



## Information Brochure - DIAMOND

### The principle of PIKATEC DIAMOND nanocosmetics

The newest, the best and uncompromising – this is a new series of PIKATEC nanocosmetics. The assignment was clear – we want autocosmetics that can withstand cold arctic as well as hot equatorial extremes. We want maximum UV protection for lacquers! We want maximum hardness and abrasion resistance! We want maximum water resistance!

We want to seal pores in lacquer as much as possible for a period of one year. We want the shortest time possible for hardening and maximum resistance to industrial detergents. We want maximum thermal resistance. Simply put – we want to create the best and most resistant autocosmetics imaginable and, along the way, leave the production price to one side - this aspect will be addressed later, if necessary.

The PIKATEC DIAMOND series has been specially developed and produced from self-supporting emulsion and nanoparticles with a size of up to 30 nm (nm – a nanometre – one billionth of a metre), which are permanently dissolved in the liquid environment of the new generation cosmetic emulsion thanks to a special solvent. These solid particles contain silicon oxide, titanium oxide and zircon oxide. Together they improve the repelling properties in relation to liquids and resistance to mechanical surface wear and tear. Other unique components of PIKATEC DIAMOND autocosmetics provide a protective shield against other impurities, chemicals and salts. Moreover, the cosmetics provide the treated surface with a perfect UV filter and so prevent the aging of lacquer. The polish can withstand temperatures of over 700°C. This is the definition of the new PIKATEC DIAMOND autocosmetics.

*Image 1 – A surface with sedimentary impurities*

*Image 2 – Cleaning the surface with PIKATEC nanocosmetics*

*Image 3 – Cleaned surface*

*Image 4 – Applying PIKATEC application emulsion*

*Image 5 – Polishing PIKATEC application emulsion*

### 1<sup>st</sup> phase – cleaning the surface:

Imagine glass or lacquer surface under the microscope. It is not smooth; rather it resembles a rocky landscape. In the valleys of this landscape dust and dirt settle down in the long run (see image 1). Glass that has not been treated for a long time is hard to see through and untreated lacquer gives an impression that it has faded. Many people are not aware of this until a dirty piece of glass is put next to a cleaned one. Then the difference is obvious.

PIKATEC cosmetics perfectly clean this rocky landscape (the surface of lacquer or glass) and remove settled dust and dirt. This is thanks to the microscopic nanoparticles and other patented chemical elements contained in the cleaning solution. The nanoparticles penetrate all folds of the surface and perfectly remove dust and dirt from it (see image 2). Only after having been cleaned is the surface ready for the application of protective PIKATEC polish (see image 3). **The better cleaned, and especially degreased, the surface is,** the better the adhesiveness and resistance of the follow-up polish. When the surface is not degreased perfectly the polish's surface may exude grease for some time (this is manifested in a reduced repelling force in relation to water or in visible stains on the surface), which needs to be polished out and thus spread over the surface with a dry piece of cloth. This may be repeated several times, and then the polish should function correctly.

Another **important** factor **before the polish is applied** is that it is necessary **to eliminate all impurities and stains from the car body or glass by polishing them out with a dry cloth** (for example, dry stains left by water droplets)! The application and follow-up polishing of the polish would "preserve" these stains in the polish and subsequently it would be very difficult to remove them.

**CAUTION** – the most frequent reason for failures in application is when the surface that has not been properly degreased! The use of greasy preparations, such as clay or similar, or a preliminary washing of the car in an automatic car wash (where waste water with spray wax is usually recycled) may reduce the effect and shorten the service life of PIKATEC polish. Also air compressors, used to dry the car body, sometimes exude oil, which is used to lubricate the compressor's piston, along with the air – this is often the case unless the compressor is equipped with a filter.

Detailed instructions are enclosed with the Diamond Nano Shampoo and Diamond Nano Clear Glass products.

### **2<sup>nd</sup> phase – application of the polish (emulsion) on the surface:**

Unique nanoparticles are permanently dispersed in the application emulsion, which is applied in a very thin layer on the treated surface (see image 4). The applied amount should form a visible thin film. Applying more emulsion is pointless since it will be removed during polishing with cloth anyway. This would only make the polishing job more difficult and some of the lacquer would be simply wasted.

