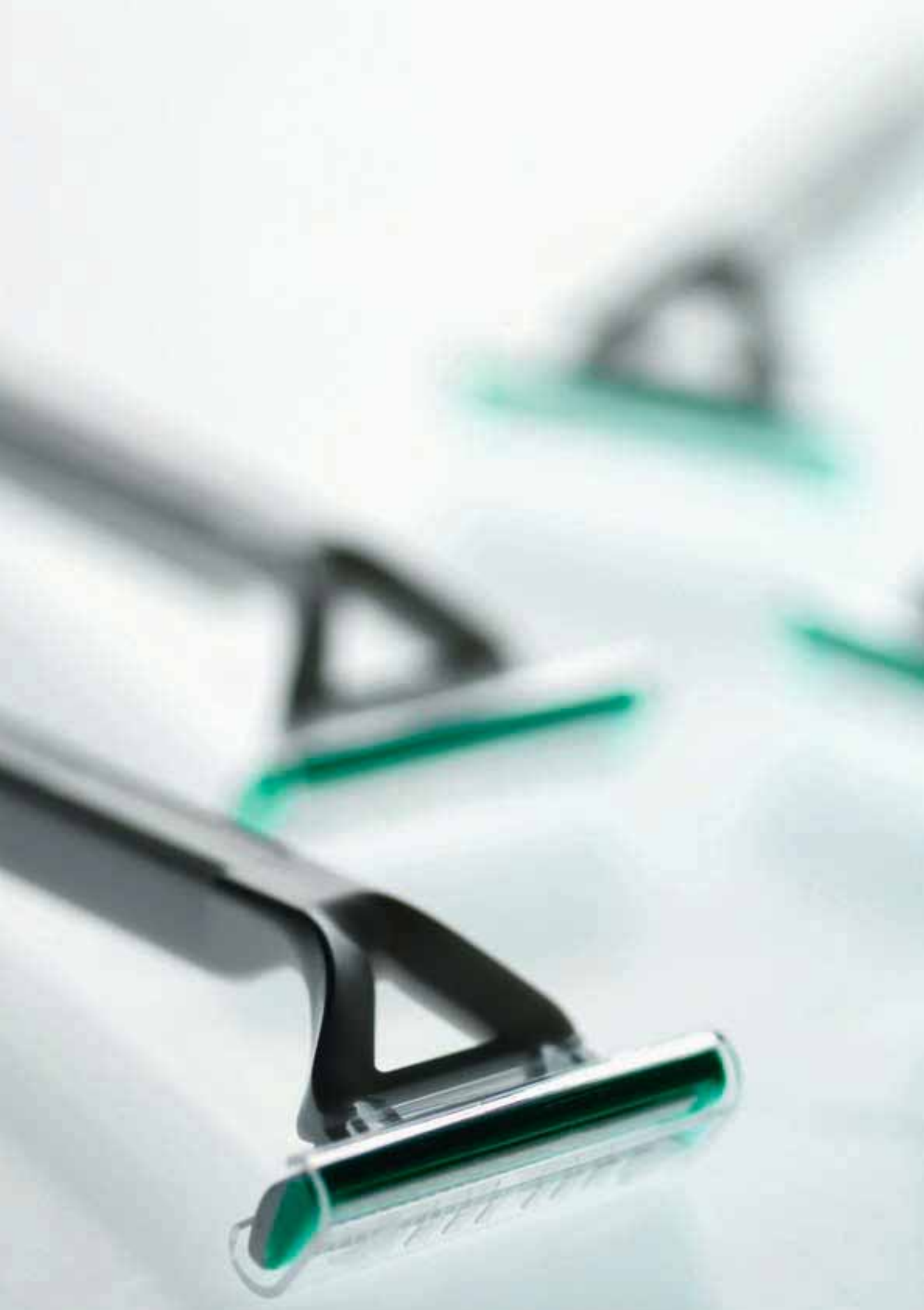
Bayer MaterialScience

FEEL THE DIFFERENCE:
WATERBORNE SOFT-TOUCH COATINGS



FEEL THE DIFFERENCE.

