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Statement on Thermal Paper Stability

METTLER TOLEDO presents the Certificate of Stability issued by Jujo Thermal Ltd. with respect to its thermal paper AP50KJ-R (MT description: Thermal paper roll 58 mm, Ø 50 mm; part number 30094723).


Jujo Thermal Ltd. certifies the printout image stability for 25 years for its thermal paper AP50KJ-R, if the paper is kept under proper storage conditions. The Certificate was issued by Jujo Thermal Ltd. to the benefit of METTLER TOLEDO and its customers using the above mentioned paper.

METTLER TOLEDO recommends the use of the thermal paper AP50KJ-R with thermal printers P-56RUE and P-58RUE, and cannot guarantee printout image stability for any other thermal paper used.

Please refer to the following pages for the Certificate of Stability, the correct storage conditions and further technical information on the thermal paper AP50KJ-R from Jujo Thermal Ltd..

Greifensee, February 11th, 2014
Mettler-Toledo AG
Laboratory & Weighing Technologies


Dr. René Lenggenhager
General Manager
Laboratory & Weighing Technologies


Marcel Strotz
Head SBU Basic Weighing
Laboratory & Weighing Technologies

Disclaimer. This Statement is provided to you for information purposes only. It does not extend our warranty or liability in any way. Except as specifically agreed by METTLER TOLEDO in writing, our standard liability and warranty for our products is as set forth in our General Terms and Conditions of Sale and Service, which are available at www.mt.com/legal or by post upon request.

Mettler-Toledo AG
Laboratory & Weighing Technologies
Im Langacher 44
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Switzerland

CERTIFICATE OF STABILITY

This is the certification about the thermal paper grade **AP50KJ-R** produced by Jujo Thermal Ltd. in Kauttua Finland.

In AP50KJ-R, special chemistry based on permanent colour developing reaction is used. This chemistry is totally different from the normal Leuco dye chemistry with reversible colour developing reaction which has commonly been used in thermal papers.

The thermal printed image on AP50KJ-R will remain readable for the human eye in harsh conditions.

Basing on the fact mentioned above, the long term experience as a thermal paper manufacturer and the feedback from our customers, Jujo Thermal Ltd. has given 25 years' image stability for AP50KJ-R, provided the paper is kept under correct storage conditions for thermal papers.

This Certificate is issued to the benefit of Mettler-Toledo and any of its customers using the AP50KJ-R paper with Mettler-Toledo equipment.

Kauttua, 5 December 2013

JUJO THERMAL LTD.


Takashi Fujihara
Executive Vice President
Sales Development and R&D


Kenji Hirai
Technical Director



CORRECT STORING OF THERMAL PAPER

1. Avoid hot and humid environment

1-1. For long-term storage, store JTK thermal paper in the dark at an average ambient temperature of less than 25°C and a relative humidity of less than 65%.

1-2. JTK thermal paper begins to develop color at between 60°C to 100°C and reaches applicable density at between 70°C to 120°C. The paper, however, displays similar signs of development under high temperature or high humidity conditions. If the paper is used continuously at temperatures of 40°C or above for more than 24 hours attention should be paid to the ambient temperature and humidity.

2. Avoid exposure to direct sunlight

2-1. The paper will yellow if exposed to direct sunlight for prolonged periods. The printed image also tends to fade in direct sunlight.

2-2. The image tends to fade when left exposed to conventional fluorescent light for prolonged periods of time. Therefore printed paper should be filed soon after printing.

3. Do not use solvent-type adhesives

3-1. Adhesives containing volatile organic solvents such as alcohols, esters, ketones etc. cause color formation.

3-2. Adhesives based on starch, PVA or CMC are harmless and hence recommended.

4. Avoid contact with plasticizers

4-1. PVC film contains plasticizer such as esterphthalate and prolonged contact reduces the image forming ability of the paper and causes printed images to fade as well. For storage files and cases made of polyolefins or polyesters are recommended.

4-2. Self-adhesive cellophane tapes might contain plasticizer which cause the printed image to fade. When tacking JTK thermal paper double sided self-adhesive tape applied to the back side of JTK thermal paper is recommended.

4-3. Wax-type thermal paper might also contain plasticizer fading the image of JTK thermal paper. Do not store these two types of thermal papers in the same file of case.

5. Others

5-1. Avoid direct contact with freshly developed diazo copying paper as it might induce color forming on the surface of JTK thermal paper.

5-2. Avoid direct contact with carbon as well as carbonless copying papers as these might reduce printability or cause the printed image of JTK thermal paper to fade.