Let the film act on the surface for about 30 minutes (if the polish is applied to glass, start polishing it after 5 minutes). The polish will penetrate the lacquer's structure. After this time passes a layer of PIKATEC polish should be polished out with a piece of application cloth (see image 5). In this way the unique emulsion will penetrate deep into all the uneven parts of the bodywork (i.e. into all the valleys of the rocky landscape). Any layer protruding above the peaks is redundant and will be wiped away. Detailed instructions are enclosed with the Diamond Nano Armour, Diamond Nano Protect Wheel and Diamond Nano Protect Glass products.

### **3<sup>rd</sup> phase – one hour after application:**

The polish slowly dries from top to bottom and begins to exude emulsifier, which functions as a carrier for nanoparticles (with Diamond Nano Protect Glass polish no emulsifier is exuded). The unique PIKATEC nanoparticles settle into their final resting place on the surface. Each pole of an individual nanoparticle is polarised, i.e. each end has a different polar charge. This causes PIKATEC nanoparticles to line up in one direction, towards the substratum. The second direction (on the surface) also repels negatively charged particles of dust and other undesirable molecules.

*Image 6 – Final setting of the polish*

*Image 7 - Removal of exuded emulsifier, which needs to be properly washed away with water within 48 hours*

*Image 8 – Setting of PIKATEC polish*

*Image 9 – Damage to an untreated surface caused by a flying object*

### **4<sup>th</sup> phase – final setting:**

Within another 12 hours the emulsion reaches its final hardness. Nanoparticles are lined up on the surface and hold onto it due to van der Waals force and dispersive forces as well as naturally due to the new, revolutionary cosmetic emulsion. They form a protective film that significantly increases the hardness and resistance to adhesion of the bodywork. A final resistance to liquids is also achieved (see image 6). When setting takes place under low temperatures the time taken for the final hardening is slightly longer.

Unlike with the original formula of the previous series of PIKATEC cosmetics, a surface treated by PIKATEC DIAMOND polish may be exposed to solar radiation, light rain as well as frost down to a temperature of -5°C even after about 90 minutes. It is important to remember, however, that the polish reaches its final hardness only after 12 hours. Before that, heavy rain or an abrasive environment (e.g. a drive in a dusty environment) could disrupt the structure of the protective layer. In the meantime try to avoid using windscreen wipers which can do damage to the hardening polish - however, always observe the traffic rules!

### **5<sup>th</sup> phase – Removal of exuded emulsifier (this only applies to Diamond Nano Armour and Diamond Nano Protect Wheel polishes):**

During the setting phase you may, particularly on dark bodywork, observe the creation of light maps or small shadows that give the illusion that particles of dust have fallen onto the treated surface or that the polish has not been spread sufficiently. This is the result of the emulsifier being exuded (the carrier of nanoparticles) (see image 6). The emulsifier **has to be, after roughly 48 hours, thoroughly washed away with water** (especially in hot summer weather), after that it should be lightly spread out evenly with a piece of cloth. If the exuded emulsifier remains on the bodywork (you can tell by the bodywork's capability to repel water being reduced), it is possible that the emulsifier 'cakes' onto the polish and you may think that the polish isn't working, particularly in hot weather. In such cases it depends on how much the emulsifier has caked onto the polish: it may not be possible to remove it all, which would result in worse hydrophobic properties.

Therefore, take care to ensure that the emulsifier is thoroughly washed away. The polish only becomes highly resistant to water after this layer is washed away. With each subsequent washing these properties will improve for some time.

The nanoparticles on the surface form a protective invisible nanofilm of polarised particles that give the surface repelling and anti-adhesive qualities. This invisible transparent layer of nanoparticles (up to a thousand times thinner than a human hair) functions as a hard protective shield. It penetrates pores and microscopic cracks in lacquer and protects it from further damage. It levels the surface and reduces its aerodynamic resistance. Flying objects (dirt, dust etc.) will rebound easily from the layer of nanoparticles (see image 7) and do not create scratches and grooves (see image 8). The same applies to insects that come into contact with the bodywork.

