



# PRINTING INKS

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**National Association of Printing Ink Manufacturers**

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# Printing Ink Industry

## Market Overview

## Manufacturing Processes/Unit Operations



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# Printing Ink Industry -Market Segments-

Commercial

Packaging



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# Printing Ink Industry -Basic Ink Types-

Lithographic

Flexographic

Gravure

Digital

Newsink

Letterpress



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# Printing Ink Industry -Example Formulations-

## Waterbased Flexographic Ink

Component	Percent in formulation
50% Phthalocyanine Blue water paste (C.I. Pigment Blue 15)	24.7
Acrylic emulsion	50.0
Water	20.0
Polyethylene wax compound	3.0
Monoethyleamine	2.0
Organic defoamer	0.3



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# Printing Ink Industry -Example Formulations- Lithographic Ink

Component	Percent in formulation
50% Phthalocyanine Blue water paste (C.I. Pigment Blue 15)	18.0
Extender (White pigment)	5.0
Varnish	50.0
Soya oil	25.0
Additives	2.0



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# Printing Ink Industry -Example Formulations- Gravure Ink

Component	Percent in formulation
50% Phthalocyanine Blue water paste (C.I. Pigment Blue 15)	10.0
Co-Solvent Polyamide	22.0
Nitrocellulose	3.0
PE Wax	1.0
Isopropanol	12.0
Toluene	37.0
Isopropyl Acetate	38.0
Ethanol	7.0



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# Printing Ink Industry

-Manufacturing Processes/Unit Operations-

Weighing

Mixing

Milling

Filtering



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# Printing Ink Industry

## -Manufacturing Processes/Unit Operations-

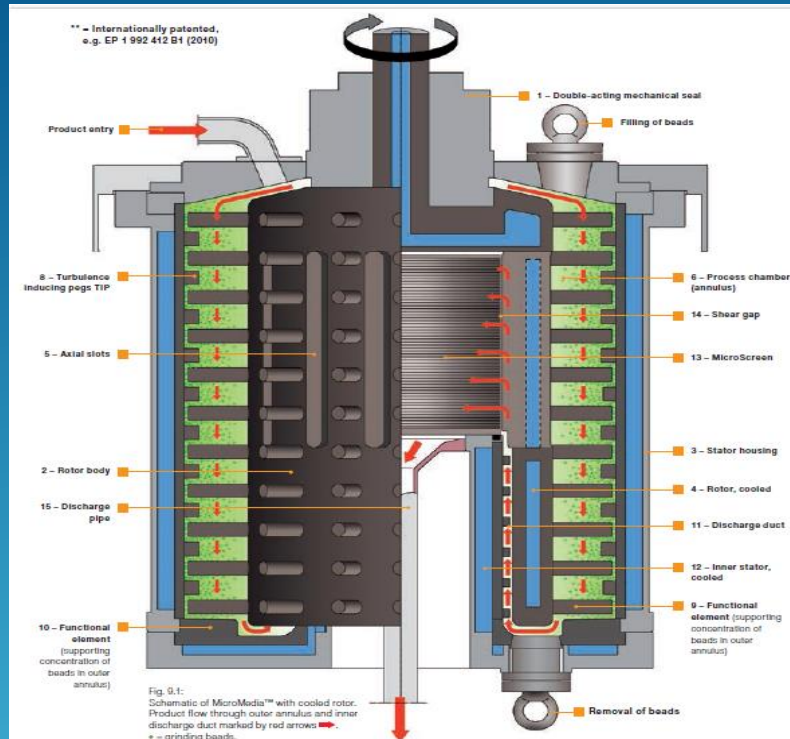


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# Printing Ink Industry

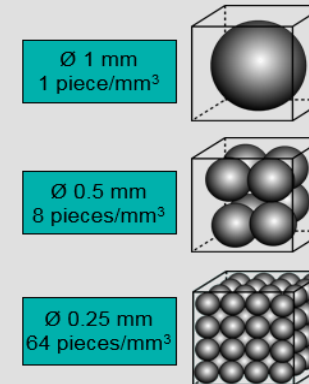
## -Manufacturing Processes/Unit Operations-



Number of Grinding Beads per Liter  
Grinding Chamber Volume

**NETZSCH**

Bead size (mm)	Number of beads (piece/l)
10	1,000
1	1,000,000
0.1	1,000,000,000
0.05	8,000,000,000



$$\text{Number} \uparrow \propto \left( \frac{d_{GM,large}}{d_{GM,small}} \right)^3$$



# Printing Ink Industry

-Health, Safety, Environmental Impact, Sustainability-

## EHS

Fed RCRA Hazardous

OSHA Hazard Communication

## Sustainability

Waterbased Formulations

Bio/Renewable Components

Impact on Compostability/Biodegradation



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# Printing Ink Industry

-Current Legislative/Regulatory Concerns-

## Legislative

Postal Service Reform

Tax Reform

## Regulatory

Food Packaging Safety

TSCA (LCSA2016)



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Thanks for Listening!

Questions?



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