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QUESTION AND ANSWER



FreshUp

BOSCH PLASMA TECHNOLOGY

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01. What is FreshUp?

The Bosch FreshUp is a revolutionary technical solution for refreshing clothes without washing them. The compact and portable device is the first one to work with Bosch Plasma Technology. It dissolves odour molecules and enables you to remove unpleasant odours from common dry textiles in an instant – no matter where you are and without using any chemicals. With Smart Plasma Management, the Bosch FreshUp controls the power of Bosch Plasma Technology to ensure optimum results even for delicate textiles. Thus, the FreshUp makes daily life easier and more convenient.

02. Is the Bosch FreshUp a more sustainable alternative to other methods of odour reduction/removal?

Unlike other methods, the FreshUp does not use any water or chemicals to remove odours from textiles. Instead, it uses Bosch Plasma Technology to dissolve odour molecules. Using the FreshUp can reduce the amount of washing required and thereby lower your water and detergent consumption. Less washing can also preserve the quality of clothes in the long run. Additionally, it reduces the need to bring clothes to the dry cleaner.

03. Does FreshUp make any noise?

The FreshUp is very silent when in use. The only sound you can hear is a light hissing sound when the movable plasma bar is gently pressed onto the fabric and the Bosch Plasma Technology is activated.

04. What are the measurements and weight of FreshUp?

The Bosch FreshUp is 16 cm in length, 6.5 cm in width and has a thickness of 3.7 cm. It weighs only 200 g, making it especially perfect for on-the-go use.

05. What do I need this for?

Unpleasant smells from clothes can make people feel uncomfortable when around others. With the portable and compact Bosch FreshUp, you can remove unpleasant odours from your clothes in an instant – anywhere, anytime, without washing them, and while dissolving smells without the use of any added chemicals.

As a valuable help at home, the FreshUp can revive clothes from the so-called chardrobe. This means worn clothes that are too clean to wash, but are no longer fresh enough to put them back into the wardrobe. The FreshUp can easily refresh these textiles with just a wipe. The new technology is also a more gentle option for odour removal than washing – especially for delicate clothes like silk or wool which can easily lose structure or colour intensity during washing.

However, the FreshUp is also useful on-the-go as it refreshes clothes in an instant and even while wearing them. This way, you can remove unpleasant odours from your clothes whenever and wherever you want to feel fresh again – whether it is at work, preparing for the next important meeting, while travelling (on business), or before meeting friends and going out.

06. Can I treat wet or damp textiles?

The treatment of wet or damp textiles is not possible. The Smart Plasma Management recognises if the textile is not dry enough during application and will not activate the plasma in that case. The plasma colour indication will then flash purple. We recommend drying the textile before continuing treatment.

07. Can it remove odours from my skin or hair?

The FreshUp is not intended to be used directly on skin, hair, leather, or fur – only on all common dry textile surfaces. However, it is possible to refresh your clothes while still wearing them. The use of FreshUp while wearing a garment is harmless for the skin as extensive tests of the Universitätsklinikum Regensburg according to the HGPRT assay and apoptosis assay have shown.

08. Can I also use it on any textile like a cushion, teddy bear or sofa?

The FreshUp can be used on all common dry textile surfaces, no matter if it is a cushion or a shirt. It is optimised for thorough and gentle odour removal from clothes but also from other smaller items such as a cushion or a kids' teddy bear. The FreshUp cannot be used on leather, fur, metal fibres, foam, or any other non-textile surface, including skin, hair or animals.

09. Is it safe to use on delicate textiles such as wool or silk?

You can use the FreshUp on all common dry textiles, also delicate ones such as wool, cashmere, or silk that you don't want to wash. It cannot be used on leather, fur, metal fibres, foam or any other non-textile surfaces, including skin, hair and animals.

10. Does it also work on leather?

No, the FreshUp cannot be used on leather. It can only be used on all common dry textile surfaces – including delicate ones.

11. Can I use the FreshUp on special pieces of clothing like baby clothes or my winter coat?

Bosch Plasma Technology works without added chemicals and is also safe to use on kids' clothes and soft toys. The device is optimised for thorough and gentle odour removal from common dry textiles as well as functional wear. On thicker textiles, it can be necessary to apply the device from outside and inside to remove odours more thoroughly. Waterproof textiles may also reduce the odour removal effect.

12. How long does it take to treat a complete shirt?

As odours are only removed from spots that were directly treated with the plasma treatment area, it might be sufficient to treat only locally-concentrated odours such as body odour under the armpit. If an entire shirt smells of cigarette smoke, for example, we recommend treating the entire shirt. Refreshing a T-shirt, for example, will take around two minutes, a pullover around five minutes. The exact duration, however, depends on several factors:

1. the intensity of the odour
2. the thickness of the textile
3. the size of the garment
4. individual odour sensitivity

13. Does it remove stains?

No, the FreshUp removes odours from textiles, but not stains. However, it can reduce the amount of washing required because clothes often lose their freshness even though they are not dirty yet.

