

DUROPAL microPLUS® - Questions and Answers

Q: What is the need for DUROPAL microPLUS®?

A: (Mrs. Gundula Wagner, Pfeleiderer R&D): There is a need for additional protection with microPLUS® against bacteria in many areas – a challenge that presents itself not only in the health and care sectors. We met this market challenge and developed the DUROPAL microPlus® surface finish. This new surface finish provides additional protection against bacteria, but does not lose the advantages of a traditional HPL.

Q: What are the main areas of application for DUROPAL microPLUS®?

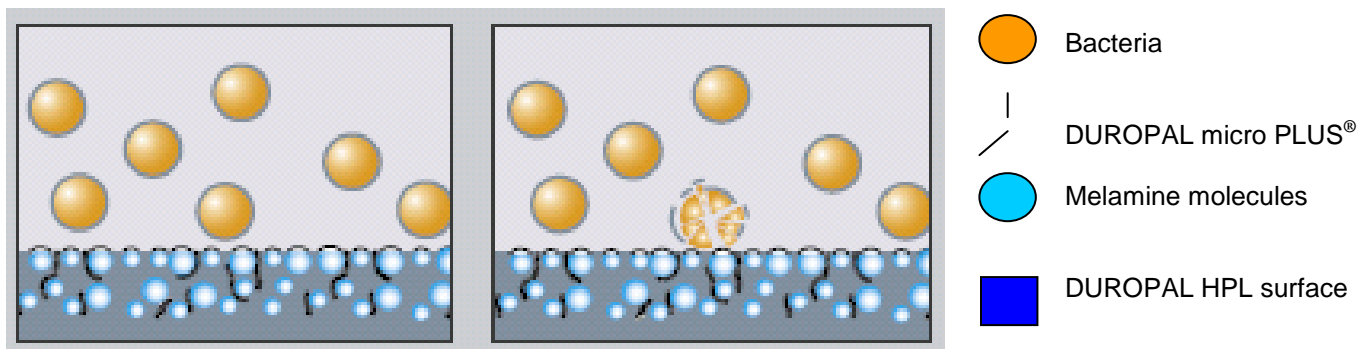
A: (Excerpt from HPL magazine: Three questions to Dr. Kurt Nonninger): First and foremost it is used in hospitals, but also in buildings frequented by the public, i.e. in places where bacteria can spread rapidly. Here it is important that the accumulation of bacteria e.g. through touching a surface is reduced considerably. Or let us think of wellness areas and swimming pools, especially the changing rooms. DUROPAL microPLUS® efficiently prevents the risk of bacteria transfer in these areas. Bathrooms and kitchens in private households may of course also be equipped with DUROPAL microPLUS®.

Q: How does DUROPAL microPlus® work?

A: (Mrs. Gundula Wagner, Pfeleiderer R&D): When bacteria come into contact with the DUROPAL microPLUS® surface essential functions of the micro-organisms are disturbed, the bacterial replication is stopped and the bacteria die. We rely on a combination of tested ingredients also used in shampoos, toothpastes and skin crèmes.

Q: How effective is DUROPAL microPlus®?

A: (Mr. Herbert Klein, Pfeleiderer R&D): Predefined test germs are placed on a testing board and are analysed after 24 hours. The DUROPAL microPLUS® had been optimised until a significant reduction of germs of at least 99 % was achieved. To make it clearer: A test surface e.g. is prepared with 10,000 bacteria. After approximately 24 hours 0 – 10 bacteria remain on the surface. This is a reduction of 3-4 decimal points.



Q: Which germs have been tested?

A: (Mr. Herbert Klein, Pfeleiderer R&D): Pseudomonas aeruginosa, staphylococcus aureus, salmonella choleraesius and escherichia coli. These bacteria, found in the foods industry and the medical sector, are very representative groups of test germs.

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Q: Does the effectiveness of microPLUS® change when the surface is damaged?

A: (Certificate of antibacterial effectiveness of DUROPAL microPLUS®, SGS Institut Fresenius GmbH): The examination of the long-term effectiveness of DUROPAL microPLUS® products with antibacterial treatment obtained exclusively positive results in all test variations. In a life-cycle simulation test DUROPAL microPLUS® surfaces were subjected to a maximum level damage test. The antibacterial effectiveness was kept entirely throughout the process.

Q: Can the antibacterial agents of the DUROPAL microPLUS® surface dissolve?

A: (Mrs. Gundula Wagner, Pfeleiderer R&D): The agents are fully inherent inside the surface. Any dissolution into the air or transfer to foods does not take place. This has been proven in various analyses carried out by external institutions.

Q: Does a DUROPAL microPLUS® surface need to be cleaned at all?

A: (Mrs. Gundula Wagner, Pfeleiderer R&D): DUROPAL microPLUS® surfaces certainly need to be cleaned. The antibacterial coating does in no case substitute cleaning. It only provides an additional stable and reliable protection against bacteria.

Q: Which certificates for the DUROPAL microPLUS® are available and which ones are in preparation?

A:

- SGS Institut Fresenius GmbH - Certificate of antibacterial effectiveness and its long-term effectiveness, available in German and English
- ISEGA Forschungs- und Untersuchungs-Gesellschaft mbH (ISEGA research and testing institute) - Declaration of no objection, available in German and English
- Testing of ambient air quality – no abnormality detected. Certificate pending
- Toxicological expertise – no abnormality detected. Certificate pending.

Q: Where can I find further information regarding DUROPAL microPLUS®?

A:

- HPL Magazine, pages 52/53: Three questions to Dr. Kurt Nonninger – The new antibacterial surface DUROPAL microPLUS®
- In aforementioned certificates
- Further information may be requested from DUROPAL Product Management.

Arnsberg, 25/04/07

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