

Avery Dennison
Label and Packaging Materials
Service guide

Europe
2024

ADProcerta™

Application based label material
testing and qualification



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With nearly 90 years of experience in material science, we provide label material testing and in-depth analysis of bespoke product labeling needs.

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What is ISO/IEC 17025?

ISO/IEC 17025 is an internationally recognized standard that specifies the general requirements for the competence of testing and calibration laboratories. It sets out criteria for quality management systems and technical operations, ensuring laboratories consistently produce accurate and reliable results. ISO/IEC 17025 accreditation demonstrates a laboratory's ability to perform testing and calibration activities competently, enhancing confidence in the reliability and accuracy of its services



For our Scope we refer you to the RvA website.

* Registration number L-702, tests in scope: FTM-2, FTM-9, ASTM D3611-06.



Who we are

The world of labeling materials can be difficult to navigate at times. From prefilled syringes and car engines to chemical drums and champagne bottles, labels for demanding applications have unique requirements. Testing materials and applications, as well as understanding how labels will perform in specific conditions and environments, are just a few of the challenges and variables involved in selecting the best options for your products.

It can become complicated and time-consuming. That's why we created AD Procerta.

AD Procerta is part of Avery Dennison, a world leader in materials science. With over 80 years of R&D expertise in the self-adhesive materials industry, we fully understand the often-complicated dynamics between products, packaging, and label materials. This enables us to support our customers worldwide from the most demanding sectors, such as pharmaceuticals or automotive. Since 2024 we are ISO/IEC 17025 accredited* by the Dutch RvA.

At AD Procerta, we take pride in our commitment to quality and excellence. As an ISO/IEC 17025 accredited label material testing laboratory by the Dutch RvA, we adhere strictly to the highest standards of testing. Our accreditation signifies our technical competence and reliability in providing accurate and dependable testing services. Clients can trust that every test conducted in our facility is carried out with precision and in accordance with ISO/IEC 17025 guidelines, ensuring the integrity and consistency of our results*.

Our testing capabilities

When it comes to demanding labeling applications, a one-size-fits-all approach doesn't work. That is why AD Procerta's diverse knowledge and technologies are crucial, as we can facilitate the development of testing methods that closely mimic each product's real-life application and environment.

Pharmaceutical applications

We understand that your pharmaceutical products are one-of-a-kind, and our service reflects that. Over 100 instruments are used for extensive testing in application and conditioning, and we take a tailored approach to each project, using testing protocols that are bespoke to your specific product rather than general FINAT or ASTM guidelines. For typical pharmaceutical application requirements, we have specific conditioning equipment such as centrifuge and autoclave sterilization units, ultra-low temperature freezers (-80°C), cooling chambers, label dispensing units, etc.

