Link to ink
The combined ink know how

Attraction of water-based inks and coatings

German Paint and
Printing Ink Association (VdL)

Overview

1. History of water-based inks and coatings
2. Overview market share water-based inks and coatings
3. Composition of water-based vs. solvent-based systems
4. Printing technologies and applications
5. Advantages and strengths of water-based inks
6. Switch from solvent to water-based systems: What to take into account
7. Summary and outlook

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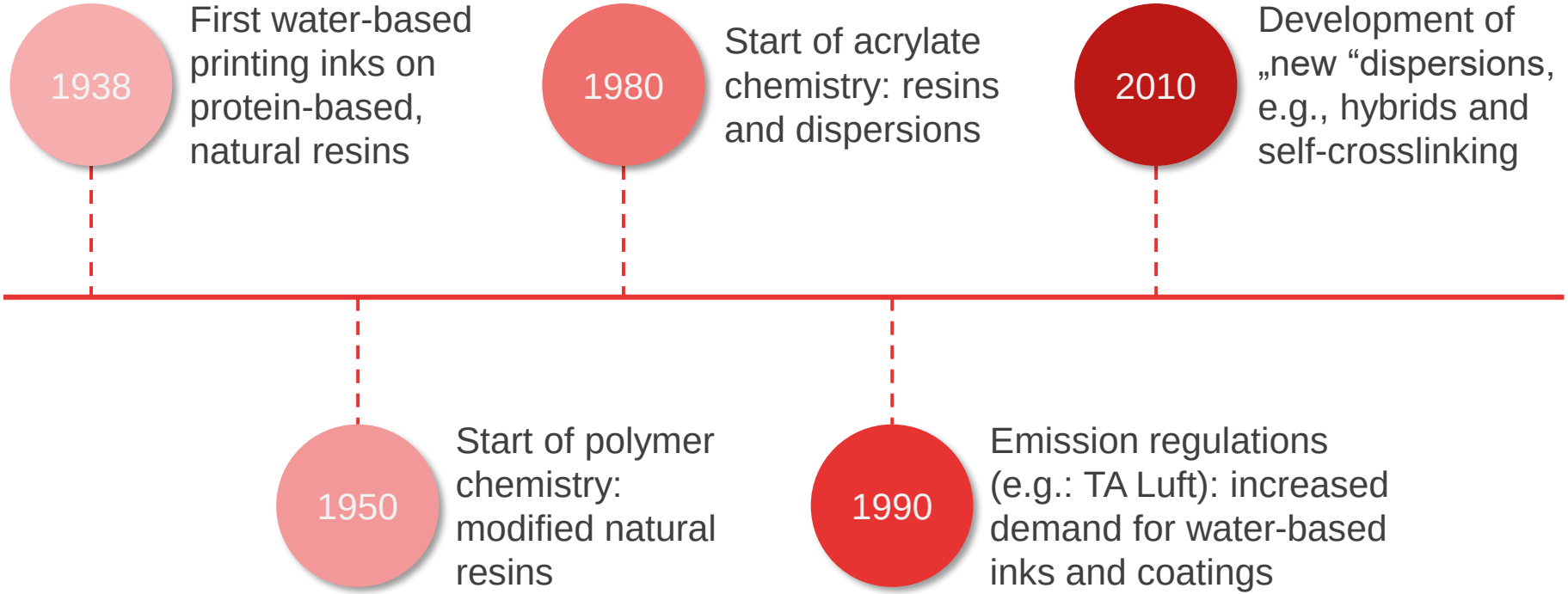
History of water-based inks and coatings



