

# Product Catalogue 2021



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## Microscope Slides (non-color)

26 x 76 mm, thickness approx. 1.0 mm, in accordance with ISO 8037/1.

German made extra white low iron soda-lime float-glass, cleanly washed and polished, ready to use, packed by 50 pieces in fibre free boxes and by 5,000 pieces in stable shipping cartons.

All our products are available with CE/IVD marking (optional).



Item no.	Type
VA111001FKB.01	cut edges
VA111101FKB.01	cut edges / 20 mm twin frosted end
VA112001FKB.01	ground edges 45°
VA112101FKB.01	ground edges 45° / 20 mm twin frosted end
VA113001FKB.01	ground edges 90°
VA113101FKB.01	ground edges 90° / 20 mm twin frosted end
VA114001FKB.01	beveled edges
VA114101FKB.01	beveled edges / 20 mm twin frosted end

**Other glass types available on request.**



## StarFrost® - Microscope Slides (color-frosted)

### StarFrost® - Microscope Slides - uncoated

26 x 76 mm, thickness approx. 1.0 mm, in accordance with ISO 8037/1.

German made extra white low iron soda-lime float-glass, 20 mm single-sided color-frosted marking area, hydrophilic, cleanly washed and polished, ready to use, packed by 50 pieces in fibre free boxes and by 5,000 pieces in stable shipping cartons.

The color-frosted end is resistant against all common lab chemicals, high pH, pressure cooker etc. and suitable for all common sterilization methods.

Marking with pen, pencil and lab marker is possible.

All our products are available with CE/IVD marking (optional).



Item no.	Type
VS1117#1FKB.01	cut edges
VS1127#1FKB.01	ground edges 45°
VS1137#1FKB.01	ground edges 90°
VS1147#1FKB.01	beveled edges



**StarFrost® - Microscope Slides are available in 7 different standard colors:**

# = 1 - white, 2 - yellow, 3 - pink, 4 - green, 5 - blue, 6 – orange, H – light blue

## StarFrost® - Printer Slides – Ink-Jet Printer suitable

With clipped corners to minimize glass chips. Special print on the bottom of the slide to keep the rack levelled and avoiding scratches on the glass surface.

Paint especially developed for ink-jet-printers. **Leica IPS® and Sakura Auto-Write® approved!**

Item no.	Type
VS1158#1FKB.01	ground edges 90° printer slides
VS1158#1FKA.01	ground edges 90° printer slides, Adhesive
VS1158#1APN.0x	ground edges 90° printer slides, Advanced Adhesive
VS1158#1FKC.01	ground edges 90° printer slides, Polycat



## StarFrost® - Printer Slides – Thermal-Transfer Printer suitable

With clipped corners to minimize glass chips. Special print on the bottom of the slide to keep the rack levelled and avoiding scratches on the glass surface.

Paint especially developed for thermal-transfer-printers. **Thermo Scientific SlideMate I and II, Primera Signature Printer, Vogel etc.**

Item no.	Type
VS1159#1FKB.0x	ground edges 90° printer slides
VS1159#1FKA.0x	ground edges 90° printer slides, Adhesive
VS1159#1APN.0x	ground edges 90° printer slides, Advanced Adhesive
VS1159#1FKC.0x	ground edges 90° printer slides, Polycat

**StarFrost® - Microscope Slides are available in 6 different standard colors:**

# = 1 - white, 2 - yellow, 3 - pink, 4 - green, 5 - blue, 6 – orange, H – light blue

## StarFrost® - Microscope Slides ADHESIVE

Silane coating. For routine staining applications. Hydrophobic surface tension.

Item no.	Type
VS1117#1FKA.01	cut edges
VS1127#1FKA.01	ground edges 45°
VS1137#1FKA.01	ground edges 90°
VS1147#1FKA.01	beveled edges

## StarFrost® - Microscope Slides ADVANCED ADHESIVE

This coating has been developed especially **for the use in Immunohistochemistry (IHC)** and other harsher applications. Strong tissue adherence, no tissue-falling-off issues anymore!

In addition the staining itself has been improved as well. Hydrophilic surface tension.

