

Alcohol-free printing

in heatset web offset

Alcohol reduced printing has been the standard in heatset printing for several years. Thanks to new press technologies, modern measuring and metering units, special fountain solution additives and modified dampening rollers, the majority of heatset printers achieve satisfactory results with IPA concentrations of less than 6% in their fountain solutions. But the trend goes on. Today, it is possible to dispense entirely with IPA and still achieve reliable results. Many printing firms are now doing just that – without sacrificing quality. In fact, the practice yields advantages in some cases.

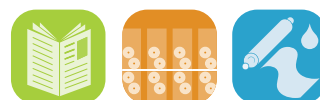
Isopropyl alcohol (IPA) performs important functions in the offset printing process. By increasing fountain solution viscosity, it also increases the volume of fountain solution conveyed by the fountain system at the same ductor roller speed. The dynamic surface tension of the fountain solution is reduced, resulting in complete wetting of the printing plate even at high printing speeds and with low fountain solution volumes. At the same time, IPA acts as an emulsifier and supports the absorption of fountain solution into the printing ink. This is not always desirable, however, as emulsification expands the dampening range, on the one hand, while a high fountain solution concentration in the ink results in a loss of brilliance in the print product and slower drying.

Other properties, such as high vapor pressure and rapid evaporation as well as the biocidic effect of IPA in the fountain solution circulation system, are worthy of note as well.



If no IPA is added to the fountain solution, other components must assume the functions otherwise performed by alcohol. Fountain solution additives, dampening rollers and blankets play particularly important roles in this context.

Special fountain solution additives for low-IPA or IPA-free printing contain substances which replace the alcohol and perform some of its functions. Special dampening rollers are capable of enhancing fountain solution transport and thus conveying the same quantity of solution even at a lower viscosity. Furthermore, specially designed dampening form rollers can support emulsification with the printing ink. Special coatings on water pan rollers and/or dampening metering rollers can also even out the transported fountain solution film and protect the rollers against the adverse chemical effects of new fountain solution additives.



Dampening roller compounds for reduced-alcohol and alcohol-free printing

Böttcher has developed a number of different compounds with specific properties in order to meet the requirements of low-IPA and IPA-free printing applications

1. Water pan and Dampening metering rollers:

Compound 244 30:

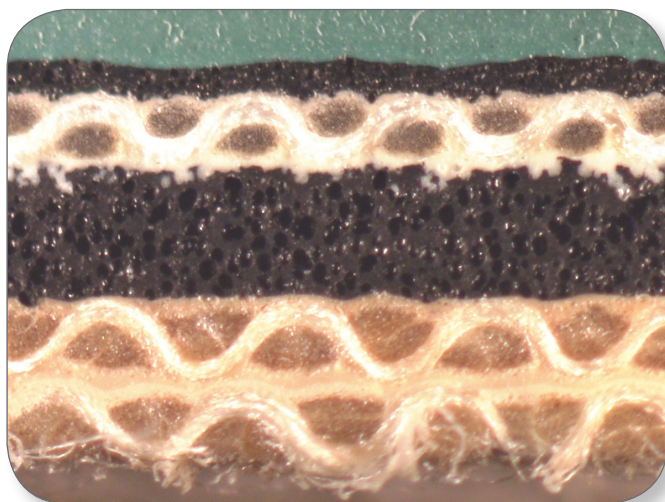
This compound has proven suitable for low-IPA and IPA-free operations. High transfer volume with uniform, stable transfer characteristics. Very low ink feedback.

Compounds 148 25 / 249 30 :

The compounds with hardness of 25 and 30 Shore A ensure high fountain transfer volumes and good dampening properties as well as very good chemical resistance to fountain solution additives and alcohol substitutes in IPA-reduced and IPA-free printing operations.

Compound ProAqualis 128 25:

A specially coated dampening roller which is totally resistant to radial swelling. Very good release properties, easy to clean. For a uniform fountain solution film and extraordinarily long service life. Suitable for all fountain solutions.



BöttcherTop Twin series with two compressible layers



2. Dampening form rollers:

Compounds 111 25 / 144 25:

These compounds have proven suitability for the dampening form position and exhibit good chemical resistance to heatset inks. Low heat build-up during use thanks to their dynamic properties ensure stable printing conditions in modern high-speed presses.