14. Does it replace the washing machine?

Without the use of chemicals, FreshUp removes odours from any common dry textile in an instant but does not clean them the same way washing machines do – i.e. it does not remove stains.

15. Does it replace deodorant or showering?

No, the device works differently from a deodorant and is not supposed to be used on skin. It does not reduce odours on the skin and has no anti-transpiring function. For this reason, it cannot be compared to a deodorant. However, it helps where unpleasant odours develop on clothes, despite a deodorant.

16. Is the FreshUp kinder to sensitive clothes like suits than steaming?

We cannot tell for sure how harmful other technical solutions are, but we can confirm for the FreshUp that, thanks to the Smart Plasma Management, users don't need to worry about damaging their clothes' fibres – it is safe even for delicate ones like silk or wool.

17. Can the FreshUp remove bacteria?

The Bosch FreshUp was developed and optimised for thorough and gentle odour removal from common dry textiles. With Bosch Plasma Technology, odour molecules are dissolved and do not rebuild themselves, so the odour is removed. We are aware that hygiene would be a great field of application, too. To make sure that we meet the highest standards, we are thoroughly testing the impact the FreshUp can have on bacteria removal from common dry textiles. As for now, we kindly ask you for a little bit more patience and will give you an update on our findings as soon as we can say more.

18. Which specific consumer needs does FreshUp fulfil?

In times where we pay more attention to hygiene in everyday life, we've also started focussing more on how to hygienically treat our clothes. With the portable and compact Bosch FreshUp, consumers can effectively remove unpleasant odours and up to 99.9%* of bacteria and viruses from common dry textiles with just a wipe – anywhere, anytime, without washing them, and without the use of any added chemicals.

The FreshUp is a valuable helper at home and on the go when it comes to odour removal. For example, the device can revive clothes from the so-called chaidrobe. Meaning: worn clothes that are too clean to wash, but are no longer fresh enough to put them back into the wardrobe. The device can easily refresh these textiles with just a wipe. Additionally, the FreshUp frees clothes from up to 99.9% of bacteria and viruses.*

Bosch Plasma Technology is a more gentle option for odour, bacteria, and virus removal than washing or UV light – especially for delicate clothes like silk which can easily lose structure or colour intensity during washing.

* Effectiveness against bacteria (e. g. Staphylococci incl. MRSA and VRSA, Streptococci, Enterococci incl. VRE, E. coli bacteria incl. EHEC, EPEC, ETEC, EIEC, EAEC, ESBL/MRGN, DAEC) and viruses (e. g. SARS-CoV, vaccinia virus, HBV, HCV, HIV, influenza H5N1, H1N1, herpes, measles, rabies) confirmed by the independent institute HygCen Germany, according to test [2021-2948, 2021-2949; SN 32436] commissioned by BSH Hausgeräte GmbH. Up to 99.9% reduction of bacteria and viruses after 1 minute of application with the FreshUp on silk and after 5 min on cotton. Test organisms to prove efficacy: E. coli and S. aureus, Modified Vaccinia Virus Ankara (MVA).

** The use of FreshUp while wearing a garment is harmless for the skin as extensive tests of the Universitätsklinikum Regensburg according to the HGPRT assay and apoptosis assay have shown.

19. How do I use FreshUp?

The FreshUp is made to conveniently refresh common dry textiles in an instant, wherever you are. You can either refresh your clothes while wearing them or by just spreading them out on a soft surface. We have made it very easy to use the device via three simple steps:

1. Press the on-off button for one second to turn on the device. The plasma colour indication will glow white and the device is ready to use.
2. Gently press the device onto the fabric to activate Bosch Plasma Technology. The movable activation bar needs to be pressed in and stay in direct contact with the fabric to activate Bosch Plasma Technology. As soon as the plasma is active, the plasma colour indication will turn purple.
3. Then wipe over the fabric while continuing to press and move – do not hold the FreshUp still on one spot. The odours will be removed from spots that have been treated with the plasma treatment area.

A plasma smell signals that plasma was active and odours were removed. The smell will fade away after a few minutes.

20. Does the device need contact with the fabric?

Yes, the movable activation bar needs to have direct contact with the fabric. Gently press the activation bar onto the fabric to activate Bosch Plasma Technology. Then slowly wipe over the fabric while continuing to press inward. Continue moving and do not hold the device still on one spot.

21. Do I need to undress in order to refresh my clothes?

Bosch Plasma Technology is safe to use, even while wearing clothes that need treatment, which is especially convenient on the go. It should not be used on skin or hair directly, though.