The nanoparticles hold together perfectly. They are so small that no significantly larger particle of dust or other aggressive lacquer-damaging molecule can squeeze in between them. At the same time, the nanoparticles are hard

enough to withstand mechanical stresses from other flying abrasive particles, which would otherwise damage the surface.

PIKATEC polish will remain on the surface for a period of up to one year (sometimes even longer). It will give a high gloss to the bodywork's surface and protect it from scratches and from the effects of salts, bitumen, pollen, resin from trees and bird excrement. Protection from UV radiation, which may otherwise cause lacquer to fade, dry out and age prematurely, is also very important (the polish contains very strong UV filters).

**Image 10:** Lacquer of untreated bodywork magnified 5,000 times. You can see cracks in the lacquer's structure through which impurities, water and chemicals may damage the structure. Such damage, and the subsequent oxidizing, causes corrosion at the damaged spot. There is a scale in the bottom left corner of each picture that shows how big a micrometre (a millionth of a metre) is in this case!

**Image 11:** Car bodywork treated with new PIKATEC polish. Notice how perfectly the lacquer's pores are closed in comparison with the original series of cosmetics (in image 10). Magnification is 10,000 times, i.e. 2 times higher than in image 10 and the surface is significantly smoother and finer. Impurities cannot penetrate the lacquer's structure and thus the lacquer is protected. At the same time the polish is very hard and resistant to abrasion. It contains very strong UV filters that prevent UV radiation, which can cause it to age and degrade prematurely, from penetrating the lacquer. In the bottom left corner of every image there is a scale that shows how big a micrometre (a millionth of a metre) is in this case!

**Image 12:** Bodywork treated with original Pikatec cosmetics magnified 5,000 times. You can see the difference between **new** and old polish.

*Image 10 – lacquer of untreated bodywork magnified 5,000 times.*

*Image 11 – bodywork treated with the new PIKATEC polish.*

*Image 12 - bodywork treated with the original PIKATEC polish*

#### **Diamond Nano Shampoo – impurity remover, shampoo (150 ml)**

A new formula of nano-preparation that highlights lacquer. In the first phase it is used to clean and remove impurities before Diamond Nano Armour (nano-polish for car bodywork) is applied. In the second phase it is used to maintain the surface of the bodywork after Diamond Nano Armour has been applied and to prolong the service life of this polish. After the polish has been applied try to avoid the use of industrial detergents on the car if possible. (They often destroy all protective polishes and surfaces, including wax.) However, the new formula has also significantly improved the resistance to these detergents. A treated surface of the bodywork exposed to washing (20 times) with a very strong detergent solution has lost only 7 % of its hydrophobic properties. (Test with detergent: 50 ml of detergent in 2 litres of water – each time washing an identical spot on the bodywork for one minute).

Nanoparticles (billionths of a metre) easily penetrate pores on the surface and remove stains caused by oil and insects. This preparation is optimised for manually washing car, ship and motorcycle bodywork. It is harmless to the environment.

#### **Instructions for use:**

The recommended dilution ratio is 1 : 300. That means approximately 30ml of shampoo per 10l of clean water. If the bodywork is quite clean it is possible to use a lower concentration – 15ml per 10l of water. On the other hand if the bodywork is heavily soiled it is possible to use a stronger concentration of up to 1 : 30. Mix water with the shampoo and leave it to stand for about 2 minutes. Using a soft sponge, clean the bodywork with circular motions. **Do not forget that the better you clean the surface the better the adhesive properties and service life of the subsequent polish will be!** In cases of extremely dirty bodywork do not hesitate to wash your car two or more times.

**CAUTION** – the most frequent reason for failures in application is when the surface that has not been properly degreased! The use of greasy preparations, such as clay or similar, or a preliminary washing of the car in an automatic car wash (where waste water with spray wax is usually recycled) may reduce the effect and shorten the service life of PIKATEC polish. Also air compressors, used to dry the car body, sometimes exude oil, which is used to lubricate the compressor's piston, along with the air – this is often the case unless the compressor is equipped with a filter.

Do not apply under direct sunlight!

Watch video instructions at [www.pikatec.cz](http://www.pikatec.cz) or you can use the QR code.