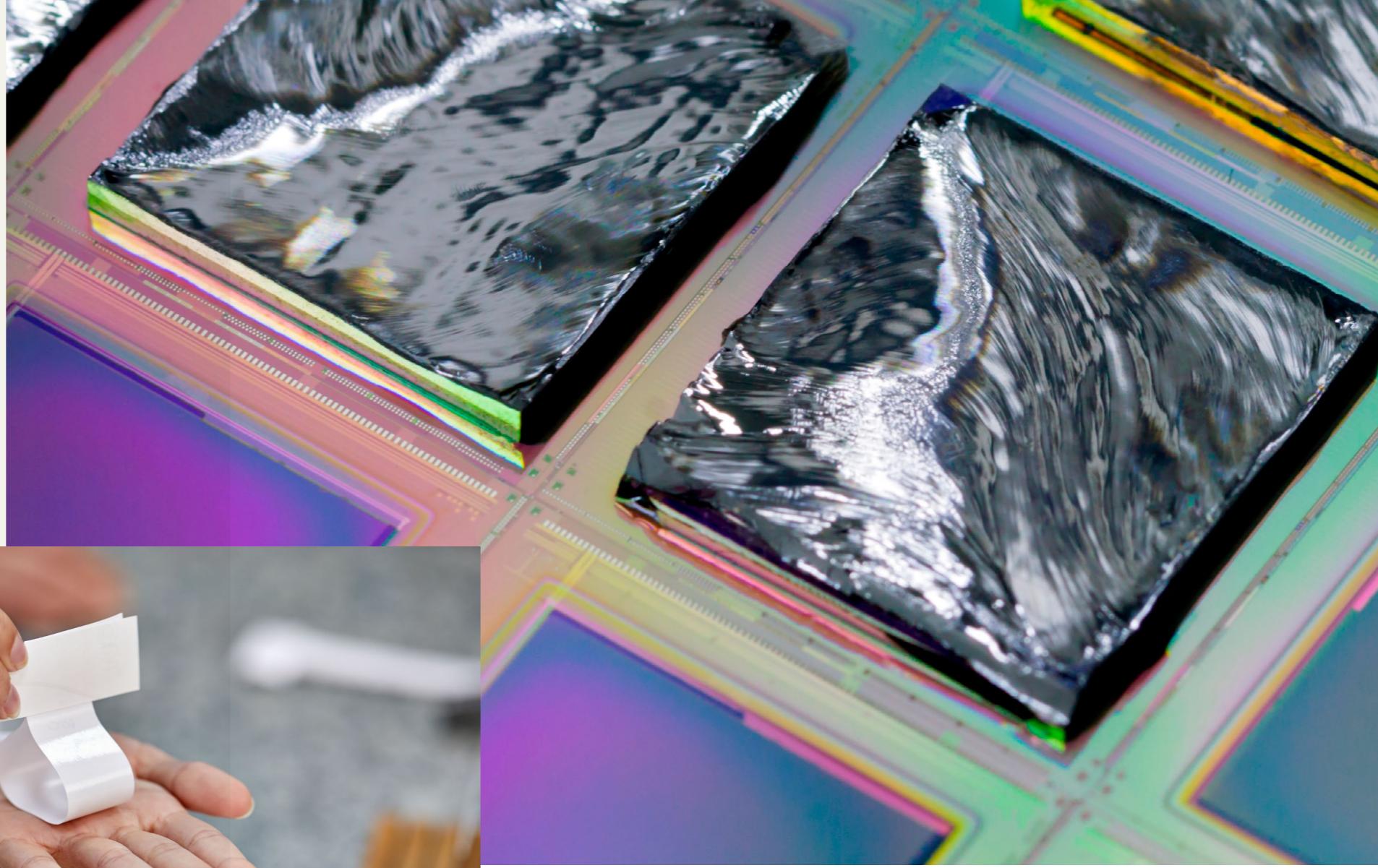
Premium wine and spirit applications

Crafting premium wines and spirits is an art form, and the label designs contribute as much to the overall experience as the liquid itself. From the moment a bottle leaves the vineyard to when it's poured into a glass, the label is exposed to a range of environmental conditions, such as temperature changes during storage and wet and icy conditions during consumption. At AD Procerta, we understand the importance of label durability and appeal, which is why we've developed cutting-edge ice bucket testing protocols honed through years of experience working with top brand owners. These protocols can be tailored to meet specific needs, ensuring that labels maintain their flawless aesthetics no matter what adverse conditions they face.



Automotive and industrial applications

The average lifespan of a car in Europe ranges from 8 to 35 years. A label placed on an engine, airbag, or under the hood must also last this long. Thus, longevity is critical; fortunately, a wide variety of tests can be conducted to validate a label's durability. These include peel adhesion on specific substrates as well as simulation of environmental exposure conditions—think high or low temperatures, humidity, and outdoor weathering. And finally, the resistance of printed labels against chemicals and abrasion can also be tested.



Our capabilities

Appropriate conditioning of the labeled items is critical in simulating the impact of temperature, time, humidity, and UV exposure on the material. As part of this process, our laboratory has over 100 instruments for extensive testing, conditioning, and in-depth material analysis.

- Climate chambers (aging)
- Centrifuge unit
- Autoclave sterilization unit
- Ovens (+1200°C)
- Liquid nitrogen storage containers (-196°C)
- Abrasion simulators: Sutherland, Sonyo, and Taber
- High precision mandrel testing unit co-developed by Avery Dennison
- Low-temperature storage ($\geq +2^\circ\text{C}$)
- Ultra-deep freezers (-80°C)
- In-line labeling
- Variable information printing
- Fiber laser engraving
- Wide range temperature loop tack tester (-25 to +60)
- Analytical support: GCMS, Infrared microscopy, SEM microscopy, IDS imaging, and rheology

Our services

Our team consists of researchers and technicians with strong backgrounds in materials science and demanding applications. These experts can guide you through the various material considerations, discuss testing protocols and results, and assist you in qualifying the right solutions based on their many years of experience

The goal of application testing is to mimic the actual lifecycle and environment of the packaging solution with as much accuracy as possible, focusing on the label material to achieve maximum performance.

