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*rja*



*dispersions, llc*

*Micro-Nano Conference*

*University of New Mexico*

*May 9, 2011*

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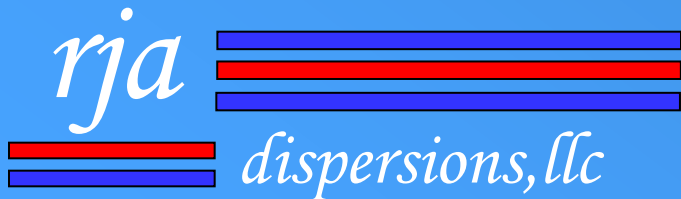
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*A Leader in Ultra-Fine Particle and Pigment Dispersions*

# Topics

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- Who are we
- Company's Technology
- Technical / Education Needs
- Future Glimpse

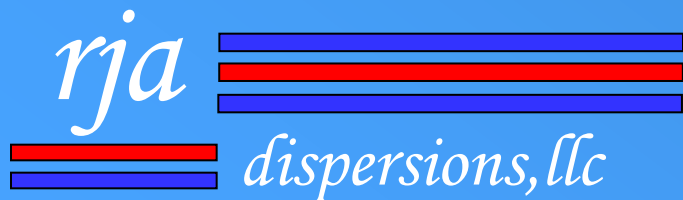


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# Who we are:

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- Founded in 2002, Located in Maplewood, MN
- Rapidly Growing. 2X plus each year.
- Custom development and manufacture of nano-particle pigment dispersions for major OEM accounts.
- We sell dispersions to manufacturers of inks.
- We don't make inks.
- Maintain high ethical and business standards
- Active contributing members to our industry and community.



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# Key Personnel

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- **Ronald R. Adkins, Ph.D., Vice President, R&D ---in the ink and related industry since 1971.**
  - FLINT INK
  - 3M COMMERCIAL GRAPHICS – DIVISION SCIENTIST
  - INVENTOR of 1<sup>st</sup> Solvent ink for Raster Graphics ARIZONA Printer
  - CAREER EXPERIENCE with UV CURABLE INK JET & other INKS
- **Joseph E. Ward, Ph. D., Vice President of Marketing—in the digital imaging business since 1980.**
  - 3M PRINTING & PUBLISHING – Digital Color Systems
  - 3M COMMERCIAL GRAPHICS - SCOTCHPRINT™ LAB HEAD
  - CAREER EXPERIENCE with DIGITAL PRINTING & BUSINESS DEVELOPMENT

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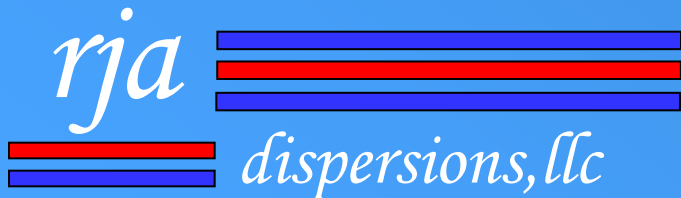
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# Primary Market: Digital Imaging

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- Think Advertising
- Think Signage
  - Buses,
  - Trucks,
  - Airplanes, Airports
  - Shopping Malls
  - Trade shows
  - Las Vegas, Orlando, Tokyo,...