### **Diamond Nano Armour –bodywork polish (50 ml)**

The revolutionary new, uncompromising and ultimate formula of nanotechnological preparation that creates an invisible transparent layer of nanoparticles (billionths of a metre). A hard protective shield is created in this way. The polish penetrates pores and microscopic cracks in lacquer and protects it from further damage. It levels the surface and reduces its aerodynamic resistance. As a result flying objects easily rebound from the layer of nanoparticles and do not create scratches and grooves. The same applies to insects that come into contact with the bodywork. The effect of the preparation lasts for a long time – 12 months. It will provide a high sheen protection from scratches caused by small pebbles and dirt, protection from the influence of salt and bitumen, protection from pollen and resin from trees, protection from bird excrement and particularly from UV radiation. The polish should be applied exclusively on surfaces pre-washed with Diamond Nano Shampoo. The new formula is significantly resistant even to detergents. A surface exposed to washing (20 times) with a very strong detergent solution has lost only 7 % of its hydrophobic properties. (Test with detergent: 50 ml of detergent in 2 litres of water – each time washing an identical spot for one minute). Diamond Nano Armour is developed to withstand extreme temperatures of up to 700°C.

**TIP:** It is not necessary to apply more layers of polish. The new Diamond formula makes one layer of this preparation completely sufficient. We recommend that the polish is applied again after one year at the latest, even if the original layer still repels water. This is necessary to renew the UV filters and nanoparticles in the polish. The amount in the pack is enough for a single application of a protective layer that reliably covers the bodywork of a large MPV type car. With smaller cars the pack will be enough for two car bodies. The packs of polish can also be purchased individually.

**Instructions for use:** Thoroughly shake before use! Thoroughly clean the surface of the bodywork. Remember that it is necessary to **remove all impurities and stains from the lacquer by polishing it with a dry piece of cloth** (for example, stains left by dried water droplets)! The application and subsequent spreading of the polish would only “preserve” these stains in the polish and it would be very difficult to get rid of them afterwards.

Apply about 3–5 ml per square metre of bodywork. Since this is nanotechnology, a really small amount of the preparation should be applied. The redundant amount will only be wiped off during the subsequent polishing. Spread the preparation evenly, with a non-absorbent cloth to create a visible film. Leave to dry for about 30 minutes, the film will get slightly lighter, and then polish it to get a high gloss. Do not apply under direct sunlight. 90 minutes after application the car may be taken into direct sunlight, the polish will also withstand water and frost down to a temperature of -5°C – it can also harden under these conditions. The optimum protective effect and hardness of the polish is achieved only after 12 hours when the nanoparticles on the surface line up and create a protective shield (crystalline grid). Therefore, before this time elapses do not expose the vehicle to extreme climatic conditions (storms, torrential rain etc.) and do not drive it in an abrasive environment, e.g. along dusty roads. When hardening takes place under low temperatures the time needed to achieve final setting is somewhat longer. During this period a thin layer of hardly visible powder (exuded emulsifier) may appear on the surface that is not so repellent in relation to water and should be properly washed away after the crystalline grid of nanoparticles hardens. If the car, after the nanoparticles have hardened, is left in temperatures of up to 25 °C, it is necessary to wash the emulsifier away 48 hours after application; if the temperature exceeds 25 °C, it is necessary to wash the emulsifier away 24 hours after the application. Only after that will the surface be perfectly water repellent. Water repellence will occur after the layer of emulsifier is washed away and each subsequent washing improves this property for a certain time. The film of this polish is not as smooth to the touch as the previous formula. This is due to the nanoparticles, which stand proud of the structure of the polish in a unique manner.

In this position the lacquer gives better protection and is more repellent to water and impurities that would otherwise stick to the surface – this is thanks to the atomic grid of the polish.

If, after the polish is hardened and washed with water, greasy stains appear (which are accompanied with inadequate water repellence in affected spots), dry the surface and subsequently polish it to a high gloss with polishing cloth. The reason for this is an insufficiently degreased surface before the application of the polish, which is caused by some preparations that leave trace amounts of grease on the surface that cannot be spotted by the human eye. The polish exudes this grease to the surface and it should then be wiped away. This may repeat several times, but after that the polish will function without problems.