Printing blankets for low-alcohol printing

Böttcher has applied the experience gained with roller compounds to printing blankets. With the **BöttcherTop 7300 Twin** and **BöttcherTop 7500 Twin** rubber compounds, Böttcher offers blankets in different gauge for heatset printers. The especially hydrophilic surface of these blankets supports alcohol reduction.

Fountain solution for IPA-free heatset printing

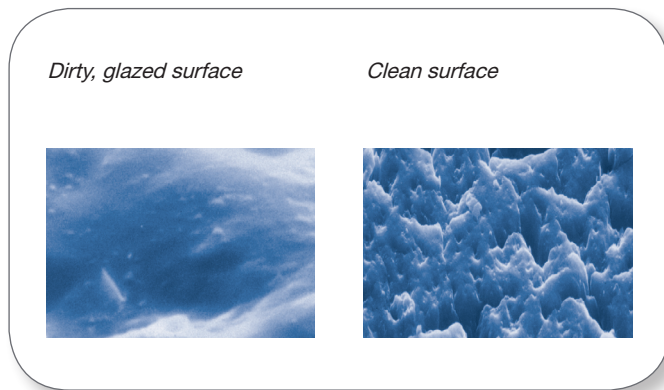
The **BöttcherFount H2003 4.8** fountain solution additive was developed specifically for IPA-free heatset printing applications. This additive is corrosion-inhibited and meets the approval criteria applied by press manufacturers.

Several versions adapted to different water qualities are available. This fountain solution additive is suitable for all press types. One outstanding feature is reduced ink feedback, which means that the fountain solution stays clean for a much longer period of time.

Dampening roller cleaning

Ink residues may accumulate on water pan and dampening metering rollers, often in combination with ink feedback to the fountain solution. This is a frequent problem in IPA-free printing.

Böttcher has developed **Böttcherin FR-1000**, a special cleaner for dampening rollers. It exhibits very strong ink-dissolving power but contains no aggressive components, such as aromates or acetone. The hydrophilic roller surface is preserved after thorough cleaning and supports trouble-free restarts.



Roller care and maintenance

A clean surface is an absolute prerequisite for optimum ink transport and emulsification of fountain solution with the ink. Therefore, rollers must be cleaned regularly to remove undesirable deposits, accumulated paper coating residues and other accumulations.

BöttcherPro Calciumfix ensures effective, non-invasive removal of calcium and paper coating deposits.

All other deposits can be removed completely with **BöttcherPro Cleanfix**.

The result is a clean roller surface which retains its original roughness.

Harmonious interplay of products

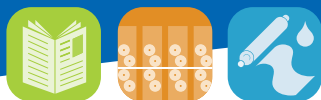
Success is achievable in alcohol-free printing only through the harmonious interplay of all products.

Interaction between chemicals can result in swelling in rollers and blankets and must therefore be prevented in order to ensure trouble-free printing.

Böttcher offers a complete range of rollers, printing blankets and printing chemicals. These products are matched in such a way as to ensure that negative interaction is prevented.

Recommended preparations for alcohol-free printing

- Precise metering of fountain solution additive
- Assurance of constant water quality
- Treatment of water through reverse osmosis and hardening with **BöttcherPro Calcit**, if necessary
- Exact adjustment of printing rollers
- Regular cleaning and maintenance of rollers
- Fountain solution changes at regular intervals



Systems ►► Web Offset

FB Köln

Felix Böttcher GmbH & Co. KG
Stolberger Str. 351 - 353, 50933 Köln
Phone: +49 (0) 221 4907 1
Fax: +49 (0) 221 4907 435
koeln@boettcher-systems.com

Gelsdorf (Compounding)

Böttcher Gelsdorf GmbH & Co. KG
Max-Planck-Str. Straße 2 - 6, 53501 Graftschaff
Phone: +49 (0) 2225 92 31 0
Fax: +49 (0) 2225 92 31 22
gelsdorf@boettcher-systems.com

Gelsdorf (Handrails)

Böttcher Gelsdorf GmbH & Co. KG
Max-Planck-Str. Straße 2 - 6, 53501 Graftschaff
Phone: +49 (0) 2225 92 32 0
Fax: +49 (0) 2225 92 32 49 / 51
gelsdorf@boettcher-systems.com

KB Bergheim

KB Roller Tech Kopierwalzen GmbH
Zum Frenser Feld 2, 50127 Bergheim
Phone: +49 (0) 2273 942 0
Fax: +49 (0) 2273 942 129
info@kbrt.de

