

No-Tox[®] INK COST COMPARISON

No-Tox Ink vs Conventional Ink vs Overwrapping

When printing inserts that will come in direct contact with food products, several production options are available to fully comply with current FDA regulations. One option is to print with conventional inks and then overwrap the insert with FDA acceptable material to prevent ink contact with the food product. The second, and far more economical method, is to utilize No-Tox printing inks. Since No-Tox inks are formulated for direct food contact applications, the necessity of an overwrap is eliminated providing the inks do not visibly bleed onto the food product, in which case a No-Tox overprint varnish would be required. *

To document the overall cost effectiveness of No-Tox inks versus conventional inks in combination with a protective plastic overwrap, the following data was developed

INK COST STUDY

ASSUMPTIONS:

Number of inserts printed = 5 million
 Insert size = 2.25" x 5.75" or 12.9375 in.²
 Heatset Web Press with 4-color process
 Printing both sides @ 50% ink coverage

CALCULATIONS:

5 million x 12.9375 in.² = 64,687,500 in.²
 64,687,500 in.² x 2 sides = 129,375,000 in.²
 129,375,000 in.² x 50% coverage = 64,687,500 total square in.
 Sheet size = 25 in. x 38 in. (50 lb. Weight)
 Insert size = 2¼ in. x 5¾ in.
 Inserts per sheet = 60 up
 5 million inserts ÷ 60 up = 83,334 sheets
 83,334 ÷ 500 sheets per 100 wt = 166.67 (100 wt)
 Total sheets = 175/100wt (includes make-ready)

UNCOATED LITHO (food contact)

175 x \$52.00 (100wt) = \$9,100 ÷ 5,000,000 =
 .0018 x 1,000 inserts = \$1.800 per 1,000

UNCOATED LITHO (not food contact stock)

175 x \$45.00 (100wt) = \$7,875 ÷ 5,000,000 =
 .0016 x 1,000 inserts = \$1.600 per 1,000

Cost of Ink Needed & Cost per 1000 inserts

| No-Tox Ink | | Conventional |
|--------------------|----------------------------------|--------------------|
| 64,687,500 | square inches | 64,687,500 |
| ÷ 275,000 | coverage (in. ² /lb.) | ÷ 300,000 |
| 235.23 lbs. | pounds of ink | 215.63 lbs. |
| x \$29.21/lb | avg. ink cost/lb. | x \$4.00/lb. |
| \$6,871.07 | total ink cost | \$862.52 |
| ÷ 5,000,000 | number of inserts | ÷ 5,000,000 |
| \$.0014 | ink cost/inserts | \$.0002 |
| x 1,000 | per 1,000 inserts | x 1,000 |
| \$1.40 | Ink Cost/1,000 | \$0.20 |

Total Cost per 1,000 Inserts

| No-Tox | Comparison | Conventional |
|---------------|------------------|----------------|
| \$1.80 | Paper cost | \$1.60 |
| \$1.40 | Ink cost | \$0.20 |
| N/A | Plastic overwrap | \$10.50 |
| \$3.20 | Total cost | \$12.30 |

PAPER COST STUDY

FOUNDATION

As the preceding information indicates, the use of No-Tox inks on food approved stock is substantially more economical than overwrapping conventional inks. This economy is also accompanied by excellent print quality and color selection. The bottom line is No-Tox inks give you high quality printing at a substantially reduced cost. You will fully comply with all current FDA regulations regarding direct food contact.

* Using \$16.24 as the cost per pound of heatset overprint, and assuming full coverage on both sides, it would cost \$6,009 additional for overprint.
 (129,375,000 in.² ÷ 350,000 in.² per pound of varnish = 370 lbs. x \$16.24/lb.)

Adding this to the cost of the process colors and paper would result in an additional cost of \$1.20 per 1,000 coupons or a Total Cost of \$4.40 per 1,000 coupons - still significantly less than overwrapping!



For more information, contact your Colorcon representative or call 1-800-724-0624
You can also visit our website at [http:// www.colorcon.com/notox](http://www.colorcon.com/notox)

©BPSI Holdings LLC, 2014

The information contained in this document is proprietary to Colorcon Inc. and may not be used or disseminated inappropriately.

All trademarks, except where noted, are property of BPSI Holdings, LLC.

The information contained herein, to the best of Colorcon Inc.'s knowledge, is true and accurate. Any recommendations or suggestions of Colorcon Inc. with regard to the products provided by Colorcon Inc. are made without warranty, either implied or expressed, because of the variations in methods, conditions and equipment which may be used in commercially processing the products, and no such warranties are made for the suitability of the products for any applications that you may have disclosed. Colorcon Inc. shall not be liable for loss of profit or for incidental, special or consequential loss or damages. The information contained in this document is not intended as legal advice, and should not be relied upon for that purpose. Any regulatory information provided is intended solely as initial general guidance. Each customer is responsible for determining the regulatory acceptability of the use of the product in their specific application.