The following are just a few examples of what our experts can do for you:

Initial tack – label adhesion to the substrate

The so-called loop tack test measures immediate adhesion to the substrate by assessing the force needed to separate the label from it. It is critical to have this information when labeling materials that will be dispensed and labeled on high-speed packaging lines. The loop tack measurement can be conducted under different conditions with variables ranging from temperature, speed, substrate, and dwell time. Loop tack testing is most commonly governed by two standards: FTM 9 and ASTM D6195.

Peel adhesion

Label peel adhesion test is used to measure the strength of the bond between a pressure-sensitive adhesive (PSA) and a substrate. The test involves peeling a label from a surface at a specific angle and speed and measuring the force required. Different methods exist, such as the 90-degree peel test and the 180-degree peel test, each with specific parameters to measure the strength of the bond. Additional conditions like temperature can be also adjusted.

Mandrel testing—camera system

Mandrel hold is critical for application on small objects (below 15 mm diameters) like syringes, vials, cables, or bottlenecks. Label materials are applied on a specific substrate, and (following conditioning or dwell time) the label edge lift is measured by a high-precision camera system which can detect the slightest edge lifting of the label from the substrate. Additional conditions like temperature can be also adjusted.

“Ice bucket” test

In champagne packaging, the most crucial test is whether the label will remain intact and flawless after immersion in ice. Firstly the label is applied to the bottle in an automatic application. Afterward, 50% of the label is immersed in room-temperature water for 4 hours. Observation of the potential color change of the paper takes place after 15 minutes, 30 minutes, 1 hour, 1.5 hours, 2 hours, 3 hours, and 4 hours. Common failure modes include bleeds, discoloration, and peeling of the label.

High-temperature resistance

To simulate the effect of temperature on printed labels, we perform tests based on UL 969 part 7.1. For PET-based labels, a ‘normal’ service temperature range is up to 150°C. Labels are exposed for 10 days to a defined temperature, and we test them at 150°C and 180°C to ensure they can withstand high temperatures after they are applied.

Accelerated aging/shelf life

Accelerated aging, also called shelf life testing, simulates long-term aging by subjecting label materials to extreme conditions such as high temperatures, humidity, and light exposure—all in a short timeframe. There are two major standards that are commonly used: ASTM D5374—standard test methods for forced degradation of polymeric materials, and D4956—standard specification for retroreflective sheeting for traffic control. Accelerating the aging process allows us to identify potential weaknesses in the labeling solution and assist in selecting the right material.

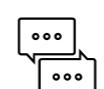
Our process

As an ISO/IEC 17025 accredited* (Registration number L-702, RvA Netherlands) laboratory, you can rest assured that we are technically equipped to provide reliable and valid testing services. All tests and reports we prepare for you remain confidential within the framework of a non-disclosure agreement. Ultimately, working with AD Procerta is hassle-free.



Get in touch

Connect with us via the [contact form](#), and one of our experts will get back to you as soon as possible.



Discuss your project

In collaboration with your engineers, we will discuss the details of your application, critical points and recommend the best test methods.



Receive test proposal and quotation

Using the information we discussed, our lab lead will prepare a test proposal, and our commercial team will create a quotation.



Accept offer and submit samples

Following acceptance of our offer, you will have to submit the material samples, after which our lab will begin working on your request immediately.



Receive final report

The test report will be provided to you after the tests are completed. We will gladly discuss the results with you and make any additional revisions needed. The report is considered final only after you accept it.



Closing the order

The order will be closed once you receive and accept the final report. Your samples will be returned or destroyed according to your instructions.

We value the security and privacy of your data. As a result, all AD Procerta tests and reports are treated with utmost confidentiality within the framework of a non-disclosure agreement.



Let's connect

We have extensive experience in label material testing and development for pharmaceutical applications. You can learn more about AD Procerta and our services by visiting our website adprocerta.com.

labelaverydennison.com

For more information on technical performance and printing recommendations, please refer to the respective datasheets. Please note that the Avery Dennison product range and service offering can be subject to changes. For an accurate overview, please check our website labelaverydennison.eu or contact your local Avery Dennison sales representative.

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