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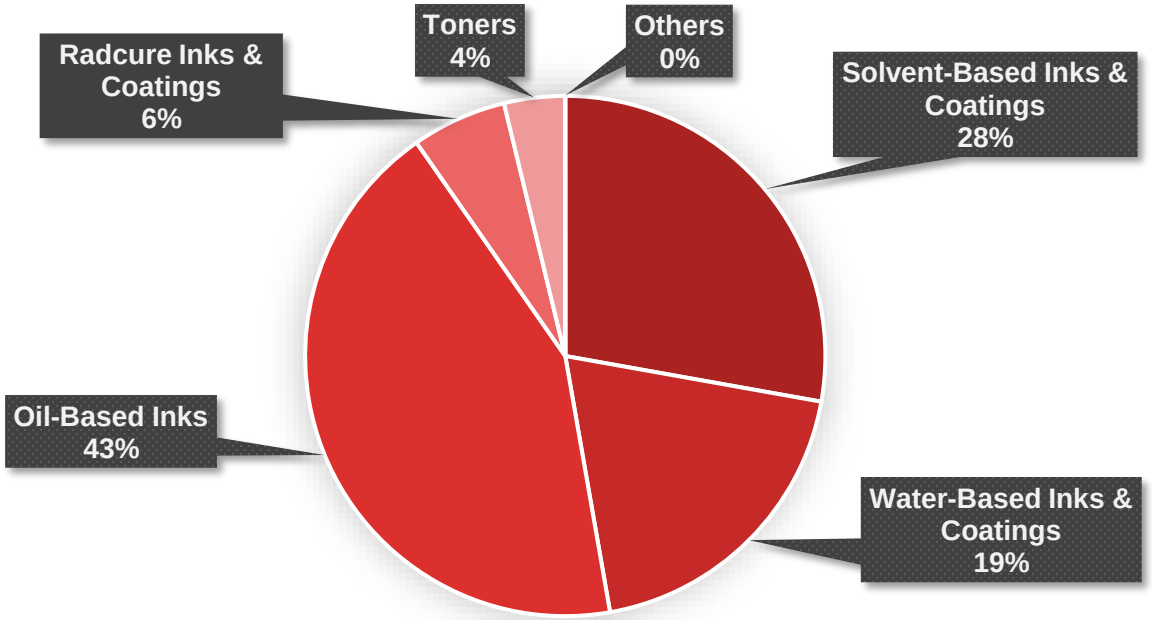
Global Market share water-based Inks & Coatings Volume

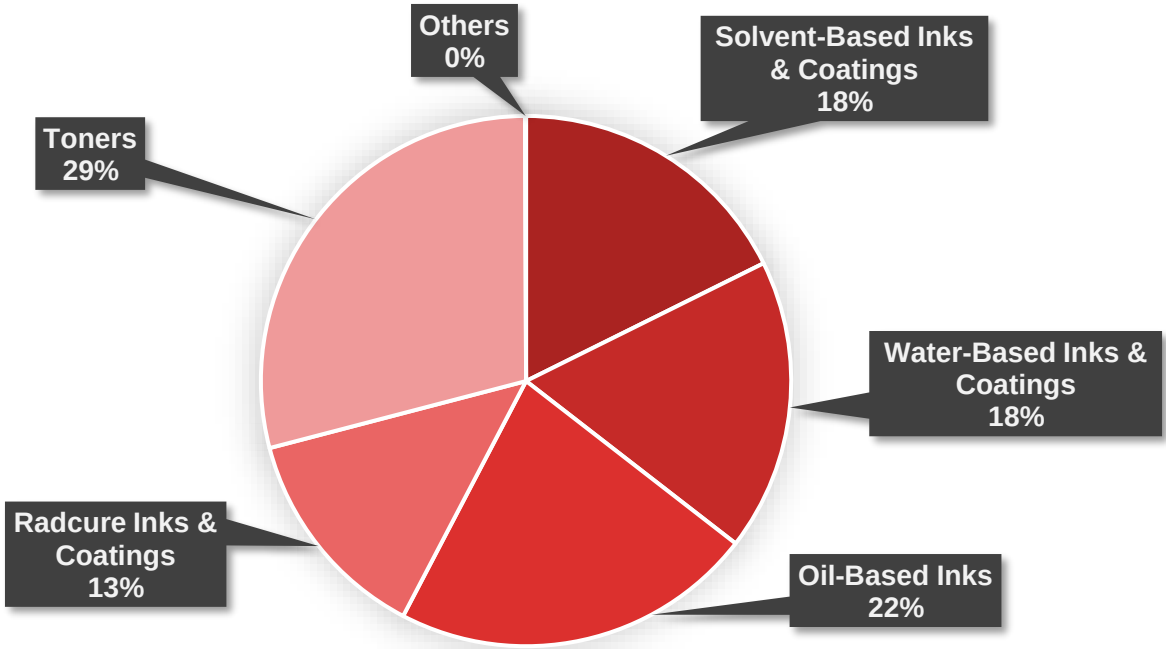
Global Ink Consumption by type 2018 (Volume in %)