**Premium packing without extra charges** for StarFrost® Advanced Adhesive slides: **by 50 pcs. wrapped in cellophane** in fibre-free boxes and **by 1,500 pcs. sealed in tropical pouches, in cartons.**

Item no.	Type
VS1117#1APN.0x	cut edges
VS1127#1APN.0x	ground edges 45°
VS1137#1APN.0x	ground edges 90°
VS1147#1APN.0x	beveled edges

## StarFrost® - Microscope Slides POLYCAT

Poly-L-Lysine coating.

Item no.	Type
VS1117#1FKC.01	cut edges
VS1127#1FKC.01	ground edges 45°
VS1137#1FKC.01	ground edges 90°
VS1147#1FKC.01	beveled edges

**StarFrost® - Microscope Slides are available in 7 different standard colors:**

# = 1 - white, 2 - yellow, 3 - pink, 4 - green, 5 - blue, 6 – orange, H – light blue

## StarFrost® - Haematology slides

100 % Quality Controlled

Extra hydrophilic surface for perfect blood smears.

Extra surface cleaning module installed.

**Super clean and scratch-free surface guaranteed thanks to automated Vision Control System:**

Every single slide is camera-inspected and non-conforming products are automatically sorted out.

**The 20mm color-frosted end is compatible with Ink-Jet as well as with Thermal Printers!**

**Premium packing without extra charges** for StarFrost® Haematology slides:

**by 50 pcs. wrapped in cellophane** in fibre-free boxes and **by 1,500 pcs. sealed in tropical pouches, in cartons.**

Item no.	Type
VS1157#1APH.01	ground edges 90°, clipped corners

**StarFrost® - Microscope Slides are available in 7 different standard colors:**

# = 1 - white, 2 - yellow, 3 - pink, 4 - green, 5 - blue, 6 – orange, H – light blue



## Diagnostic Slides

Diagnostic slides are available with different standard and customized masks.

Hydrophobic PTFE paint or Super-Hydrophobic paint to avoid cross-contamination and increased microliter capacity.

The diagnostic slide provides a wettable (hydrophilic) well area, which enhances cell attachment and spreading capabilities while the mask retains its hydrophobic characteristics.



Diagnostic slides are also available with our Adhesive, Advanced Adhesive and Polycat coating.

For annual quantities < 20,000 pcs. the layout is printed on every single slide. For this semi-automated process with higher manual effort only slides with edges ground 45° can be processed.

**annual quantities: < 20,000 pcs. – ground edges 45°**

Item no.	Type
----------	------

VG1121#...FKC.01	PTFE paint - uncoated wells (hydrophilic)
VG1121#...FKD.01	PTFE paint - Adhesive coated wells (silane)
VG1121#...APF.01	PTFE paint - Advanced Adhesive coated wells
VG1121#...FKL.01	Super-Hydrophobic paint – uncoated wells

For annual quantities > 20,000 pcs. the layout is printed on large glass sheets with our automated printing machine, then cut, ground etc. Therefore, these larger quantities are available as ground edges 90° and 45°, depending on which type is preferred.

**annual quantities: > 20,000 pcs. – ground edges 90° (45° available, too)**

Item no.	Type
----------	------

VG1131#...FKC.01	PTFE paint - uncoated wells (hydrophilic)
VG1131#...FKD.01	PTFE paint - Adhesive coated wells (silane)
VG1131#...APF.01	PTFE paint - Advanced Adhesive coated wells

annual quantities: > 200,000 pcs. – ground edges 90° (45° available, too)

Item no.	Type
VG1131#...FKC.01	PTFE paint - uncoated wells (hydrophilic)
VG1131#...FKD.01	PTFE paint - Adhesive coated wells (silane)
VG1131#...APF.01	PTFE paint - Advanced Adhesive coated wells

**Diagnostic Slides are available in 5 different standard colors:**

# = 1 - white, 2 - black, 3 - red, 4 - green, 5 – blue  
Other colors on request!

... = Layout no.