22. Will the odour come back after some time?

In contrast to other solutions, which only cover the odour, Bosch Plasma Technology dissolves odour molecules. The molecules do not rebuild themselves, so the odour is removed. However, in case of very thick materials and stubborn odours, plasma may not reach deeper textile layers. In this case, you might notice a residual odour. If so, you can wipe over the textile again. If possible, you can also treat the piece from the outside and inside and shake out the garment between two applications.

23. Right after the treatment I can smell something different. What is this and will this new smell stay?

When activating the Plasma Technology, plasma also reacts with the oxygen in the air, which creates the plasma smell that develops during application. However, this smell evaporates after a while. Shaking out or airing the textile speeds up this process.

24. Does it work with any kind of odour?

The FreshUp is able to dissolve odour molecules from body odour and odours of food, cigarettes, deodorant, musty or smoky smells, for example. However, the smell of some (not all) perfumes might remain if they are especially long lasting and intense. In this case, the odour molecules might be too complex and strong to be broken up.

25. I used it but my clothes are still smelly. Why?

With thicker textiles or more stubborn odours, it can be necessary to treat your clothes from both sides to remove odours more thoroughly. The odour-removal effect might be reduced on waterproof textiles. For an especially thorough treatment of a spot or piece of

clothing, wipe over the affected area more often and more slowly. Do not keep the device still on one spot and make sure the plasma treatment area is in direct contact with the fabric. For optimal results, shake out the garment between two applications.

26. How can I achieve the best possible odour removal?

1. For a thorough treatment of a spot or piece of clothing, wipe over the affected area frequently and slowly. Do not keep the device still on one spot.
2. Treat garments from the outside and inside for a more thorough odour removal, especially in the case of thicker materials or seams.
3. The best treatment for areas affected by the smell of body odour is from the inside, since the odour also becomes attached to the clothes from inside.
4. With more time and for treating particularly intense odours: Treat the garment with the FreshUp, air it for some time and treat it with the FreshUp once more. Airing in between makes deeply rooted odours more accessible.

27. What are the three most important product advantages? What are the FreshUp's benefits compared to other solutions?

Thanks to the Bosch Plasma Technology, the FreshUp offers instant odour removal with just a wipe and without any added chemicals leaving common dry textiles refreshed without washing. The most important product advantages are:

1. The FreshUp is easy to handle and works very fast: press, wipe, refresh. You get a refreshed textile item in an instant.
2. It is portable: Due to its compact size, you can remove odours from textiles whenever and wherever needed – even while wearing the items you want to refresh.
3. Treatment with FreshUp is safe and without added chemicals: Bosch Plasma Technology is physics applied in a smart way – no added chemicals are required. It always ensures that the right level of plasma power is applied so that the FreshUp does not damage any textiles – even delicate ones.

28. What is Plasma?

Plasma in general is the fourth state of matter, coming after solid, liquid and gas. Plasma occurs naturally in lightning, the northern lights and the sun, for example. In fact, more than 90% of our universe in space is plasma. Plasma can also be generated artificially. In our case plasma is generated through ionisation (breaking up ions), which produces charged particles (electrons, protons...). These charged particles form the plasma.

29. How does Bosch Plasma Technology work?

The charged plasma particles flow along the textile fibres and dissolve the connections of simple molecules such as odour molecules. This way, the odour molecules are broken up and will not assemble back into their original structure.

30. How does the FreshUp know what it should dissolve and what not?

Thanks to Smart Plasma Management, the Bosch Plasma Technology is calibrated in a way that only simple molecule structures such as odours are dissolved. It is not powerful enough to break up strong or complex structures such as textile fibres.

31. What happens with the remains of the odour molecules?

Odour molecules are broken up and won't assemble back into their original structure. Hence, they cannot be recognized as odours anymore.

32. Does the device use UV light of any sort?

Known as the fourth state of matter, plasma is found throughout our universe – in the stars, the sun, and lightning bolts. Plasma can also be generated artificially. In our case plasma is generated through ionisation (breaking up ions), which produces charged particles (electrons, protons...). These charged particles form the plasma and dissolve the connections of simple odour molecules. Low concentrations of UV light and ozone occur as a natural bi-product. However, the small amounts of UV light and ozone are harmless to the human organism. Innovative Bosch Plasma Technology does not use UV light or ozone but the power of charged plasma particles to dissolve odour molecules on clothes and textiles.

