

# Technical Data Sheet

## Docufluidal® SF 1xx series Ball Pen Inks

### Ultra Low Viscosity Ball Pen Inks

#### General Information

Docufluidal® SF series offers a super smooth gliding experience due to its outstanding low viscosity. Specially adjusted tips are necessary to control the flow of this super fluid and to obtain the maximum writing performance.

#### Suitable Surfaces

All kind of papers

#### Applicable Standards & Regulations on Request

#### Physical Data

Type	Colour	Lightfastness (ISO 12757)	TF	Viscosity at 20°C mPa s ± 200	Surface tension mN/m	pH-Value
Docufluidal® SF 105	violet blue	Part I	no	1,250	> 36	5.5 - 7.5
Docufluidal® SF 106	dark blue	Part I	no	1,250	> 36	5.5 - 7.5
Docufluidal® SF 107	violet blue	Part II	no	1,250	> 35	5.5 - 6.5
Docufluidal® SF 110	black	Part II	no	1,250	> 35	5.5 - 7.5
Docufluidal® SF 111	black	Part II	no	1,250	> 35	5.5 - 7.5
Docufluidal® SF 121	scarlet red	Part I	no	1,250	> 33	4.3 - 6.3
Docufluidal® SF 123	red	Part I	no	1,250	> 35	5.5 - 6.5
Docufluidal® SF 130	green	Part II	no	1,250	> 33	4.3 - 6.3

#### Technical Advice

General remarks:

Dokumental has tested the performance, long term stability and shelf life of the inks in the laboratory under typical terms of use in a limited number of writing systems. As there is a large variety of writing system components available on the market, Dokumental can NOT give a general guarantee for the inks in all writing systems. Therefore, it is mandatory to approve the compatibility of the inks and the components as well as the writing performance, long term stability and the shelf life of the inks in the customer's components. Important and decisive parameters are:

##### 1. Climatic conditions: Temperature and Humidity

Especially exposure to high temperatures and high humidity may accelerate the aging of the ink in original ink drums as well as in the writing system. This may lead to reduced shelf life of the products. Therefore, long term stability and shelf life of the writing system must be tested thoroughly under those climatic conditions, which are expected during the storage time and the practical use of the writing system.

2. All materials, which get into contact (short term or long term) with the inks during processing and manufacturing of the writing instruments, like hoses, pipes, pumps, funnels, storage tanks, cleaning liquids etc. All such contact materials may not release any contaminations to the inks. Contamination of the inks may lead to undesirable effects like performance loss and/or reduced shelf life.

3. All materials, which get into contact (short term and long term) with the inks in the writing system like tips, tubes, sealing waxes, ink follower, etc. Long term oven test at elevated temperature (recommended is 40 to 50 °C) must be carried out to prove long term compatibility of all components and materials.

4. Narrow tip and tube dimensions like tips ≤ 0.5 mm and/or tubes with inner diameter ≤ 1,7 mm may lead to reduced shelf life of the writing system or other undesirable effects due to accelerated ink drying especially when stored at temperatures above 30 °C.

Suitable components:

The inks are suitable for plastic and metal refills.

The combination of Docufluidal SF with not suitable tips will lead to undesirable results (e.g. static leakage, gooping, etc). Specially adjusted tips for ULV ball pen inks are essential to obtain the maximum writing performance.

For capillary refills, the use of ink follower Dokumental® IF 4312 colourless will increase the shelf life and will improve clear drain property. For further information about our ink followers see the Dokumental® IF 43xx technical data sheet.

### Ultra Low Viscosity Ball Pen Inks

#### Storage, Handling & Transportation

Store our product and the produced writing instruments frost protected and avoid direct sunlight. The recommended storage temperature for the ink in the original containers 10 °C to 30 °C. Storage temperatures of above 30°C bear the risk of a reduced shelf life of the inks and the writing system. The recommended storage temperature for best shelf life of the produced writing instruments is 10 to 25 °C.

Make sure that the drums are closed tightly after they were opened.

Horizontal storage of the refills is recommended in order to get the maximum shelf life.

The shelf life of the inks in original sealed containers is 2 years.

#### Packaging

20kg plastic canister

200kg plastic drum

1,000kg IBC

#### Produced by

DOKUMENTAL GmbH & Co KG

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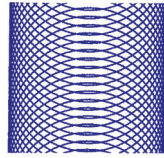
Fax: +49(0)621/37702-391

Mail: [info@dokumental.de](mailto:info@dokumental.de)

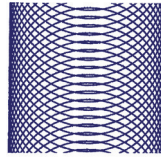
[www.dokumental.de](http://www.dokumental.de)

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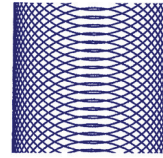
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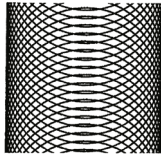
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SF 105  
violet blue



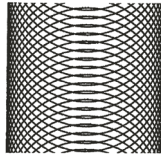
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SF 106  
dark blue



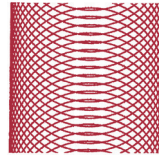
Docufluidal®  
SF 107  
violet blue



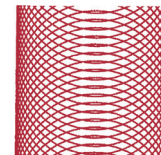
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SF 110  
black



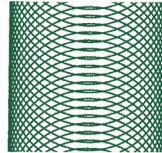
Docufluidal®  
SF 111  
black



Docufluidal®  
SF 121  
scarlet red



Docufluidal®  
SF 123  
red



Docufluidal®  
SF 130  
green