

# High Quality Flexo Printing and Expanded Color Gamut

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# Agenda

- HD flexo printing – what is it about?

- Changing requirements for printing inks

- Siegwerk's latest developments for flexo printing

- Expanded Color Gamut (ECG) – Advantages and Requirements



# From image to imagination – latest ink developments for HD flexo printing

Standard  
Flexo

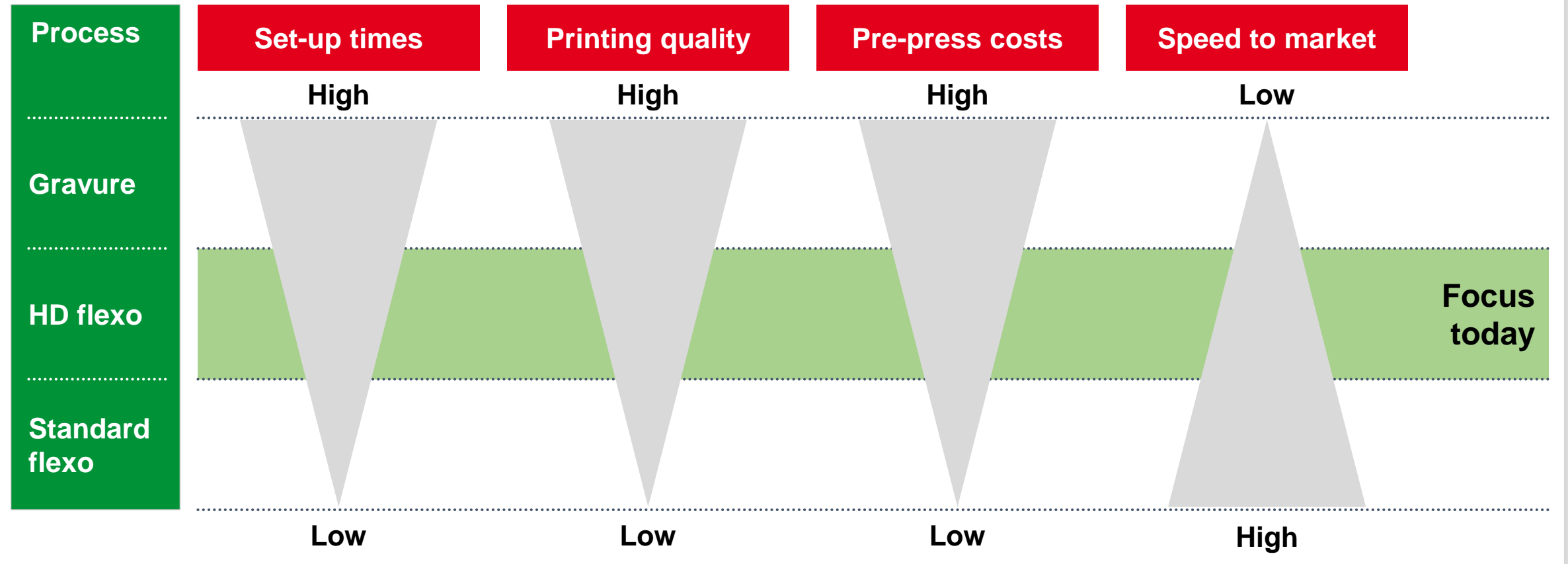


HD  
Flexo

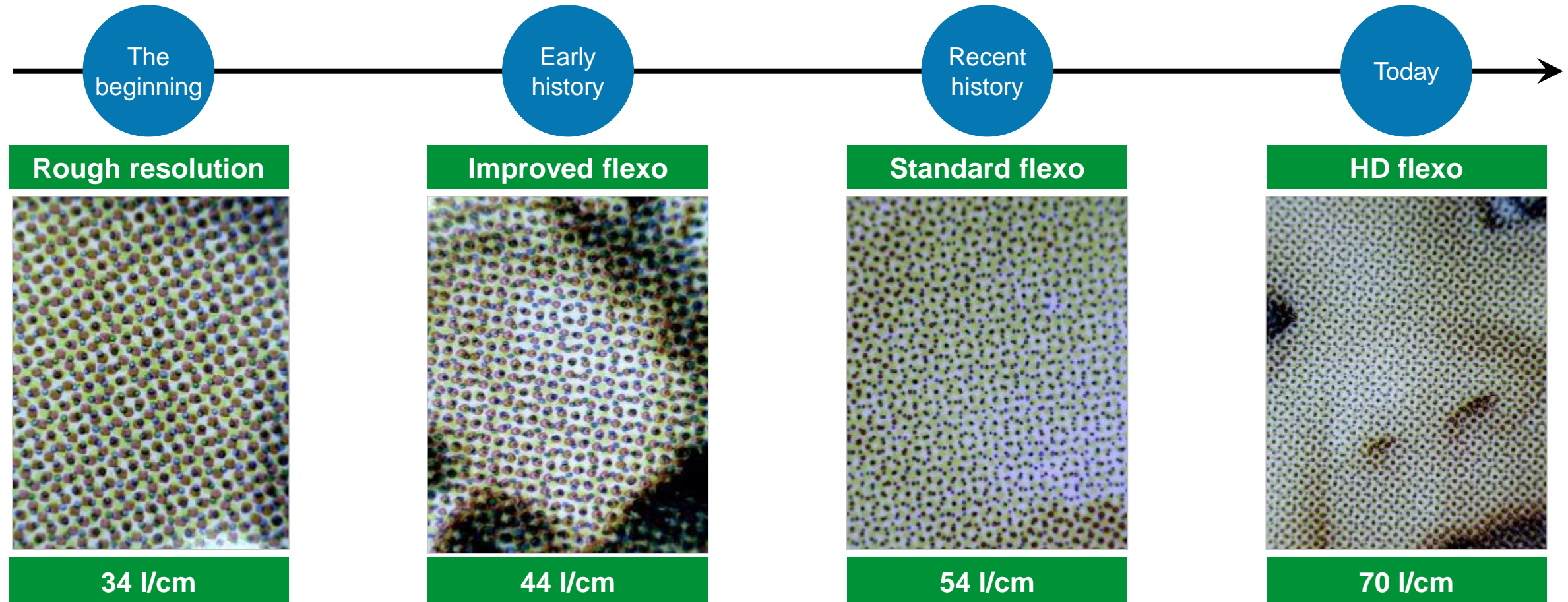


# Why is the flexible packaging market looking for modern HD flexo printing technology?

## Comparison of printing technologies



# Over the last decades flexo printing evolved in quality



Today, HD flexo printing can reach qualities equal or similar as gravure technology



# HD flexo printing requires the printer to balance several machine, material and process elements

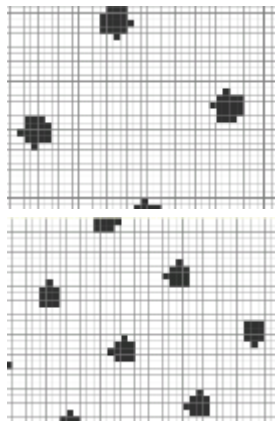


## When going high-definition flexo printing ...

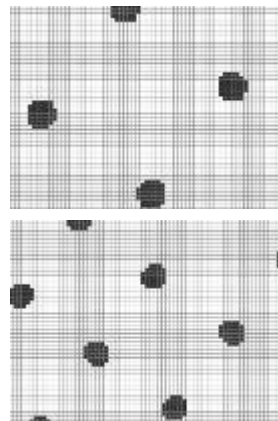
### Common technical description:

- Line screen of 320 to 600 l/cm in anilox roller
- High resolutions up to 4000 dpi on printing plate
- Plate technology either round-top or flat-top dot
- Micro-celling in solid areas