33. What is the difference between Plasma Technology and steaming?

When using steaming in the realm of hygiene, users need to ensure a dry environment during the drying process. That is because drying clothes in a humid environment after steaming can have the opposite effect and even promote the growth of bacteria. Steaming cannot be used on waterproof material or temperature sensitive textiles. Furthermore, a water tank and more energy is needed, which makes it less handy to use – especially on the go. The portable Bosch FreshUp effectively removes up to 99.9% of bacteria and viruses on textiles.* It uses plasma technology to damage the cell membrane of bacteria and viruses which renders them harmless. Consumers can use the FreshUp also on delicate clothes – wherever they are and even while wearing them.**

* Effectiveness against bacteria (e. g. Staphylococci incl. MRSA and VRSA, Streptococci, Enterococci incl. VRE, E. coli bacteria incl. EHEC, EPEC, ETEC, EIEC, EAEC, ESBL/MRGN, DAEC) and viruses (e. g. SARS-CoV, vaccinia virus, HBV, HCV, HIV, influenza H5N1, H1N1, herpes, measles, rabies) confirmed by the independent institute HygCen Germany, according to test [2021-2948, 2021-2949; SN 32436] commissioned by BSH Hausgeräte GmbH. Up to 99.9% reduction of bacteria and viruses after 1 minute of application with the FreshUp on silk and after 5 min on cotton. Test organisms to prove efficacy: E. coli and S. aureus, Modified Vaccinia Virus Ankara (MVA).

** The use of FreshUp while wearing a garment is harmless for the skin as extensive tests of the Universitätsklinikum Regensburg according to the HGPRT assay and apoptosis assay have shown.

34. Which accessories come with the Bosch FreshUp? Do I need to buy anything extra?

The Bosch FreshUp comes with everything you need to refresh your favourite clothes whenever and wherever you like. Besides the device itself, we provide you with an elegant protection sleeve to protect your FreshUp from scratches – extra compact to easily fit in every bag. A charging adapter with cable to charge the FreshUp on-the-go or at home is included as well. We are already working on great additional extras to further personalise your FreshUp-experience in the future – so stay tuned.

35. How can I store the FreshUp securely? Is a sleeve included?

The Bosch FreshUp comes with an elegant protection sleeve to securely store the device and protect it from scratches. We designed it to be extra flat and space-saving so it can easily fit into most bags or purses and is ready for usage whenever you need to refresh your clothes.

36. Does the FreshUp run out of plasma? Does it need to be refilled at some point?

The FreshUp's battery only needs to be charged to operate and can easily be recharged with the included charging adapter. No specific maintenance or additional substances are needed.

37. What's the runtime of Bosch FreshUp?

With a fully-charged battery, the FreshUp can run and refresh textiles for up to 60 minutes. Considering that refreshing a regular piece of clothing takes between 2 and 5 minutes, one battery charge lasts for many refreshed items.

38. How do I charge FreshUp and how long does it take to fully charge?

You can easily charge your FreshUp with the included charging adapter and Micro-USB cable. When the battery is empty, it can be fully recharged in 3 to 4 hours.

39. Can the battery be replaced if needed?

In case you experience a problem with the battery, you can contact the Bosch customer service. They will let you know if replacing battery is advisable. If so, they will provide you with further instructions about where to send your FreshUp for repair.

40. Can I over charge it and what is the life time of the battery?

The Bosch FreshUp comes with a standard 2 year warranty. This also includes the appliance's battery. The battery's lifespan depends on individual usage frequency and intensity of the device.

41. What's the expected lifetime?

As for all technical devices, their lifetime very much depends on usage frequency, handling and transport. However, Bosch has been known for their high quality standards for decades. The FreshUp comes with a standard warranty of 2 years. The battery and plasma electrode are exchangeable through customer service.

42. Can I use it when I'm pregnant?

Thorough testing has shown that the FreshUp does not harm the body or skin during intended usage. Nevertheless, we did not conduct tests specifically for use during pregnancy. Therefore, we cannot recommend it to pregnant women.

43. Is FreshUp safe to use on any kind of fabric or could it damage the fibres of my clothes?

We have thoroughly tested the FreshUp on the most common types of fabrics such as polyester and cotton and extra delicate ones like wool or silk to ensure safety for all common dry textiles. Moreover, internal tests show that there is no risk of decolouring if you use the FreshUp according to the instructions.

44. Can the FreshUp be transported in a handbag or on the airplane? What happens if it switches on in the bag?

Yes, you can carry the FreshUp in your handbag or take it with you on the airplane, but you should not use the appliance during a flight. For specific baggage allowance, please check with your airline prior to your flight.

You can simply use the protection sleeve to protect the device and the plasma treatment area from hits and scratches. There are also several safety features installed that prevent the FreshUp from switching on unintentionally when on the go.

45. Is it safe to use the device directly on the clothes while wearing them if I have a cardiac pacemaker?

The Bosch FreshUp is safe, tested and approved for electromagnetic compatibility (EMC). However, we did not conduct any specific tests with cardiac pacemakers. Therefore, we do not recommend using the device while having a cardiac pacemaker implanted.