Source: PIRA_2019_The Future of Global Ink Markets to 2023

Global Market share water-based Inks & Coatings Volume

Global ink Consumption by type 2018 (Value in %)



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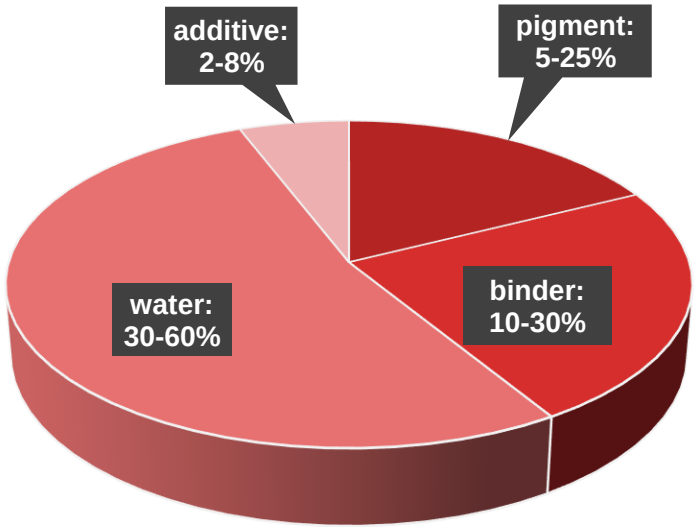
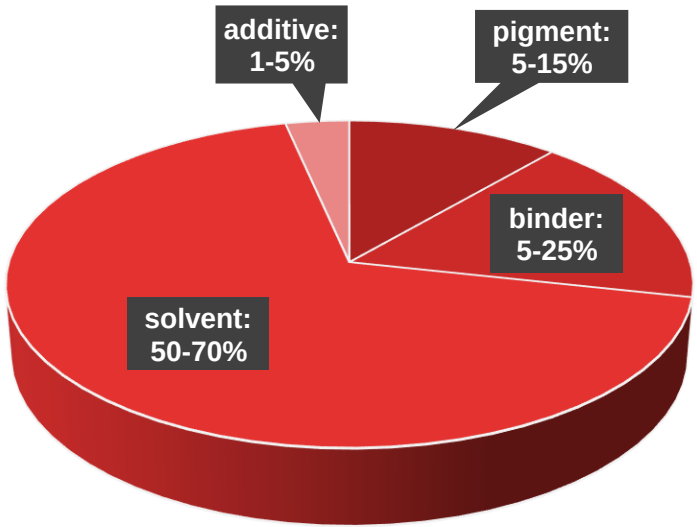
Composition of water-based vs. solvent-based systems

WATER-BASED SYSTEMS



SOLVENT-BASED SYSTEMS



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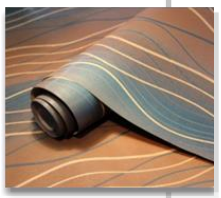
Rotogravure – Application & Product Range

- **Gift wrapper**
- **Decor Printing**
  - Laminate/floor-covering
  - Furniture foils
- **Wallpaper**
  - Vinyl
  - Paper/Non-Woven