5-3. Human body fluids like sweat causes the printed image of JTK thermal paper to fade. Please pay attention to proper paper handling.

5-4. JTK thermal paper sheets must be stored with their printed surface separate from each other because the printed image might slightly be transferred from one surface to the other.

5-5. Frictional heat induced by scratching or pressure by hard metal objects, finger nails etc. causes images to be developed. Please pay attention to proper paper handling and avoid e.g. transportation of heavy jumbo rolls by rolling them on the floor.

All image stability guarantees given by Jujo Thermal apply only if paper is stored and used according to above instructions. If selecting a thermal paper grade for an application where there is risk of contact with above harmful materials or paper needs to have good preservability properties, please contact our customer service for assistance on selecting a suitable grade from our range of durable and extra durable grades.



Technical Data Sheet

AP50KJ-R

Ultra high preservability, non-phenol grade for demanding cash register and specialty document use. Extremely high stability and resistance against plasticizers, oil, fat and water. Produced without using phenolbased developers.

Paper Properties

Item	Unit	Value	Test method
Basis Weight	g/m ²	55.0 ± 4.0	ISO 536
Thickness	µm	63 ± 5	ISO 534
Moisture	%	6.0 ± 1.0	ISO 287
Smoothness, Bekk	s	min. 250	ISO 5627
ISO-Brightness	%	min. 80	ISO 2470
Tensile strength (MD)	kN/m	min. 2.5	ISO 1924-3
Tensile strength (CD)	kN/m	min. 1.5	ISO 1924-3
Tear strength (MD)	mN	min. 260	ISO 1974
Tear strength (CD)	mN	min. 260	ISO 1974

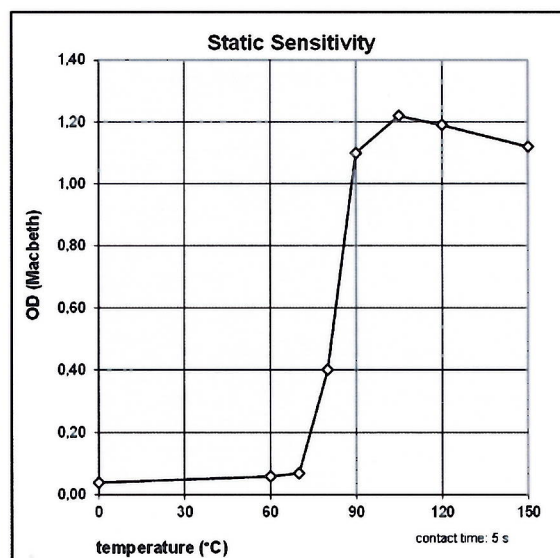
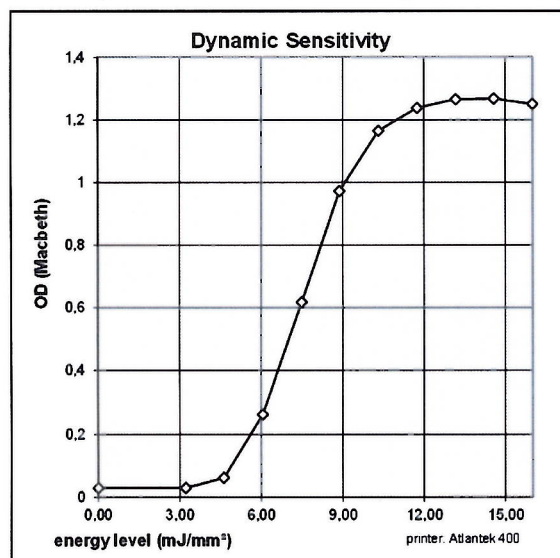
Image Properties

Item	Unit	Value	Test method
Image color	-	black	
Dynamic sensitivity	• ... ••••	••	•••• =highest sensitivity
Maximum density	• ... ••••	••	

Stability Properties

Item	Unit	Value	Circumstances
Heat resistance:			60 °C, 24 h
Background	OD	max. 0.20	
Image loss	OD	max. 10%	
Humidity resistance:			40 °C, 90 % RH, 24 h
Background	OD	max. 0.20	
Image loss	OD	max. 10%	
Light resistance:			5000 lux, 100 h
Background	OD	max. 0.20	
Image loss	OD	max. 10%	
Stability of image		25 years	correct storage for thermal papers

Examples of Color Development Graphs



The data can be revised without prior notification. Updated 20.9.2013