**The surface of the bodywork should then be continuously washed with Diamond Nano Shampoo, this will prolong the service life of the polish!**

Video instructions to be found at [www.pikatec.cz](http://www.pikatec.cz) or you can use the QR code.

### **Diamond Nano Clear Glass – impurity remover for glass (40 ml)**

A preparation used to remove impurities before Diamond Nano Protect Glass (nano protection of glass) is applied. Nanoparticles (billionths of a metre) easily enter the pores and remove the impurities settled in the structure of glass.

**TIP:** This preparation can also be used elsewhere inside or outside, for instance in a household it can be used for glass or ceramics or to wash windows and shop windows.

**Instructions for use:** Remove impurities from glass and clean it, e.g. with Diamond Nano Shampoo. **Do not forget that the better you clean the surface the better the adhesive quality and service life of the follow-up polish will be!** In cases of heavy soiling do not hesitate to wash the glass repeatedly. Do not use detergents such as washing-up detergents or other similar substances, with the exception of preparations exclusively designed for cars!

**CAUTION** – the most frequent reason for failures in application is when the surface that has not been properly degreased! The use of greasy preparations, such as clay or similar, or a preliminary washing of the car in an automatic car wash (where waste water with spray wax is usually recycled) may reduce the effect and shorten the service life of PIKATEC polish. Also air compressors, used to dry the car body, sometimes exude oil, which is used to lubricate the compressor's piston, along with the air – this is often the case unless the compressor is equipped with a filter.

Apply Diamond Nano Clear Glass onto clean and dry glass; it will ensure absolute cleanliness and prepare the surface of the glass for the subsequent application of the polish. Apply the preparation in really small amounts (5–7 ml per square metre) using a clean application cloth. Do not apply under direct sunlight. Leave to dry for about 5 minutes and then polish. A surface cleaned in this way is ready for the subsequent application of Diamond Nano Protect Glass. In general, always apply in temperatures of over 5 °C, ideally at 20 °C. Do not apply under direct sunlight!

Watch video instructions at [www.pikatec.cz](http://www.pikatec.cz) or you can use the QR code.

#### **Diamond Nano Protect Glass – polish for glass (40 ml)**

A revolutionary new, uncompromising and ultimate formula of nanotechnological hydrophobic preparation. It serves as protection against impurities and water. It has a long-term effect of up to one year. The nanoparticles (billionths of a metre) create an invisible transparent layer on the surface of glass, a hard protective shield of a kind, which penetrates the pores of glass, smooths the surface and reduces its aerodynamic resistance. As a result flying objects lightly rebound from the surface and do not create long scratches and grooves in the glass. Protection against insects that come into contact with the bodywork functions similarly. No (or hardly any) long smudges obstructing the driver's view are created on the glass. The hydrophobic preparation works on the principle of a lotus effect whereby droplets of water glide down along the surface thanks to gravitational pull or air flow. These drops of liquid, rolling along the surface of the glass, remove particles of dirt that have stuck to the glass. When it rains, a self-cleaning effect takes place and it is not necessary to use windscreen wipers from speeds of about 60 km/h (according to the incline of the glass). However, you should always ensure that your driving is safe!

**TIP:** It is no longer necessary to apply more layers of glass protection as the new Diamond formula is absolutely sufficient. We recommend that you apply the polish again after one year at the latest, even if it still repels water. It is necessary to renew the UV filter and nanoparticles in the polish. This preparation can be used in a household on glass and ceramics, or on windows and shop windows. If one pack is not enough, additional individual packs can be purchased.

**Instructions for use:** Thoroughly shake before use! Thoroughly clean the surface of the bodywork. Remember that it is necessary to **remove all impurities and stains from the lacquer by polishing it with a dry piece of cloth** (for example, stains left by dried water droplets)! The application and subsequent spreading of the polish would only “preserve” these stains in the polish and it would be very difficult to get rid of them afterwards.

These undesirable effects would look particularly unpleasant on glass!