46. What happens if I leave FreshUp on a spot for a longer time?

FreshUp only activates plasma when the device is in motion. By constantly wiping sideways and moving the device, you make sure to use the full width of the plasma treatment area and to remove odours from fabrics effectively. A movement sensor will track if the FreshUp is moved and will turn off the plasma if there is no movement detected for too long.

47. Is there any recommended maximum of times I can use it on a piece of clothing?

No, the Bosch FreshUp can be used on a piece of clothing or fabric as often as needed since the plasma is completely harmless to textile fibres.

48. Can FreshUp get too hot?

No, the device cannot get too hot. We use cold plasma. Additionally, Smart Plasma Management controls the plasma power to ensure optimum results, a safe usage and even allows for the treatment of delicate textiles.

49. My FreshUp got wet, what should I do?

In this case, please don't turn on the device or connect it to the socket. Use a soft cloth to gently dry the shell and let it rest for a couple of hours. Then try to turn on the device and apply it to any type of common textile. If it won't turn on, please contact our customer service for further assistance.

50. Can I use it while it is charging?

No, FreshUp cannot be used while it is charging.

51. Does it affect other technical devices in my pocket/bag?

No. The Bosch FreshUp does not emit any kind of electromagnetic radiation that could affect other technical devices in your bags. That's why you can take your FreshUp and carry it in your bag wherever you like.

52. What happens if I accidentally use it on my skin?

Using the FreshUp on skin is technically not possible as Smart Plasma Management with its safety mechanism will prevent it from activating the Bosch Plasma Technology. If you try to apply the FreshUp to your skin, the Smart Plasma Management will recognise it and shut off the device immediately. Due to safety precautions, it should still be kept away from children at all times.

53. Can kids use it on their clothes?

Even though the FreshUp has been confirmed to be safe to use while wearing clothes by an independent research institute, it should not be used by small children under the age of 8. As with all electrical products designed for adults, you should keep the FreshUp away from children at all times.

54. Does the use of Plasma have any kind of effect on the human body?

The Bosch FreshUp is safe to use, even while wearing clothes. It has been confirmed by an independent research institute that the device does not harm the body or skin during intended usage.

55. Can FreshUp be used in extreme temperatures like extreme cold or heat?

The FreshUp is best used in a temperature range between -5 and +40 °C.

56. Is the FreshUp safe for myself when I use it while wearing clothes that need to be refreshed?

Bosch Plasma Technology is safe to use, even while wearing clothes that need treatment, which is especially convenient on the go. It should not be used on skin or hair directly, though.

57. I can feel a prickling on my skin/discharges on my body when using the Bosch FreshUp? Is this harmful/dangerous? How do I use the FreshUp safely and correctly?

You might know prickling and discharges from some situations in everyday life – for example when touching a car or a doorknob. The phenomena that can occur with the FreshUp are similar to these discharges. In general, they are harmless for the human body yet occasionally feel unpleasant. Of course, we comply with the guidelines regarding the protective impedance that apply in this case (max. allowed: 0.7 mA; FreshUp: 0.1 mA).

You can use the FreshUp safely when following the hints below:

1. When in use, always touch both silver stripes on the FreshUp's sides.
2. Only refreshen clothes on yourself.
3. Do not use the FreshUp on others – especially children – to refreshen their clothes while they are wearing them.
4. Do not use on the skin; only on common dry textiles.

58. Can discharges ruin my textile?

Discharges can only occur when not touching the FreshUp's silver stripes. If discharges happen, in very unlikely cases a tiny black dot (< 1 mm²) can be spotted on the textile. To avoid discharges in the first place, always touch the silver stripes when using the device.

59. Why do discharges happen with the FreshUp

The phenomena that can occur with the FreshUp are similar to discharges in everyday life, for example when touching a car or a door knob. Within the FreshUp, the energy transmitted by the plasma source's electric field flows back to the battery via the silver stripes at the sides of the FreshUp. To ensure this process of potential equalisation to the appliance (battery) and to close the circuit, it is mandatory for the user to always touch both silver stripes when the FreshUp is in power mode. Not touching the silver stripes can lead to prickling, discharges and – in very unlikely circumstances – tiny burns on the skin (<1mm²). These phenomena are unpleasant but not dangerous for the human body. Of course, we comply with the guidelines regarding the protective impedance that apply in this case (max. allowed: 0.7 mA; FreshUp: 0.1 mA).

When using the FreshUp, also make sure to only refreshen clothes on yourself while you are wearing them or on clothes laying on a flat surface. Do not use the FreshUp on your skin.