**More than 100 different diagnostic slide layouts are available as standard products!**

**Custom-made Diagnostic Slides are available on request!**

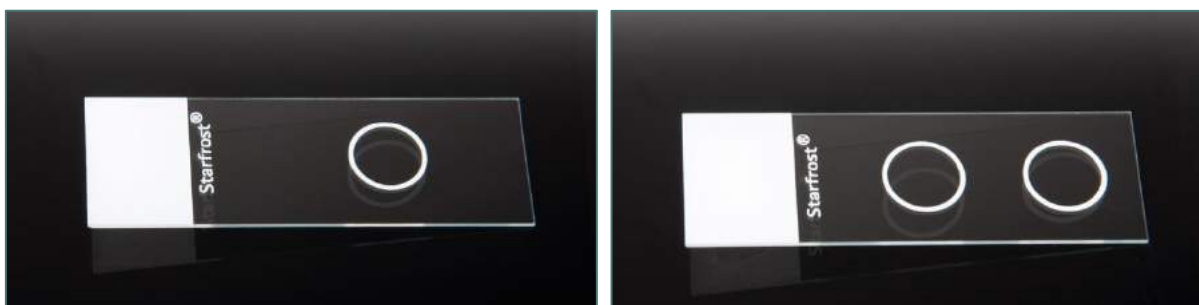
MOQ: 1,000 pieces. One-time costs for necessary layout, tooling and expenses will be invoiced separately.

## Standardized Diagnostic Slides

### StarFrost® - CYTO Slides

Specific slides with 1 or 2 printed rings, standard color white, ground edges 90°, suitable for the use in centrifuges.

Item no.	Type
VG11371247FKB.01	1 ring, uncoated (hydrophylic)
VG11371248FKA.01	1 ring, adhesive (silan treated)
VG11371249FKB.01	2 rings, uncoated (hydrophylic)
VG11371250FKA.01	2 rings, adhesive (silan treated)



### StarFrost® - CONTROL Slides

This slide has sections for both the patient sample and the control material. The two samples can be separated by the red line, which is printed on the reverse side to allow for reagent movement. StarFrost® CONTROL Slides are available with our different coatings, too.

Item no.	Type
VG11571221FKB.01	uncoated (hydrophylic)
VG11571221FKA.01	adhesive (silan treated)
VG11571221FKN.01	Advanced Adhesive



## StarFrost® - VCE Slides

The VCE cytology slide can be used to separate vaginal, cervical and endocervical smears. The slide has three sections marked "V", "C" and "E" and a color-frosted end. 100% wettable (hydrophilic) glass surface.

Item no.	Type
VG11211035FKB.01	white, uncoated (hydrophilic)
VG11212035FKB.01	black, uncoated (hydrophilic)



## StarFrost® - StarMark Slides

Our etchable StarMark slides have a double layer frosted end of different contrasting colors. Standard: white on top of black. Other combinations available on request. Available with wettable or coated glass surface.

Item no.	Type
VG1137Z111FKB.01	uncoated (hydrophilic)
VG1137Z107FKA.01	adhesive (silan treated)
VG1137Z107APN.01	Advanced Adhesive



## Large Microscope Slides » 2" x 3" « (Mega Slides)

Approx. 51.5 x 75.5 x 1.0 mm, in accordance with ISO 8037/1, German made extra white low iron soda-lime float-glass, edges ground 90°, cleanly washed and polished, special packaging.

**Item no.**

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VY11300051075.01

## Matching Cover Glass

49 x 68 mm, thickness No.1 (0.13 – 0.17 mm) borosilicate glass of hydrolytic class 1, precise cutting, in accordance with ISO 8255/1, without cords and blisters, special packaging.

**Item no.**

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VE104900680YA.02

**Other dimensions available on request!**

## Microscope Slides with cavities

26 x 76 x approx. 1.0 - 1.2 mm, ground edges, with one or more cavities of approx. 15 - 16 mm diameter, appr. 0.2 - 0.4 mm deep, cleanly washed and polished, packed by 50 pieces in fibre free boxes and by 5,000 pieces in a stable shipping box

Item no.	Type
VV151	with 1 cavity
VV152	with 2 cavities
VV153	with 3 cavities



## Cover Glass

### Cover Glass - Standard sizes-

Thickness No. 1 ( 0.13 – 0.17 mm), borosilicate glass of hydrolytic class 1, precise cutting, in accordance with ISO 8255/1, without cords and blisters, packed by 100 pcs. in plastic boxes and by 1,000 pcs. in cardboard boxes.