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Panasonic

Panasonic

Part of the Team



962

東武 上野観光バス



*Southwest Airlines*

*B 737-700*



SPECIAL PROMOTIONS		SPECIAL VALUE MEALS		BURGERS		BREAKFAST	
1	2	3	4	5	6	1	2
WICKOFFER	DAL WICKOFFER	WICKOFFER DL.	WICKOFFER DL.	WICKOFFER DL.	WICKOFFER DL.	CROISSAN WICH	BISCUIT SANDWICH
2.49	2.49	1.99	1.99	1.99	1.99	1.99	1.99
3.99	3.99	3.99	3.99	3.99	3.99	1.99	1.99
4.99	4.99	4.99	4.99	4.99	4.99	1.99	1.99
5.99	5.99	5.99	5.99	5.99	5.99	1.99	1.99
6.99	6.99	6.99	6.99	6.99	6.99	1.99	1.99
7.99	7.99	7.99	7.99	7.99	7.99	1.99	1.99
8.99	8.99	8.99	8.99	8.99	8.99	1.99	1.99
9.99	9.99	9.99	9.99	9.99	9.99	1.99	1.99
10.99	10.99	10.99	10.99	10.99	10.99	1.99	1.99
11.99	11.99	11.99	11.99	11.99	11.99	1.99	1.99
12.99	12.99	12.99	12.99	12.99	12.99	1.99	1.99
13.99	13.99	13.99	13.99	13.99	13.99	1.99	1.99
14.99	14.99	14.99	14.99	14.99	14.99	1.99	1.99
15.99	15.99	15.99	15.99	15.99	15.99	1.99	1.99
16.99	16.99	16.99	16.99	16.99	16.99	1.99	1.99
17.99	17.99	17.99	17.99	17.99	17.99	1.99	1.99
18.99	18.99	18.99	18.99	18.99	18.99	1.99	1.99
19.99	19.99	19.99	19.99	19.99	19.99	1.99	1.99
20.99	20.99	20.99	20.99	20.99	20.99	1.99	1.99



always Coca-Cola

Taste Our New Flame-Broiled Classics

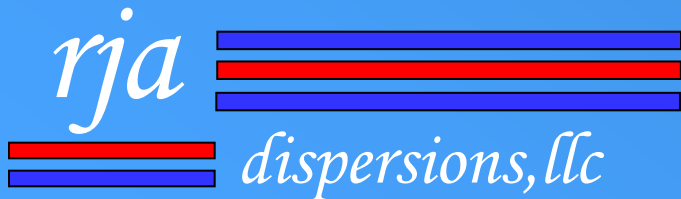
Order Fresh To Go



# Company's Technology

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- We manufacture “hi-tech” colorants:
- Pigment Dispersions
  - Non-fading pigment chemistries
  - “Nano” particle size (100-200nm)
  - Strong color gamut
  - Filtration Friendly – no larger particles.
  - Stability (environment and shelf life)
  - Suitable viscosity for jetting
  - Readily formulated into inks
    - “just stir it in”

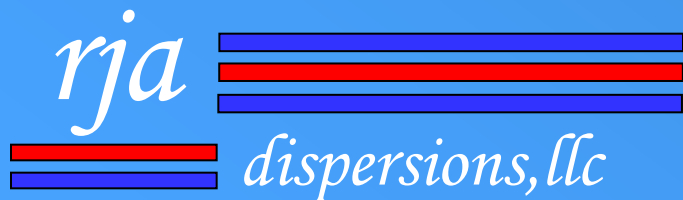


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# UV Curable “The New Green”