60. What happens if I don't touch the silver stripes?

When using the FreshUp without touching the silver stripes, prickling or electric discharges can occur in some cases and under specific circumstances. In general, these discharges are harmless for the human body yet occasionally feel unpleasant. To avoid discharges, always touch the silver stripes when using the device.

61. Where is the device produced?

Our innovative FreshUp is developed and made in Germany. As with all production sites worldwide, we have the highest standards to meet our customers' expectations regarding quality and reliability. For the Bosch FreshUp, these standards result in a revolutionary solution to remove unpleasant odours from common dry textiles.

62. What materials is the FreshUp made of?

Bosch has been known for high-quality and reliable products for decades – a standard we also adopted for the FreshUp. Since the FreshUp is a portable device also made for on-the-go use, we chose light but resistant, long-lasting and thoroughly-tested materials to ensure you can use FreshUp conveniently and safely, whenever and wherever you like. For example, we use high-quality ceramic for the treatment area and the plasma source is gold-plated. To offer further protection, the FreshUp also comes with a premium and compact protection sleeve to protect the device from scratches when you carry it with you.

63. What is the legal warranty for the FreshUp?

The guarantee conditions for this appliance are as defined by our representative in the country in which it is sold. Details regarding these conditions can be obtained from the customer service.

64. Who can I contact if it breaks?

We have designed and built the device to last for years of use. If you still have any questions or issues with the device, please contact our customer service for assistance.

65. Is any maintenance or cleaning of the device required?

The FreshUp is very easy to maintain: Basically, all you need to do is to ensure that the batteries are recharged. There is no specific maintenance required, so no further costs will apply. You can clean the plasma area with a soft cloth only. In case of intense dirt, it can be removed from the plasma treatment area with a damp cloth.

66. How does plasma remove bacteria and viruses?

When plasma is active, it generates plasma particles. These charged plasma particles destroy the cell membrane of microorganisms like bacteria and viruses. They then become inactive and are therefore removed.

67. Can it remove bacteria and viruses from my skin?

The FreshUp is not intended to be used directly on skin, hair, leather, or fur – only on all common dry textile surfaces. However, it is possible to refresh your clothes while still wearing them.* The safety of our plasma has been confirmed by an independent research institute for this case.

* The use of FreshUp while wearing a garment is harmless for the skin as extensive tests of the Universitätsklinikum Regensburg according to the HGPRT assay and apoptosis assay have shown.

68. On what kind of surfaces can I remove bacteria and viruses?

The portable FreshUp can be used to effectively remove up to 99.9% of bacteria and viruses from all common dry textiles, including delicate ones such as silk.* It cannot be used on leather, fur, metal fibres, foam, or any other non-textile surfaces, including skin, hair, and animals.

* Effectiveness against bacteria (e. g. Staphylococci incl. MRSA and VRSA, Streptococci, Enterococci incl. VRE, E. coli bacteria incl. EHEC, EPEC, ETEC, EIEC, EAEC, ESBL/MRGN, DAEC) and viruses (e. g. SARS-CoV, vaccinia virus, HBV, HCV, HIV, influenza H5N1, H1N1, herpes, measles, rabies) confirmed by the independent institute HygCen Germany, according to test [2021-2948, 2021-2949; SN 32436] commissioned by BSH Hausgeräte GmbH. Up to 99.9% reduction of bacteria and viruses after 1 minute of application with the FreshUp on silk and after 5 min on cotton. Test organisms to prove efficacy: E. coli and S. aureus, Modified Vaccinia Virus Ankara (MVA).

69. How effective is the device? Does it kill all kinds of germs? How about bacteria? Does it also kill viruses?

The portable FreshUp effectively removes up to 99.9% of bacteria and viruses on textiles.* An independent research institute tested the effectiveness of the FreshUp when it comes to removing bacteria and viruses from clothes and other common dry textiles. This included tests with vaccinia ankaravirus, which is smallpox. These are representative for other types of so called "enveloped viruses" like SARS-CoV, vaccinia virus, HBV, HCV, HIV, influenza H5N1, H1N1, herpes, measles, rabies.*

* Effectiveness against bacteria (e. g. Staphylococci incl. MRSA and VRSA, Streptococci, Enterococci incl. VRE, E. coli bacteria incl. EHEC, EPEC, ETEC, EIEC, EAEC, ESBL/MRGN, DAEC) and viruses (e. g. SARS-CoV, vaccinia virus, HBV, HCV, HIV, influenza H5N1, H1N1, herpes, measles, rabies) confirmed by the independent institute HygCen Germany, according to test [2021-2948, 2021-2949; SN 32436] commissioned by BSH Hausgeräte GmbH. Up to 99.9% reduction of bacteria and viruses after 1 minute of application with the FreshUp on silk and after 5 min on cotton. Test organisms to prove efficacy: E. coli and S. aureus, Modified Vaccinia Virus Ankara (MVA).