Argentina

Böttcher Sudamérica S.A.
1629 Pilar, Buenos Aires
Phone: +54 (0) 2322 46 62 00
Fax: +54 (0) 2322 49 63 51
aschwald@boettcher-systems.com.ar

Australia

Böttcher Australia Pty Ltd.
Castle Hill, NSW 2154, Sydney
Phone: +61 (0) 2 96 59 27 22
Fax: +61 (0) 2 96 59 27 44
info@boettcher.com.au

Austria

Böttcher Österreich GmbH
2353 Guntramsdorf, Austria
Phone: +43 (0) 2236 86 07 01
Fax: +43 (0) 2236 86 07 01 50
office@boettcher.at

Baltic States

UAB Böttcher Balticum
Radmēs g. 3 B, 82142 Radviliškis
Phone: +370 (0) 42 25 05 38
Fax: +370 (0) 42 25 05 38
bottcher@bottcher.lt

Brazil

Böttcher do Brasil Ltda.
Pari - São Paulo - SP
ZIP: 03010-000
Phone: +55 11 26 18 18 66
Fax: +55 11 26 18 18 66
fabio@bottcherdobrasil.com.br

Canada

Böttcher Canada Limited
Mississauga, Ontario L4T 1G3
Phone: +1 905 612 07 38
Fax: +1 905 612 81 27
bob.nixon@boettcher-systems.com

China

Böttcher Printing Equipment (Suzhou) Co., Ltd.
215200 Wujiang, Suzhou, Jiangsu Province
Phone: +86 (0) 512 63 40 71 00
Fax: +86 (0) 512 63 40 75 57
suzhou@boettcher-systems.com

Czech Republic

Böttcher CR. k.s.
68201 Vyškov
Phone: +420 (0) 517 32 65 11
Fax: +420 (0) 517 34 17 18
bottcher@bottcher.cz

France

Böttcher France S.A.R.L.
77542 Savigny-Le-Temple Cedex
Phone: +33 (0) 1 64 10 50 50
Fax: +33 (0) 1 64 41 08 90
info@boettcher-france.com

Finland

Böttcher Finland OY
00710 Helsinki
Phone: +358 938 781 88
Fax: +358 938 737 21
kauko.ruuska@boettcher-systems.com

Great Britain

Böttcher UK Ltd.
UK Head Office and Manufacturing
Ebbw Vale, Gwent NP23 5AE
Phone: +44 (0) 14 95 35 03 00
Fax: +44 (0) 14 95 35 00 64
salesandservices@boettcher-systems.com

Great Britain

Böttcher UK Ltd.
UK Sales Service Centre and Chemical Manufacturing
Clitheroe, Lancashire, BB7 1QU
Phone: +44 12 00 42 53 00
Fax: +44 12 00 42 61 78
salesandservices@boettcher-systems.com

Hong Kong

Böttcher Hong Kong Ltd.
Kwun Tong Kowloon
Phone: +85 2 23 41 91 11
Fax: +85 2 23 41 91 55
kammyli@bottcher.hk

India

Böttcher (India) Pvt. Ltd.
409A, 4th Floor
DLF City Court
Sikanderpur
Gurgaon - 122002
Haryana, India
Phone: +91 (0) 12 44 00 17 94
Fax: +91 (0) 12 44 10 53 54
info@bottcherindia.com

Indonesia

PT. Böttcher Indonesia
Kawasan Industri Pulogadung, Jakarta 13920
Phone: +62 (0) 21 46 83 29 36
Fax: +62(0) 21 46 83 29 42
bottcher@cbn.net.id

Italy

Böttcher Italiana S.P.A.
Via C. Goldoni 24, 20090 Trezzano sul Naviglio
Phone: +39 02 484 17 1
Fax: +39 02 484 17 342
boettcher-italy@boettcher-systems.com

Japan

Boettcher Japan K.K.
Tokyo 136-0075
Phone: +81 3 36 47 64 01
Fax: +81 3 36 47 64 11
tomiyama@boettcher.cp.jp

Korea

Boettcher Korea Co., Ltd.
Changhang-dong, Ilsadong-gu,
Koyang-city, Kyunggi-do
Phone: +82 (0) 31 907 67 81
Fax: +82 (0) 31 907 67 86
cjpark@boettcher.co.kr

