

Technical Data Sheet

Dokumental® S-280 Ball Pen Ink

Silver Ball Pen Ink for Leather Markings

General Information

Dokumental® S-280 is a silver ball pen ink, that is especially suited for markings on smooth leather. The inks are formulated with metal pigments which show a clear tendency for sedimentation due to their high density.

Suitable Surfaces

smooth leather

Physical Data

Type	Colour	Lightfastness (ISO 12757)	TF	Viscosity at 20°C mPa s ± 1,000	Surface tension mN/m	pH-Value
Dokumental® S-280	silver	Part II	no	14,000	> 36.0	6.0 - 8.0

ISO 12757: Ball point pens and refills - Part I: General use, Part II: Documentary use, TF: Transparent Flux (clear drain in suitable refills)

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. **Refills with Dokumental® S-280 have a reduced shelf life due to the tendency of pigment sedimentation. Longer storage times have to be avoided.**

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. **For optimal shelf-life we recommend brass refill tubes.**

4. Narrow tip and tube dimensions like tips ≤ 1.0 mm and/or tubes with inner diameter $\leq 1,7$ 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. **Because of the particle size used in Dokumental® S-280, we recommend to use tip ball sizes of at least 1.0mm.**

Suitable Components:

All ball pen inks are suitable for plastic and metal refills.

For capillary refills, the use of ink follower Dokumental® IF 4312 colourless will increase the shelf life and will improve clear drain property. For jumbo refills, the use of a specially adjusted ink follower is mandatory in order to prevent back-leakage. For further information about our ink followers see the Dokumental® IF 43xx technical data sheet

It is mandatory to approve the compatibility of the ink and the components as well as the performance of the writing system.

Storage, Handling & Transportation

Store our product frost protected and avoid direct sunlight. The recommended storage temperature is between 10°C and 30°C. Storage temperatures of above 30°C for several days bear the risk of a reduced shelf life of the ink.

After usage the drums have to be closed again tightly.

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 1 year, if above mentioned storage conditions are met.

The ink has to be mixed well and homogenised before usage. This can be achieved by thoroughly stirring at a temperature of 60°C. Out of physical reasons we recommend a moderate to slow filling speed of the refills to avoid deformation of the metallic pigments. The refills should be centrifuged under moderate conditions which means as short as possible. The speed

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should be just sufficient to remove air bubbles. For this operation some trial tests are necessary in advance to find out the optimal conditions. The trial tests must include a careful inspection of the corresponding refills over a certain storage time with regard to back leaking and the occurrence of air bubbles.

Applicable Standards & Regulations

Unless expressly agreed, no warranty is given that all standards & regulations relevant to the Customer's intended use have been and will be complied with. To the extent that compliance with certain standards & regulations is warranted, this warranty shall only apply at the time the underlying contract is entered into. There is no guarantee that the products will continue to comply with the standards & regulations in the event of future changes. Dokumental also assumes no obligation to inform the Customer of any changes to such standards & regulations that may be relevant to the Customer.

Packaging

20kg plastic canister

Produced by

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