Pleasant, soft, warm – these are attributes seldom associated with plastics. Soft-touch coatings are used to modify plastic surfaces in just this way. We often do not consciously perceive the way an object feels – in scientific terms its “haptics”. Nevertheless, the significance of haptic perception should not be underestimated, because we very easily associate emotional statements such as “pleasantly velvety” or “warm” with an object’s “handle”.

“Data” collected each millisecond by the fingertips are processed in the brain into a tactile sensation: high- or low-quality, soft, sticky, velvety or hard, cold or warm, pleasant or repulsive. The astonishing thing is that a coating film only a few hundredths of a millimeter thick can drastically alter the tactile perception of a material or a component. Coating manufacturers can elicit just about any tactile sensation by varying their choice of raw materials.

The variability and versatility of coating technology is a major advantage over the use of other surfaces – plastic skins, for example – to improve the way objects feel.

The introduction of so-called “soft-touch” coatings greatly enhanced the image of plastics, particularly for high-quality products. Such coatings are used today on laptops, telephones and even vacuum cleaners. A major area of application is the automotive industry, where soft-touch surfaces in automotive interiors lend a feel of quality to the plastics that are now used nearly everywhere. In addition, such surfaces are very resistant to abrasion and scratching. They have low gloss levels and thus low reflectivity. Soft-touch coatings are now available in a number of colors and also as effect coatings.

Desmodur® Bayhydur® Bayhydrol®

SOFT-TOUCH COATINGS

PREMIUM FINISH, COMFORTABLE FEELING

The feel plays a decisive role in “buy or don’t buy” decisions for consumer goods such as mobile phones or MP3 players is obvious. But car makers have long known that it is not just technology or appearance that determines how well a vehicle model is received.

Car makers therefore use them to coat such things as consoles, door handles, door trims, arm rests and glove box covers to lend a feel of quality to their cars’ interiors. Customers consider these cars to be of high quality and feel good when sitting in them – often without really knowing why. Soft-touch coatings are also being used increasingly in computers, telephones, furniture and domestic appliances.

Most often used today are waterborne soft-touch coatings based on two-component polyurethanes, with special highly flexible raw materials providing the desired effect.

Bayer MaterialScience offers water-emulsible polyisocyanates and polyurethane dispersions (Bayhydur® and Bayhydrol®, respectively) for the formulation of such waterborne soft-touch coating systems.









Soft-touch surfaces:

- warm and velvety handle
- high abrasion and scratch resistance
- low gloss, low reflectivity
- wide variety of shades and color effects possible

NEW FORMULATIONS WITH TANGIBLE ADVANTAGES

makrofol® Softtouch

bayfol® Softtouch

With new formulations and processes, we are striving to not only significantly improve the quality of our soft-touch coatings, but also to make the production process substantially more efficient – by using soft-touch films. The soft-touch surface is applied before the films are molded and back-injected with a plastic. The advantages are obvious: A flat film can be more easily coated using a dip or knife process than a finished three dimensional component can. A coating line thus becomes unnecessary. Because the film does not require spray coating, no coating is lost, i.e. there is no overspray. The time factor is the decisive argument: Finished components required a long and complex drying process to cure the coating film. The result now are attractive surfaces that can be produced quickly, efficiently and cost-effectively. The films can then be printed on the reverse side or otherwise decorated in a subsequent step.

HIGH-PERFORMANCE GRADES FOR SHORT PROCESSES

Simpler process as a result of earlier coating process (no coating line necessary)

No overspray and fewer rejects when coating

Eliminates time-consuming component drying (80 °C, 30 min.) required with conventional coating