Malaysia

Böttcher Malaysia Sdn Bhd
47100 Puchong, Selangor Darul Ehsan
Phone: +60 3 80 62 20 42
Fax: +60 3 80 62 42 03
myoffice@boettcher.com.my

Mexico

Böttcher Sistemas S. de R.L. de C.V.
Amado Nervo # 119-A Colonia Moderna
C.P. 03510 Delegacion Benito Juarez
Mexico Distrito Federal
Phone: +52 (0) 55 56 57 72 93
Fax: +52 (0) 55 56 57 94 19
enrique.iturbe@boettcher-systems.com

The Netherlands

Böttcher Nederland B.V.
4261 TK Wijk en Aalburg
Phone: +31 (0) 416 69 71 90
Fax: +31 (0) 416 69 73 59
service@boettcher-systems.com

Poland

Böttcher Polska Sp. z o.o.
05-870 Bionie
Phone: +48 (0) 22 731 61 10*
Fax: +48 (0) 22 731 61 11
office.pl@boettcher-systems.com

Russia

Boettcher CIS, LLC
Moscow 125373
Phone: +7 495 662 30 93
Fax: +7 495 662 30 94
moscow@boettcher-systems.com

Sweden

Böttcher Nordic AB
PO Box 245, Bråruåallén, 68633 Sunne
Phone: +46 (0) 565 165 70
Fax: +46 (0) 565 165 80
info@boettcher-miller.se

Switzerland

Böttcher Schweiz AG
6331 Hünenberg ZG
Phone: +41 (0) 41 784 11 11
Fax: +41 (0) 41 784 11 12
office.ch@boettcher-systems.com

Singapore

Böttcher Singapore Pte. Ltd.
#05-126 Enterprise Hub, Singapore 608586
Phone: +65 64 63 21 31
Fax: +65 64 63 11 31
bottcher@singnet.com.sg

Slovak Republic

Böttcher Slovenská republika, s.r.o.
85201 Bratislava
Phone: +421 (0) 2 63 81 36 24
Fax: +421 (0) 2 63 81 36 25
bottcher@bottcher.sk

Spain

Böttcher Ibérica S.A.
28810 Villalbilla (Madrid)
Phone: +34 91 885 95 77
Fax: +34 91 885 92 68
central@bottcheriberica.com

Taiwan

Böttcher Taiwan Co., Ltd.
Chung-Ho City, Taipei Hsien
Phone: +886 (0) 2 82 28 68 48
Fax: +886 (0) 2 82 28 68 49
barry.mao@boettcher.com.tw

Thailand

Böttcher (Thailand) Ltd.
Bangsamak, Bangpakong, Chachoengsao 24180
Phone: +66 (0) 38 57 16 00
Fax: +66 (0) 38 57 16 08
anurux.sasasmit@boettcher-systems.com

KB Thailand

KB Systems (Thailand) Co., Ltd.
Baanlane, Bang Pa-in, Ayutthaya, 13160
Phone: +66 (0) 35 31 42 23
Fax: +66 (0) 35 31 43 88
kan@kbsystems.co.th

Turkey

Boettcher Matbaa Malzemeleri Ticaret Ltd. Sti.
34217 Mahmutbey - Bagcilar, Istanbul
Phone: +90 (0) 212 659 93 38
Fax: +90 (0) 212 659 93 40
ozan.karaca@boettcher-systems.com

Ukraine

Böttcher Ukraine
02156 Kiev
Phone: +38 (0) 44 513 80 09
Fax: +38 (0) 44 513 98 38
office@bottcher.ua

Hungary

Böttcher Magyarország Kft.
6000 Kecskemét
Phone: +36 (0) 76 50 53 50
Fax: +36 (0) 76 50 53 52
bottcher@bottcher.hu

U.S.A.

Böttcher America Corporation
Belcamp, Maryland 21017
Phone: +1 410 273 70 00
Fax: +1 410 273 71 74
david.dinsmore@boettcher-systems.com

U.S.A.

Böttcher America Corporation
Tipton, Indiana 46072
Phone: +1 765 675 44 49
Fax: +1 765 675 41 11
jeff.hoover@boettcher-systems.com

KB America, Inc.

Eagle's Landing Business Park
1565 Jefferson Rd.
Bldg. 100, Suite 160
Rochester, NY 14623
Phone: +1 585 359 37 37
Fax: +1 585 359 37 41
bfarmer@kbamerica.us