The glass should be clean and washed with [Ceramic Nano Clear Glass](#); then use a non-absorbent application cloth to apply a very thin film of [Ceramic Nano Protect Glass \(2-4 ml/m<sup>2</sup>\)](#), we recommend that the preparation is applied on each window separately. After 5 minutes, polish until you get a high sheen. It is important to polish the glass within 5 to 10 minutes; after this polishing will be much more laborious (to make polishing easier you can lightly spray [Diamond Nano Clear Glass](#) onto the glass). Remember that polish for glass is much more difficult to polish out than other [Pikatec polishes](#), but the results are uncompromising and the final properties are certainly worth it. If the polish becomes hard anyway and is difficult to polish out, apply Diamond Nano Clear Glass to a piece of cloth and use it to remove the dried film. You do not need to worry about compromising the resulting properties of the polish.

Do not apply under direct sunlight! After 90 minutes the car may be exposed to direct sunlight and the glass will be resistant to water and it can also be exposed to temperatures as low as -5°C, where the polish is still able to harden. However, the polish hardens from top to bottom, which means that underneath the hardening layer there is still the soft bottom part of the polish for a period of 12 hours. Therefore, before this time elapses do not expose the vehicle to extreme climatic conditions (storms, torrential rain etc.) and do not drive it in an abrasive environment, e.g. along dusty

roads. During this time try not to use windscreen wipers, which could damage the hardening polish. However, always observe the traffic rules and drive safely!

The optimum protective effect and hardness of the polish manifest after 12 hours, when the nanoparticles line up on the surface and create a crystalline grid. When hardening takes place under low temperatures the time needed to achieve the final setting is somewhat longer.

If, after the polish is hardened and washed with water, greasy stains appear (which is accompanied with inadequate water repellence in affected spots), dry the surface and then polish it to a high gloss with a polishing cloth. The reason for this is an insufficiently degreased surface before the application of the polish, which is caused by some preparations that leave trace amounts of grease on the surface which cannot be spotted by the human eye. The polish exudes this grease to the surface and it should be wiped away. This may reoccur several times, but after that the polish will function without problems.

**Afterwards, wash the surface of the glass together with the bodywork of the car regularly with Diamond Nano Shampoo; by doing this you will prolong the service life of the polish! Do not apply under direct sunlight!**

Watch video instructions at [www.pikatec.cz](http://www.pikatec.cz) or you can use the QR code.

### **Diamond Nano Protect Wheel – polish for wheels (30 ml)**

A new uncompromising nanotechnological preparation formula designed for the protection of aluminium, chrome-plated and lacquered wheels. It is very resistant to high temperatures. It covers the surface with an invisible (transparent) layer, which is very hard and protects the wheel from abrasive particles. It smooths the rough surface of the wheel, which means less dirt will stick, particularly dirt from brake pads. Because the impurities are not let onto the wheel's surface, the wheel is not only protected – the dirt also cannot penetrate deep into the wheel's structure.

Removing this engrained dirt is very laborious and often almost impossible. This preparation can withstand temperatures of over 700° C. Its effect is long-lasting; the preparation provides a high sheen, protection from scratches caused by small pebbles and dust, protection from the effects of salts and bitumen, protection from pollen and resin from trees, protection from bird excrement and also protection from UV radiation. We recommend that the polish be applied exclusively to surfaces pre-washed with Nano Clean Wheel and Diamond Nano Shampoo. If the brakes experience extreme use and at high temperatures, fine powder from the brake lining may become stuck to the polish and cake to the surface of it if regular washing does not take place. You can tell that this has happened when it is very difficult to remove the dirt. However, the dirt is only stuck to the polish and it will not penetrate the structure of the wheel; this is also due to the high thermal resistance of the polish.

In this case, we recommend that the wheel be properly cleaned with Nano Clean Wheel.

### **Instructions for use:**

**Shake properly before use!** Before Diamond Nano Protec Wheel is applied it is extremely important to wash and degrease the wheel's surface thoroughly and remove all dirt. Before applying the polish, clean the wheel's surface with a dry cloth so that stains (e.g. stains from dried water) are not "preserved" in the structure after the polish is applied. NANO CLEAN WHEEL is an ideal preparation to clean the rims. Do not forget that the better you clean the surface, the better its adhesiveness will be for the follow-up application of the polish. Apply a thin film to the wheel rim.