70. Can I use it on mobile phones and work surfaces?

The FreshUp is only intended to be used on all common dry textiles, including delicate ones such as wool, cashmere, or silk that you don't want to wash. It can neither be used on leather, fur, metal fibres or foam nor on skin, hair and animals or other non-textile surfaces like plastic, metal, or further solid materials.

71. Can I use it for mask sterilisation?

In general, we do not advise you to use the FreshUp on any kind of face mask.

72. How long do I have to use it to remove all bacteria and viruses from my clothes?

For optimal results, it is necessary to bring your textile into direct contact with the plasma source by wiping over it constantly. We recommend moving the appliance naturally and in fluent motion. Test results by an independent research institute have shown that it is not the speed of wiping that influences plasma's effectiveness but the total duration of the textile being exposed to plasma particles. In order to foster proper bacteria and virus removal up to 99.9%, please wipe the FreshUp over the textile frequently and steadily.*

The needed application time very much depends on the fabric you treat. It takes longer to remove bacteria from thicker materials like cotton, and is quicker when treating thinner textiles like silk, for example.*

* Effectiveness against bacteria (e. g. Staphylococci incl. MRSA and VRSA, Streptococci, Enterococci incl. VRE, E. coli bacteria incl. EHEC, EPEC, ETEC, EIEC, EAEC, ESBL/MRGN, DAEC) and viruses (e. g. SARS-CoV, vaccinia virus, HBV, HCV, HIV, influenza H5N1, H1N1, herpes, measles, rabies) confirmed by the independent institute HygCen Germany, according to test [2021-2948, 2021-2949; SN 32436] commissioned by BSH Hausgeräte GmbH. Up to 99.9% reduction of bacteria and viruses after 1 minute of application with the FreshUp on silk and after 5 min on cotton. Test organisms to prove efficacy: E. coli and S. aureus, Modified Vaccinia Virus Ankara (MVA).

73. Can I use it on my mattress?

Yes, you can use the FreshUp on your mattress. However, the plasma is most effective on the very surface/the cover and doesn't reach into deeper areas of the mattress. This is due to the FreshUp's active length being comparably small in relation to mattresses.

74. Why is it necessary to remove bacteria and viruses from my clothes?

There are two aspects to this question:

1. Odour-causing bacteria in terms of body odour can be responsible for clothes smelling bad. Treating the textile with the FreshUp removes bacteria and unpleasant odours.
2. Textiles have the ability to host microbes. In this context, bacteria can contaminate clothes in different ways: through the wearer him- or herself, through contact with surfaces, or through aerosols – tiny particles suspended in air. A study has shown that soiled textiles can again contribute to the increase of bacteria in aerosols in indoor air and therefore lead to airborne bacteria exposure.* Using the FreshUp on textiles effectively removes up to 99.9% of bacteria and viruses on the treated textiles and can therefore reduce the contact to harmful influences.**

* Microbial aerosol liberation from soiled textiles isolated during routine residuals handling in a modern health care setting, Handorean et al. Microbiome (2015) 3:72

** Effectiveness against bacteria (e. g. Staphylococci incl. MRSA and VRSA, Streptococci, Enterococci incl. VRE, E. coli bacteria incl. EHEC, EPEC, ETEC, EIEC, EAEC, ESBL/MRGN, DAEC) and viruses (e. g. SARS-CoV, vaccinia virus, HBV, HCV, HIV, influenza H5N1, H1N1, herpes, measles, rabies) confirmed by the independent institute HygCen Germany, according to test [2021-2948, 2021-2949; SN 32436] commissioned by BSH Hausgeräte GmbH. Up to 99.9% reduction of bacteria and viruses after 1 minute of application with the FreshUp on silk and after 5 min on cotton. Test organisms to prove efficacy: E. coli and S. aureus, Modified Vaccinia Virus Ankara (MVA).

75. How do I know that all bacteria and viruses have been effectively removed?

The Bosch FreshUp itself cannot detect the amount of bacteria on surfaces. However, tests by an independent research institute have shown that up to 99.9% of bacteria and viruses are effectively removed.* In order to foster proper bacteria and virus removal, please wipe the FreshUp over the textile frequently and slowly. Do not keep the device still on one spot. Treating garments from the outside and inside ensures a more thorough removal of bacteria

and viruses, especially with thicker materials or seams. Repeated treatment makes deeply rooted bacteria and viruses more accessible. It is recommended to air your shirt between treatments.

* Effectiveness against bacteria (e.g. examples) and viruses (e.g. Coronavirus, hepatitis B/C, influenza, measles, rabies) confirmed by the independent institute HygCen, according to test [reference to report]. Up to 99.9% reduction after 1 min on silk and after 5 min on cotton. Test germs to prove efficacy: E. coli and S. aureus, vaccinia ankara.