Item no.	Type
VD11515Y1A.01	15 x 15 mm
VD11818Y1A.01	18 x 18 mm
VD12020Y1A.01	20 x 20 mm
VD12222Y1A.01	22 x 22 mm
VD12424Y1A.01	24 x 24 mm
VD11824Y1A.01	18 x 24 mm
VD12126Y1A.01	21 x 26 mm
VD12232Y1A.01	22 x 32 mm
VD12240Y1A.01	22 x 40 mm
VD12250Y1A.01	22 x 50 mm
VD12260Y1A.01	22 x 60 mm
VD12264Y1A.01	22 x 64 mm
VD12432Y1A.01	24 x 32 mm
VD12436Y1A.01	24 x 36 mm
VD12438Y1A.01	24 x 38 mm
VD12440Y1A.01	24 x 40 mm
VD12446Y1A.01	24 x 46 mm

Item no.	Type
VD12448Y1A.01	24 x 48 mm
VD12450Y1A.01	24 x 50 mm
VD12455Y1A.01	24 x 55 mm
VD12460Y1A.01	24 x 60 mm
VD12464Y1A.01	24 x 64 mm
VD12465Y1A.01	24 x 65 mm
VD12540Y1A.01	25 x 40 mm
VD12550Y1A.01	25 x 50 mm
VD12560Y1A.01	25 x 60 mm

**Other sizes are available custom-made!**  
**Other glass thicknesses available on request.**





## High-precision cover glass in Thickness 1.5H - for high-performance microscopes

**These novel cover glasses are ideal for the use with high numerical aperture and high resolution objective lenses.**

**The uniform thickness and consistent optical properties are decisive for the image quality.**

Thickness No. 1.5H (0,17 +/- 0,005 mm), refractive index = 1,5255 +/- 0,0015, borosilicate glass of hydrolytic class 1, precise cutting, in accordance with ISO 8255/1, without cords and blisters, packed by 100 pcs. in plastic boxes and by 1,000 pcs. in cardboard boxes.

Item no.	Type
VD72450Y1A.01	24 x 50 mm
VD72460Y1A.01	24 x 60 mm

**Further sizes available on request!**



## Cover glass for coverslipping machines

### Automat – Star „green“/No. 1 ½

Thickness No. 1 ½ (0.16 - 0.19 mm) borosilicate glass of hydrolytic class 1, precise cutting, in accordance with ISO 8255/1, without cords and blisters, packed by 100 pieces in plastic boxes and by 1,000 pieces in cardboard boxes.

Special treated surface to avoid sticking and for superior and faster separation of the slips.

Item no.	Type
VM52440Y1A.01	24 x 40 mm
VM52450Y1A.01	24 x 50 mm
VM52455Y1A.01	24 x 55 mm
VM52460Y1A.01	24 x 60 mm

### Automat – Star „blue“/No. 1

Thickness No. 1 (0.13 - 0.17 mm) borosilicate glass of hydrolytic class 1, precise cutting, in accordance with ISO 8255/1, without cords and blisters, packed by 100 pieces in plastic boxes and by 1,000 pieces in cardboard boxes.

Special treated surface to avoid sticking and for superior and faster separation of the slips.

Item no.	Type
VM12440Y1A.01	24 x 40 mm
VM12450Y1A.01	24 x 50 mm
VM12455Y1A.01	24 x 55 mm
VM12460Y1A.01	24 x 60 mm

## Cover glass circles

Thickness No. 1 (0.13 - 0.17 mm) borosilicate glass of hydrolytic class 1, precise cutting, in accordance with ISO 8255/1, without cords and blisters, packed by 100 pieces in plastic boxes and by 1,000 pieces in cardboard boxes.

Item no.	Type
VD100 . . Y1A.01	05 - 10 mm
VD100 . . Y1A.01	11 - 18 mm
VD100 . . Y1A.01	19 - 22 mm
VD100 . . Y1A.01	23 - 25 mm
VD100 . . Y1A.01	26 - 30 mm
VD10031Y1A.01	- 31 mm
VD10032Y1A.01	- 32 mm
VD10033Y1A.01	- 33 mm
VD100 . . Y1A.01	34 - 35 mm
VD100 . . Y1A.01	36 - 40 mm
VD100 . . Y1A.01	41 - 45 mm
VD100 . . Y1A.01	46 - 50 mm

**Other diameters and glass thicknesses available on request!**

## Haemocytometer - Cover Glass

Thickness approx. 0.4 mm, with or without ground surfaces, packed by 10 pieces in plastic boxes (5 x 2 pieces in cellophane bag) and by 100 pieces in cardboard boxes.