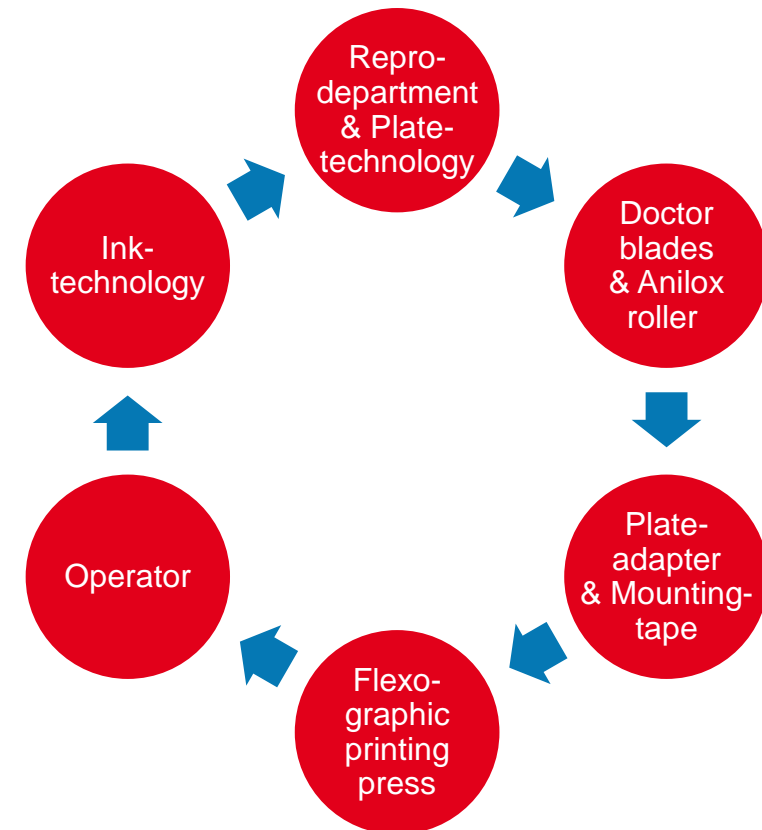
2540 dpi



4000 dpi



## ... many different set-up factors need to be well controlled



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# The new HD flexo process changes expectations on appropriate printing inks

## What drives ink adoption for HD flexo printing?

- Plate dots become very small in HD flexo
- Therefore, significantly smaller anilox cells required
- Leading to very small ink volume per cell ( $< 3 \text{ ccm/m}^2$ )
- Resulting in thinner ink film on substrates
- Still, equally high printing speed demanded

## Ink formula needs change to achieve

- Higher color strength
- Adjusted rheology
- Sufficient rub resistance
- Slower drying speed



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# Siegwerk offering high performance solutions for HD flexo printing



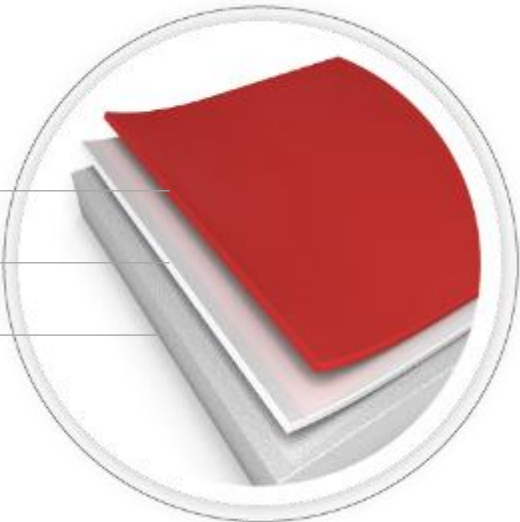
- ✓ Siegwerk HD flexo solutions with
  - High color strength
  - Good half-tone printability
  - Excellent drying speed
  - Clean printing performance
  - Low dot gain
- ✓ Broad range of fit-for-purpose solutions available for different applications
- ✓ Dedicated product toolbox developed for HD flexo printing



# Solution example: Surface printed frozen food bag

## Packaging Structure

Color ink  
White ink  
PE



## Solution Description

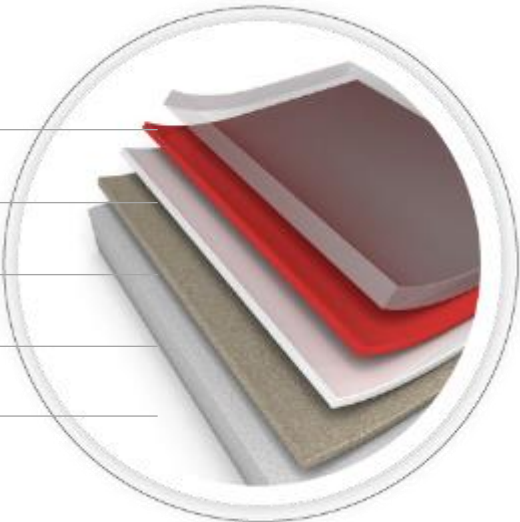
<b>Application</b>	Filling goods Key functionality Circularity	<ul style="list-style-type: none"><li>• Vegetables, fruits, fish, convenience food, etc.</li><li>• Achieve high crinkle resistance under wet and frozen conditions</li><li>• Recyclable mono-material structure</li></ul>
<b>Siegwerk solution</b>	Color ink White ink	<ul style="list-style-type: none"><li>• NC</li><li>• PA</li></ul>
<b>Printing</b>	Process Type	<ul style="list-style-type: none"><li>• Flexographic</li><li>• Surface print</li></ul>