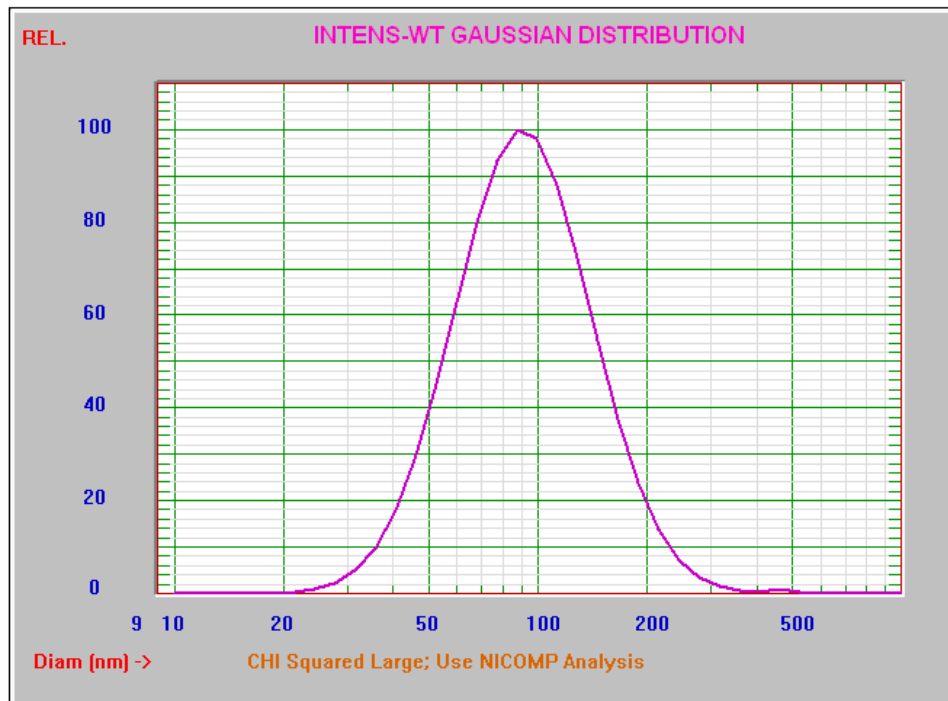
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- 100% Solids / minimal VOCs
  - “instant dry” with no solvent smell in shop.
- Printing on rigid substrates
  - Direct to Sign substrates (plastic, metal, wood)
    - Film optional.
    - No mounting, laminating labor and expense
    - Adhesion, Flexibility, Durability.
- Industry Ink Jet printers are rapidly converting to uv curable inks.
- Ink manufacturers offering broad range of uv curable technology



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# D3410M 25% in Monomer



Solid Particle

Run Time

hr:min:sec

0: 1:33

Chi Squared

3.40

Auto B.Adj.

0.00 %

Ch.1 Data

X1000

118

Z-Average

Diff. Coeff.

cm<sup>2</sup>/sec

2.00e-008

d3410m11-92(17).1

Mean Diam.(nm)	Coeff. of Var'n.	Std. Dev.(nm)	Norm. Std. Dev.	Variance (P.I.)
99.5	0.431	42.885	0.431	0.186

Printout ID: D3410M 11-92 (17) 25%M IN SR9003IJ

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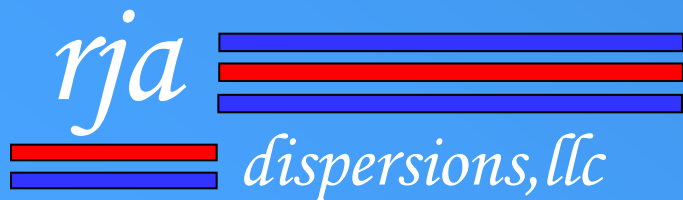
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# *RJA's Business Model*

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- Offer customized; cost-effective dispersions
  - Slurries in monomer for uv curable inks
  - Water and solvent based pigment dispersions
- Sold To OEM formulators of inks.
  - “Our customers make the inks”
  - “We don’t compete with our customers”

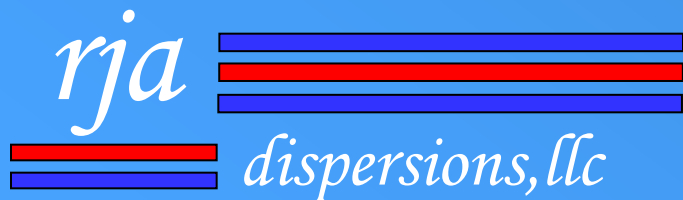


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# *Business Growth*

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- Sales for 2010 were more than double 2009 even in the difficult economy.
- Project growth of 10+ employees by 2012.
- New Business Location in Hudson WI.
  - 3x Space, Ample power, welcoming business climate.
  - Adding New equipment – capacity.
  - Production, Lab, and Office space.