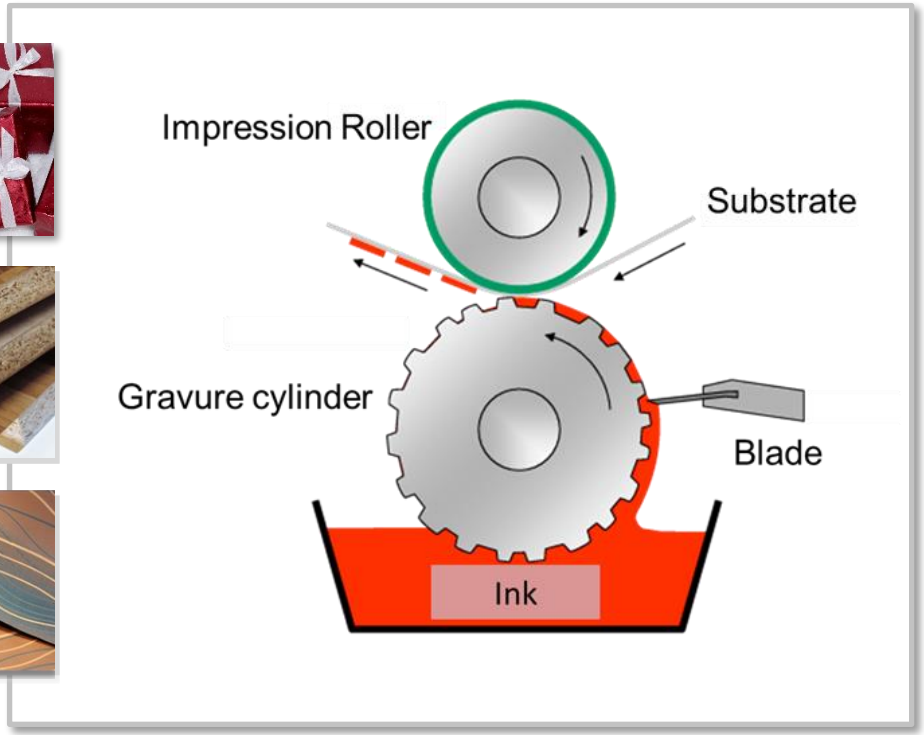


Image sources: hubergroup; Follmann GmbH; Pixabay

Flexography – Application & Product Range

- **Corrugated board**
  - Pre-/Post-Print
- **Paper**
  - Bakery bags
  - Paper bags
  - Newspaper
- **Tissue**
  - Napkins
  - Kitchen towels
  - Toilette paper