### Quality A:

Item no.	Size
VHA202641.01	20 x 26 mm
VHA222241.01	22 x 22 mm
VHA242441.01	24 x 24 mm

**Prices for other sizes available on request!**



## Counting chambers

with various line-systems\*

For cell-counting, including 2 pieces of haemocytometer-cover glass, with or without metal clamps, individually packed in plastic boxes, CE-marked.



Item no.	Chamber-Division	System	Clamps
CZ1 . . .	single		
CZ2 . . .	double		
CZ3 . . .	single bright-line		
CZ4 . . .	double bright-line		
CZ . BU .		Bürker	
CZ . BT .		Bürker-Türk	
CZ . FR .		Fuchs-Rosenthal **	
CZ . TH .		Thoma	
CZ . TN .		Thoma neu	
CZ . NE .		Neubauer	
CZ . NI .		Neubauer improved	
CZ . MA .		Mallassez **	
CZ . . . 0			without
CZ . . . 1			with

### Type

single chamber division

double chamber division

single chamber division / bright-line

double chamber division / bright-line

2 clamps per counting chamber

\* = commodities, not of own production

\*\* = Prices on request!

Other line-systems available on request!

## Extras for Microscope Slides

### special/additional packaging

#### Type of packaging

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1,000-, 1,500- or 1,440-pieces (10 gross) carton

2,500-pieces stable shipping carton

tropical pouches for 1,500 pieces or for 1,440 pieces (10 gross)

tropical pouches for 2,500 pieces

tropical pouches for 5,000 pieces

2-pcs-box for 72 microscope slides

slides wrapped by 50 pcs. in cellophane



### Customized OEM boxes

Possible for a minimum annual volume of 1,000,000 pcs.!

### Different glass thicknesses

#### Thickness

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0,80 - 1,00 mm

0.95 - 1,05 mm

1.00 - 1,20 mm

1,20 - 1,50 mm

**STANDARD**

## Extras for Cover Glass

### additional packaging

#### Type of packaging

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Cardboard boxes wrapped in cellophane

Sealed in tropical pouches by 20,000/30,000/50,000/100,000 pcs.  
(depending on cover glass size)

### Customized OEM boxes

Possible for a minimum annual volume of 1,000,000 pcs.!

## Different glass thicknesses

#### Thickness

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No. 0 (0.08 – 0.12 mm)

No. 1 (0.13 – 0.17 mm)

No. 1 ½ (0.16 – 0.19 mm)

**No. 1.5H (0,17 +/- 0,005 mm)**

No. 2 (0.19 – 0.23 mm)

No. 3 (0.28 – 0.32 mm)

No. 4 (0.38 – 0.42 mm)

No. 5 (0.50 – 0.60 mm)

STANDARD



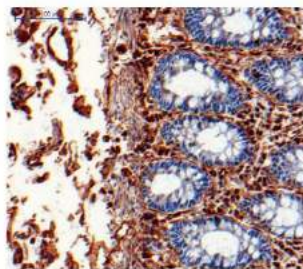
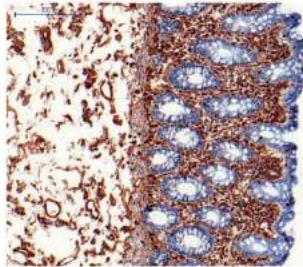
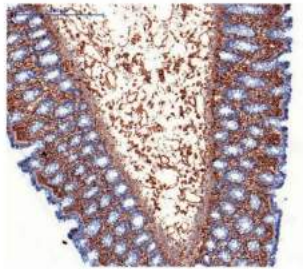
New to the range!