76. Is the FreshUp able to kill the Covid-19 virus?

An independent research institute tested the effectiveness of the FreshUp when it comes to removing bacteria and viruses from clothes and other common dry textiles. This included tests with vaccinia ankara viruses, which is as smallpox. These are representative for other types of so called "enveloped viruses" like corona viruses. Therefore, it can be concluded that the FreshUp is also effective against the coronavirus. However, the institute did not specifically test removing corona viruses. Our research shows that our plasma technology can effectively remove up to 99.9% of bacteria and viruses on textiles.* Please be aware that FreshUp is only to be used on common dry textiles. Never use the device on your skin and body.

* Effectiveness against bacteria (e. g. Staphylococci incl. MRSA and VRSA, Streptococci, Enterococci incl. VRE, E. coli bacteria incl. EHEC, EPEC, ETEC, EIEC, EAEC, ESBL/MRGN, DAEC) and viruses (e. g. SARS-CoV, vaccinia virus, HBV, HCV, HIV, influenza H5N1, H1N1, herpes, measles, rabies) confirmed by the independent institute HygCen Germany, according to test [2021-2948, 2021-2949; SN 32436] commissioned by BSH Hausgeräte GmbH. Up to 99.9% reduction of bacteria and viruses after 1 minute of application with the FreshUp on silk and after 5 min on cotton. Test organisms to prove efficacy: E. coli and S. aureus, Modified Vaccinia Virus Ankara (MVA).

77. What is the difference between the FreshUp and other bacterial/virucidal chemicals?

In comparison to bacterial/virucidal chemicals, the FreshUp does not use chemical additives. Its effectiveness comes from a physical process. Compared to chemical methods, the FreshUp ensures very short contact times with the textile and therefore gentle treatment. The device is easy to handle and works very fast: press, wipe, refresh.

78. What's the difference between FreshUp and ozone sterilisation?

In this case, we need to distinguish between textile and room cleaning, as well as the different modes of action. Ozone is a chemical that oxidises bacteria. Ozone sterilisation is already used as a standard for sanitising buildings and rooms. It is not meant to be used when people are present.

The FreshUp generates plasma through ionisation (breaking up ions), which produces charged plasma particles (electrons, protons). These charged plasma particles form the plasma, which destroys bacteria's and viruses' cell membranes and therefore inactivates and removes them. Very low concentrations of UV light and ozone occur as a natural by-product of plasma creation. However, these small amounts are harmless to the human organism, far below statutory requirements, and the treatment is very gentle on all common dry textiles.

79. How can I achieve the best result in bacteria and virus removal?

For the most effective removal of bacteria and viruses, we recommend the following steps:

1. For a thorough treatment of clothing, wipe over the textile frequently and slowly. Do not keep the device still on one spot.
2. Treat garments from the outside and inside for a more thorough bacteria and virus removal, especially in the case of thicker materials or seams.
3. Treat the garment with the FreshUp, air it for some time and treat it with the FreshUp once again. A repeated treatment makes deeply rooted bacteria and viruses more accessible. Tests by an independent research institute have shown that FreshUp effectively removes up to 99.9% of bacteria and viruses on textiles.*

* Effectiveness against bacteria (e. g. Staphylococci incl. MRSA and VRSA, Streptococci, Enterococci incl. VRE, E. coli bacteria incl. EHEC, EPEC, ETEC, EIEC, EAEC, ESBL/MRGN, DAEC) and viruses (e. g. SARS-CoV, vaccinia virus, HBV, HCV, HIV, influenza H5N1, H1N1, herpes, measles, rabies) confirmed by the independent institute HygCen Germany, according to test [2021-2948, 2021-2949; SN 32436] commissioned by BSH Hausgeräte GmbH. Up to 99.9% reduction of bacteria and viruses after 1 minute of application with the FreshUp on silk and after 5 min on cotton. Test organisms to prove efficacy: E. coli and S. aureus, Modified Vaccinia Virus Ankara (MVA).

80. What is the difference between Plasma Technology and UVC Technology? What makes the sterilisation different to the use of UV light?

There are some major differences between these technologies regarding treatment and performance. When it comes to bacteria and virus removal, plasma technology is more effective than UVC. Depending on the textile, the FreshUp's micro discharges can reach up to 2 mm deep into the fabric. This enables plasma particles to spread into the space to effectively inactivate bacteria and viruses. UV light only removes germs on the surface of textiles and not within the fibres. Therefore, plasma frees common dry textiles more thoroughly from bacteria and viruses. In addition, plasma technology is safe for the human organism, whereas UVC can damage human skin and eye.