- **Film & Foil**
  - Flexible Packaging
  - Plastic bags

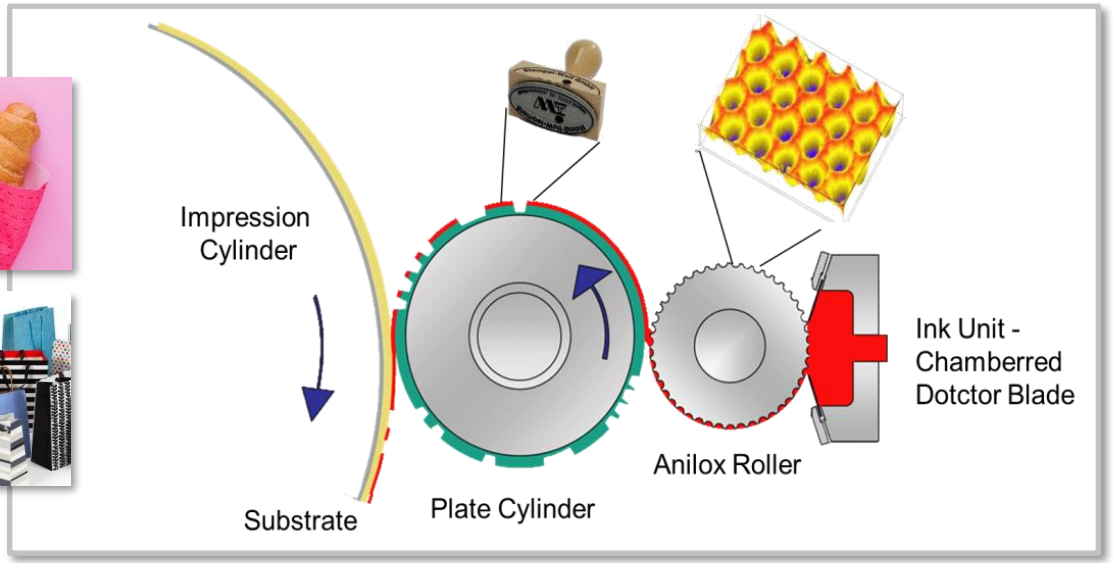


Image sources: hubergroup; Adobe Stock

Inkjet – Application & Product Range

- **Paper / Board / Corrugated**
- **Labels**
- **Wood**
- **Textile / Banner**
- **PVC / Vinyl**
- **Foils**
- **…**

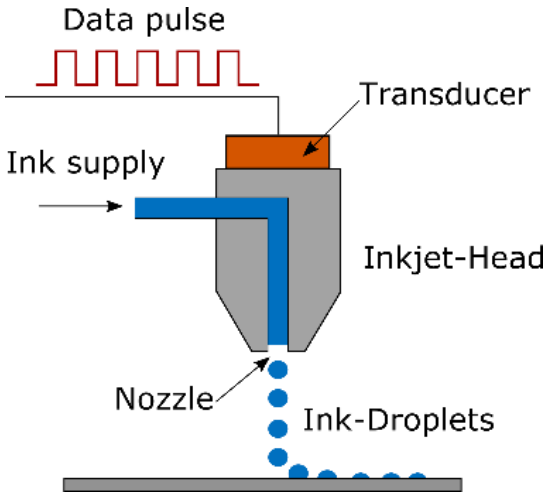


Image sources: Siegwerk; hubergroup

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Water-based Inks: Advantages

- **Absorbent substrates**
  - High printing speed, excellent runnability
  - Good chemical resistance
  - High cost efficiency
  - Can be printed in combination with other ink systems and print technologies (e.g. Varnishes)
- **Non absorbent substrates**
  - In many applications equal to solvent-based inks
    - Runnability and printing speed
    - Bond strength and resistances
  - High colour strength

Water-based Inks: Advantages

- **Low VOC content**
  - No explosion risk
  - No exhaust air treatment necessary
  - No monitoring of employees‘ exposition to solvent necessary
  - No exceeding of residue solvent limits
  - Low migration potential
- **Cost effectiveness**
  - Lower investment costs
  - Lower consumption
  - Lower insurance fees
  - Longer printing plate life times

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Change to water-based Inks

- Changing from solvent based to water-based inks is a technology change
  - Working procedures have to be adjusted
  - Ink should not get dry in printing units (machine troubles, breaks, …)
  - Qualitative leaps by selection of most suitable printing plates and anilox rollers
  - Low foaming through suitable pump technology and right arrangement of pipes and tubes
  - Drying air volume more relevant than drying temperature, high proportion of fresh air advantageous
  - prevent contamination and waste by observing hygiene rules
  - Corona treatment of unpolar substrates is very important

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Summary and Outlook

- ✓ Water-based inks are in accordance with EuPIA Exclusion Policy and can fulfil regulatory requirements for food packaging if necessary.
- ✓ Main applications are flexo, gravure and digital (inkjet) printing with a large product range including laminated food packaging.
- ✓ There is a clear trend to water-based inkjet- as well and flexo-Inks visible, as printing-quality with water-based inks is as good as with conventional solvent-based inks.
- ✓ For gravure-printing there is no clear trend recognizable to switch from solvent-based inks to water-based inks, as the printing-quality and yield are not yet at the same level.
- ✓ Water-based inks offer a positive environmental profile.
- ✓ Total cost profile of water-based inks is competitive

Thank you for your attention!

Sector Group Printing Inks

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