## StarFrost® “Advanced Adhesive” vs. Superfrost Plus

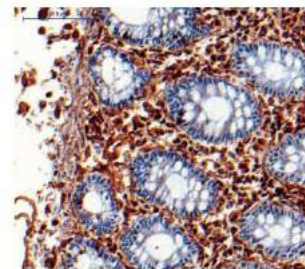
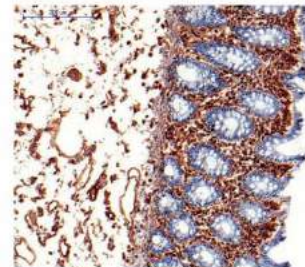
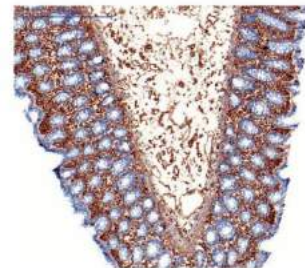
### Vimentin staining on Ventana Discovery XT

- IHC on colon mucosa
- Comparison of StarFrost ‘Advanced Adhesive’ vs Superfrost-Plus

**StarFrost  
,Advanced Adhesive‘**



**Superfrost Plus**



## The Different Types of Ground Edges

Knittel is one of only two manufacturers worldwide, who is able to provide all kinds of ground edges.





## ISO 9001:2015 certificate

 <b>CERTIFICATE</b>		
	Number 10593	
	Issued on 25.07.2020	
	Valid from 01.08.2020	
	Valid until 31.07.2023	Page 1 of 1
<b>Kiwa International Cert GmbH</b> certifies that the company		
<b>Waldemar Knittel Glasbearbeitungs GmbH</b>		
Varrentrapstr. 5 38114 Braunschweig		
for the scope		
<b>Manufacturing and distribution of microscope-slides and coverslips for microscopy and analytic research</b>		
has implemented and applies a Quality Management System, which is in compliance with the requirements of		
<b>ISO 9001:2015</b>		
Kiwa International Cert GmbH  Managing Director	Kiwa International Cert GmbH  Technical Manager	
 Deutsche Akkreditierungsstelle D-ZM-16102-01-00	Kiwa International Cert GmbH Grüner Deich 1 20097 Hamburg Germany Telefon +49 (0)40 30 39 49 80 Telefax +49 (0)40 30 39 49 79 e-mail: info@kiwa.de www.kiwa.de	

## ISO 13485:2016 certificate

  <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 4em; font-weight: bold; letter-spacing: 0.5em;">CERTIFICATE</div>				
	Reg. Number	11510 - M	Valid from	2020-07-27
	First Issue date	2011-08-01	Last change date	2020-07-27
Valid until	2023-07-30			
<p>Quality Management System Certificate</p> <p><b>ISO 13485:2016</b></p>				
<p>We certify that the Quality Management System of the Organization:</p> <p><b>Waldemar Knittel Glasbearbeitungs GmbH</b></p> <p>is in compliance with the standard UNI CEI EN ISO 13485:2016 for the following products/services:</p> <p>manufacturing and distribution of microscope-slides and coverslips for microscopy and analytic research</p>				
<p>Chief Operating Officer Giampiero Belcredi</p> 				
<p>The maintaining of certification is subject to annual surveillance and dependent upon the observance of Kiwa Cermet Italia contractual requirements.</p> <p><i>The date of issuance of this certificate is the date of first issue by another accredited body</i> This certificate is composed of 1 page.</p>				
<p>Kiwa Cermet Italia S.p.A. Società con socio unico, soggetta all'attività di direzione e coordinamento di Kiwa Italia Holding Srl Via Cadriano, 23 40057 Granarolo dell'Emilia (BO) Tel +39.051.459.3.111 Fax +39.051.763.382 E-mail: info@kiwacermet.it www.kiwa.it</p> 		<p><b>WALDEMAR KNITTEL GLASBEARBEITUNGS GMBH</b></p> <p><b>Registered Headquarters</b></p> <ul style="list-style-type: none"> <li>- Varrentrapstrasse 5, 38114 Braunschweig - Germany</li> </ul> <p><b>Certified Sites</b></p> <ul style="list-style-type: none"> <li>- Varrentrapstrasse 5, 38114 Braunschweig - Germany</li> </ul>		
		  <p>SGQ N° 007A</p>		

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