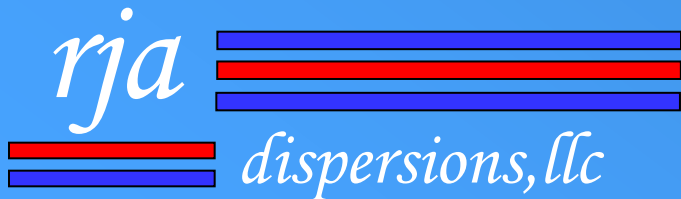


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# *Technical / Education Needs*

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- Production
- Quality Assurance
- R&D



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# *Production*

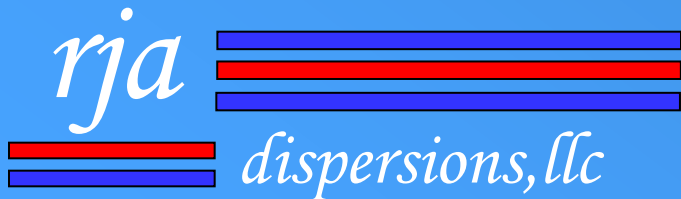
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- Measure out (with precision) and add ingredients per formulas.
- Add to milling equipment per process instructions.
- Drain and fill containers when batches complete.
- Package and ship product
- Clean and prepare machines for next batch.

# Quality Assurance

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- Perform and document batch analysis on materials to assure conformance with specifications.
  - Particle Size, viscosity, color, filtration
- Perform and document product aging studies to assure long term stability and performance.
- Benchmark performance with competitive products.

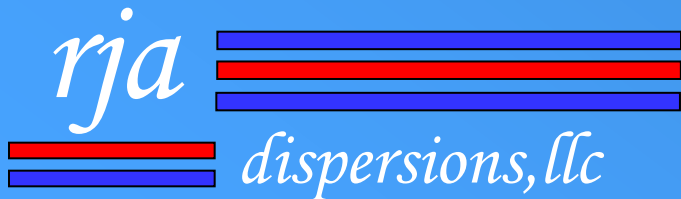


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# *Research - Development*

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- Develop and enhance products offered.
  - Prepare samples per customer requests
  - Perform analysis & studies on developmental formulas, including field testing.
  - Document procedures for product scale-up



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# Observations & Tips

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- Job descriptions can be fluid in small companies. Be prepared to do “whatever it takes” for the company to succeed. (“Can do” attitude wins)
- Be willing to accept “part time” or “flexible” working hours and tasks to accommodate the needs of a growing business. (No such thing as “it ain’t my job”)
- Be highly competent, make your self “invaluable” and good things will follow.

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# “Future Glimpse”

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- Nano Particle Dispersions Capability
  - Electronically active materials
    - Solar Energy, Flexible displays,...
  - Polymer properties
    - Conductives, dielectrics, controlled mechanical properties.
  - Open to medical applications
  - Looking for new applications & partners.

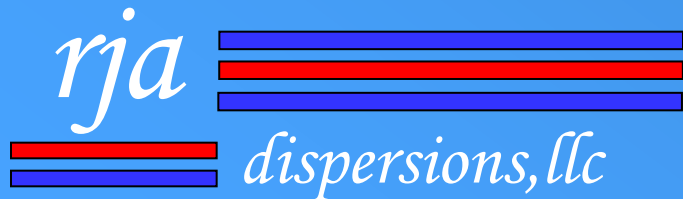
# *RJA Dispersions, LLC*

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2745 Harvey Street  
Hudson, Wisconsin 54016  
715-808-0172

Fax: 715-808-0474

Contact: Joseph Ward, VP Marketing  
[jeward@rjadispersions.com](mailto:jeward@rjadispersions.com)  
[www.rjadispersions.com](http://www.rjadispersions.com)



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