Films can also be decorated on the reverse

COMFORTABLE AMBIENCE WITH NEW SAFETY ASPECTS

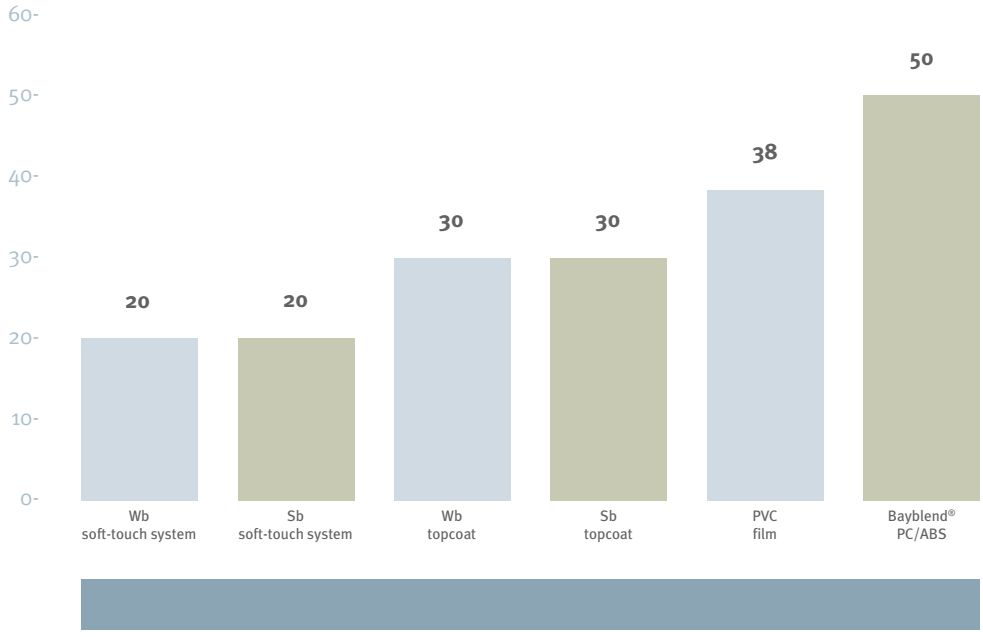
The demands placed on surface coatings by the automotive industry are especially stringent. Safety criteria must be fulfilled in addition to aesthetic and haptic criteria. Soft-touch coatings produce highly matte surfaces in automotive interiors. This avoids annoying reflections that could adversely affect road safety. Door panels, steering wheels, cockpits and center consoles with soft-touch surfaces from Bayer MaterialScience can be found today in many automobiles, from A for Audi to V for Volkswagen.