# Solution example: Laminate for dry Pet food

## Packaging Structure

MOPE  
Color ink  
White ink  
Adhesive  
MOPE



## Solution Description

<b>Application</b>	Filling goods Key functionality Circularity	<ul style="list-style-type: none"><li>• Pet food, dry food etc.</li><li>• High bond strength, low residual solvents and high printing speed</li><li>• Recyclable mono-material structure</li></ul>
<b>Siegwerk solution</b>	Color ink White ink	<ul style="list-style-type: none"><li>• NC / PU or Full PU</li><li>• PU</li></ul>
<b>Printing</b>	Process Type	<ul style="list-style-type: none"><li>• Flexographic</li><li>• Reverse print</li></ul>



# Why work with Siegwerk in HD flexo printing?



## **EXPERTISE**

Long-lasting experience in flexo printing for packaging and dedicated expert teams



## **SOLUTIONS**

Broad range of performance solutions for your applications



## **INK TECHNOLOGY**

Market-proven solutions and products for many years



## **MARKET PARTNERSHIPS**

Excellent collaboration with market partners: machines, plates, anilox, etc.



## **PRODUCT SAFETY**

Outstanding solution in all ink technologies for flexo printing: SB, WB, and UV



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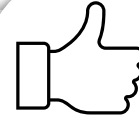
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# ECG offers efficiency gains, using fixed color shade sets



- Using fixed color shade sets of 5,6 or 7 inks instead of process inks + spot colors offers
- Reduced wash-ups & less set-up time
- Reduced material waste
- Less inventory of spot color inks
- Press capacity gains
- Enhanced graphic images (CMYK gamut = 54% of color space → CMYKOGV gamut = 89% of color space)



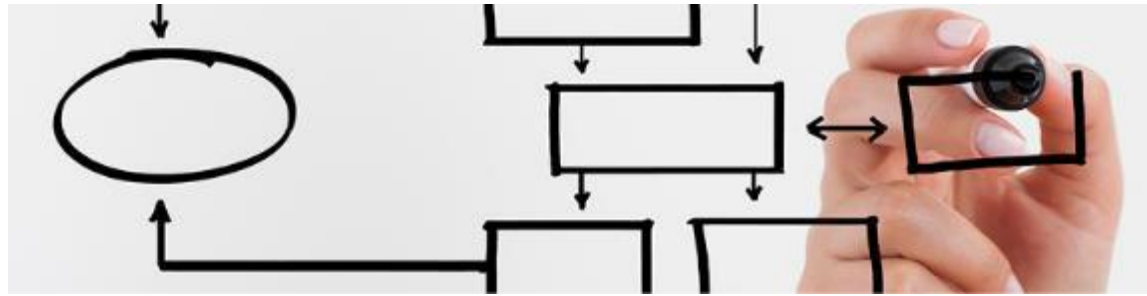
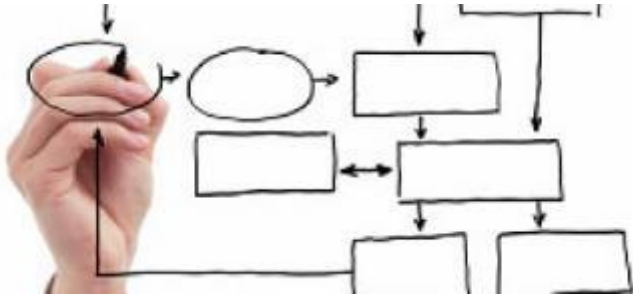
CMYK



CMYK +  
O'G'V'



# ECG requires suitable job profile and high level standardisation



- Comprehensive implementation, testing and validation required
- Tighter process control is required:
  - Press
  - Anilox roller
  - Plate
  - Ink
  - Environment (air condition)
- Highest efficiency only with fully loaded press of
  - One specific print structure and/or
  - One type of jobs of brand



## ECG: what needs to be further considered?

- Higher ink coverage depending on color shade and repro
- Limitations for fine text printing and metallic



C+Y

C+Y+G

The image shows a sample of text printed in white on a solid red background. The text is in a bold, sans-serif font and is arranged in six lines. The text is: 'Vitamine: Vitamin C, Vitamin E, Calcumpo', 'Vitamin B2, Vitamin B', 'Biotin, Vitamin K1, Vi', 'natürliche Aromastoff', and 'saffkonzentrat versch'. The text is slightly blurred, illustrating the limitations of fine text printing.

We guide you to efficient & safe performance

