6 products having the highest overall sales volume by pounds. Average the results to determine the overall BRC.

- c. For a Pantone match or similar blended product, calculate the BRC for each standard blending component in the system. Calculate the BRC for the blended product as follows:

Component:	Component BRC %:	Percent of Component:	BRC % Contribution by Component:
Color A	23.5	20%	4.7
Color B	26.8	20%	5.4
Color C	31.2	50%	15.6
Vehicle D	21.0	10%	2.1
		BRC TOTAL:	27.8%

6. Determine the Index rating as follows:

BRC Content:	BRC Label Index Number:
10.0 – 15.0%	10
15.1 – 25.0%	20
25.1 – 35.0%	30
35.1 – 45.0%	40
45.1 – 55.0%	50
55.1 – 65.0%	60
65.1 – 75.0%	70
75.1 – 85.0%	80
85.1 – 95.0%	90
95.1 – 100%	100

Example:

BRC= Bio-derived Renewable Content

<u>Sheetfed Ink Formula</u>	<u>BRC</u>
35.0 Flushed Pigment	
8.0 Chinawood oil	8.0
30.0 Varnish A	
20.0 Varnish B	
4.0 Polyethylene wax compound	
3.0 Driers	
 <u>Flush formula</u>	
40% Pigment	
30% of vehicle based on a gum rosin based resin (contains 50% resin which is made of 20% gum rosin)	1.1 ¹
30% of linseed oil and soy oil blend	10.5 ²
 <u>Varnish A Formula</u>	
50% Resin (30% is tall oil)	4.5 ³
10% Soy Oil	3.0 ⁴
35% Petroleum Oil	
5% Misc. Additives	
 <u>Varnish B Formula</u>	
60% Resin (consists of 30% gum rosin)	3.6 ⁵
40% Linseed/Tung Oil Mix	8.0 ⁶
 Polyethylene wax compound is reported as containing 10% linseed oil	0.4 ⁷
 Driers contain 30% vegetable oil	0.9 ⁸
 Total Bio-derived Renewable Content	40.0

¹ Ink contains 35% flush of which 30% is vehicle or 10.5% of which 50% is resin or 5.25%. 20% of that 5.25% is gum rosin or 1.05% which is reported as the amount of renewable material in the ink from the vehicle in the flush.

² Calculated as 30% of the 35% of flush in the formula or 10.5% renewable material

³ Varnish A is 30% of the ink formula of which 50% is a resin composed of 30% tall oil. So it is $.50 \times 30 = 15$. $.30 \times 15 = 4.5\%$

⁴ Simply take 10% soy oil of the vehicle which makes up 30% of the ink formula or 3.0% renewable material

⁵ Varnish B is 20% of the ink formula of which is 60% resin or 12% equating to 3.6% renewable material

⁶ Again varnish B is 20% of the ink formula, and the overall content of the linseed/tung mixture is 40% of that 20%, or 8% renewable material content

⁷ 10% of the wax compound is linseed oil, so it is 10% of the 4% in the formula or 0.4% of renewable material content

⁸ Driers contain 30% vegetable oil, so take 30% of the 3% of drier in the formula or 0.9% renewable material