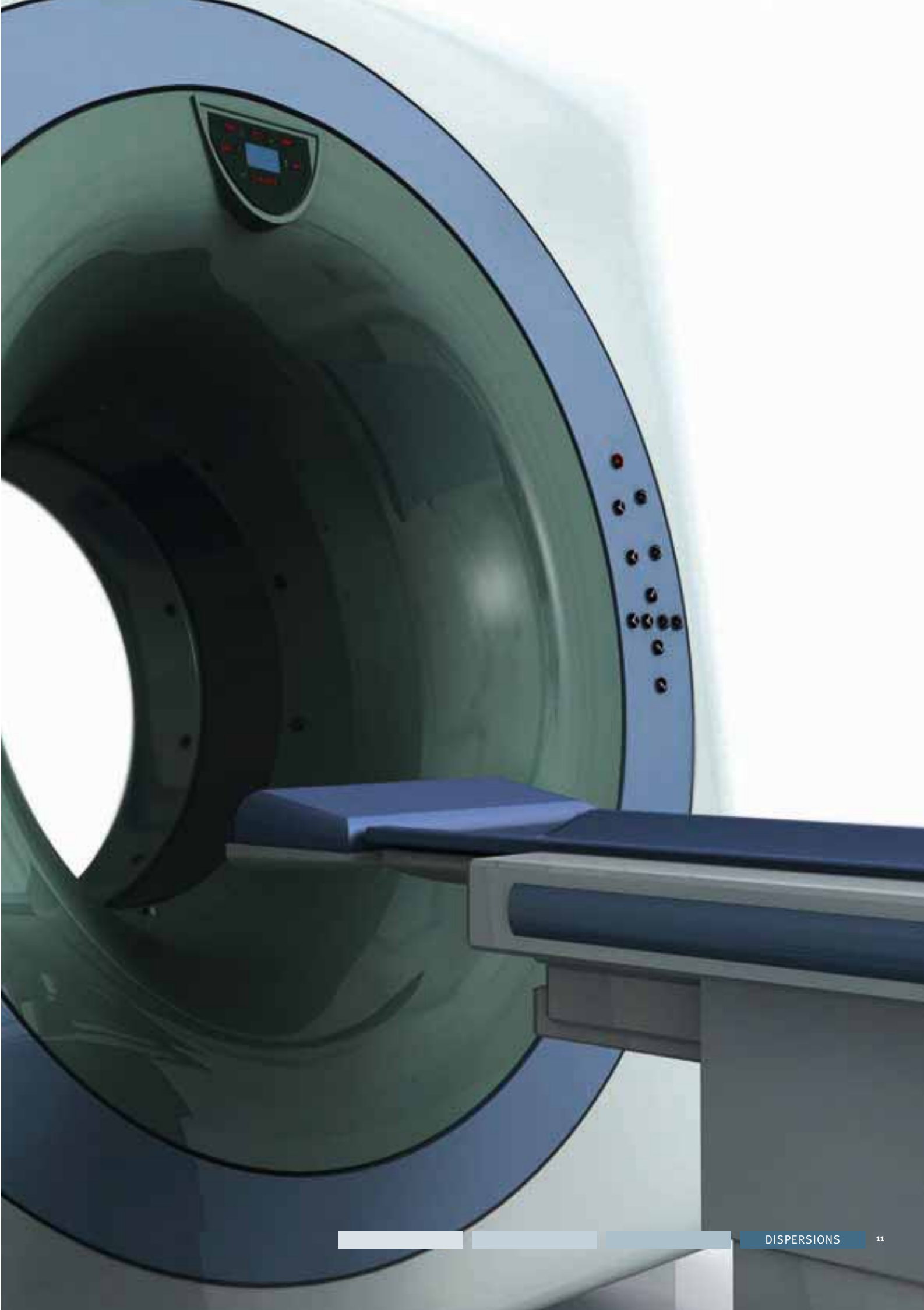
EXTREMELY TOUGH, BUT GENTLE ON THE SKIN

Whether on a steering wheel, furniture or a vacuum cleaner, soft-touch surfaces from Bayer MaterialScience are not only attractive and velvety to the touch, they must also be tough enough to stand up to years of daily use. Our soft-touch grades are therefore formulated to be particularly resistant to abrasion and scratching. Soft-touch coatings also make surfaces of medical devices and such as MRI and CT scanners particularly agreeable to the skin. This prevents a “cold shock” upon initial contact with the skin and makes the examination procedure more pleasant overall for the patient. Because all medical devices must also meet stringent hygiene requirements, our soft-touch coatings are not only extremely easy to clean, they are also resistant to solvent-based cleaners and disinfectants.

HIGH ABRASION RESISTANCE

Taber abrasion CS 10/mg





ENVIRONMENT-FRIENDLY AND INDESTRUCTIBLE

Pleasant tactile sensations – particularly in a car interior – are only worth something if they are combined with an equally pleasant "atmosphere". Waterborne soft-touch coatings formulated with Bayer raw materials have very low emissions. In addition, they are applied only in thin coats and, unlike some plastic skins, they contain no plasticizers. The weaknesses that plagued the first generation of soft-touch coatings introduced to the market in the 1990s have since been eliminated. Years of exposure to moist, hot air "aged" them, changing their original haptic characteristics and their resistance to cleaning agents. The coatings were also susceptible to damage by light and contact with hand creams or sunscreens. Thanks to intensive development work by our Business Unit in keeping with our motto "Vision Works", we can now offer products for waterborne soft-touch coatings that satisfy even stringent requirements for resistance to moisture, yellowing and chemicals. Our innovation solutions turn visions into reality.


F2
F3
F4
F5
F6
§ 3
$ 4
% 5
& 6
/ 7
W
E €
R
T
Z
S
O
F
T
–
X
C
V
B

DO YOU FEEL THE DIFFERENCE?

Applications for soft-touch coatings are as diverse as today's products. You can feel the difference on this computer keyboard. Just let your fingers dance across the keys!

Are you currently working on a new product or product refinement? Our applications consultants would be happy to support you. Please contact us if you would like more detailed information or have specific questions about our soft-touch product line.

Uwe Klippert
Phone: +49 (0)214 30-71321
uwe.klippert@bayerbms.com

Bayer MaterialScience

Bayer MaterialScience AG
51368 Leverkusen
Germany

www.bayermaterialscience.com
cas@bayermaterialscience.com

Edition: 2008-06 · Order-No.: MS00038520 · Printed in Germany · D