Because this is nanotechnology, only a really small amount of the preparation should be applied. The redundant amount will only be wiped away during the subsequent polishing. Spread the preparation evenly with a non-absorbent cloth to create a visible film. Leave to dry for about 30 minutes, the film will get slightly lighter; then polish it to get a high gloss. Do not apply under direct sunlight! 90 minutes after application the wheel may be taken into direct sunlight; the polish will also withstand water and frost down to a temperature of -5°C. However, the polish hardens from top to bottom, which means that underneath the hardening layer there will still be a soft bottom layer of polish for a period of 12 hours. Therefore, before this time elapses, do not expose the vehicle to extreme climatic conditions (storms, torrential rain etc.) and do not drive it in an abrasive environment, e.g. along dusty roads. The optimum protective effect and hardness of the polish is only achieved after 12 hours, when the nanoparticles on the surface line up and create a protective shield (crystalline grid). When hardening takes place under low temperatures the time needed to achieve final hardening is somewhat longer. During this period a thin layer of hardly visible powder (exuded emulsifier) may appear on the surface which is not so repellent to water and should be properly washed away after the crystalline grid of nanoparticles hardens. If the car, after the nanoparticles have hardened, is left in temperatures of up to 25 °C, it is necessary to wash the emulsifier away 48 hours after application; if the temperature exceeds 25 °C, it is necessary to wash the emulsifier away 24 hours after application. Only after that will the surface be perfectly water repellent. Water repellence is effective after the layer of emulsifier is washed away and each subsequent wash improves this property for a certain time.

If, after the polish is hardened and washed with water, greasy stains appear on the wheel surface (along with inadequate water repellence in affected spots), dry the surface and then polish it to a high gloss with a polishing cloth. The reason for this is an insufficiently degreased surface before the application of the polish, which is caused by some preparations that leave trace amounts of grease on the surface that cannot be spotted by the human eye. The polish exudes this grease to the surface and it should be wiped away. This may reoccur several times, but after that the polish will function



without problems. However, this phenomenon should be rare in the case of wheels, because the chemical composition is slightly different from the polish used for glass and lacquer.

**Afterwards, wash the wheel's surface regularly together with the car using Diamond Nano Shampoo - this will prolong the service life of the polish!**

Watch video instructions at [www.pikatec.cz](http://www.pikatec.cz) or you can use the QR code.

#### **Other Pikatec products:**

#### **Nano Clean Wheel – cleaning preparation for wheel rims (200 ml)**

A very strong preparation for primary cleaning and to remove dirt from aluminium rims of wheels (it is also suitable for steel wheels and plastic wheel hubcaps). Nano Clean Wheel is designed to dissolve all mechanical and chemical impurities. It also erodes the structure of all types of original polishes that have previously been used on the wheel. It creates a perfectly prepared surface for the follow-up application of a protective layer of Diamond Nano Protect Wheel. If the wheel is extremely soiled, e.g. due to the combination of high speed on a racing track and the extreme use of brakes, it fine powder from the brake lining may stick to the polish and cake on the surface of the polish unless the wheel is regularly washed. You can tell that this has happened when it is very difficult to remove the dirt. However, dirt is only stuck to the polish and will not penetrate into the structure of the wheel.

In this case we recommend that the wheel be properly cleaned with Nano Clean Wheel. This cleaning preparation for wheel rims will remove extreme soiling. Under normal operation we recommend that the wheels be cleaned with PIKATEC Diamond Nano Shampoo or Nano Clean Wheel.

**Note: Never use Nano Clean Wheel to remove original polishes from the lacquer of the bodywork!!! This could damage the lacquer of the car irreversibly because of the low PH of the preparation (this does not apply to lacquer on wheels)**

#### **Instructions for use:**

Use the atomiser to spray the preparation onto a dirty wheel and leave it to work for 5 minutes. Afterwards, wash thoroughly with a jet of water - pressurised is best.

In cases of extreme soiling, repeat the application or you may also want to use a brush. However this measure is quite rare; usually all dirt falls away after the first application.

Watch video instructions at [www.pikatec.cz](http://www.pikatec.cz) or you can use the QR code.

#### **Silicone Wiper**

A silicone wiper to wipe away water. The fastest method to dry car bodywork or glass. A fine silicone wiping bar perfectly traces the uneven shape of the bodywork. Using this enables you to wipe water and wetness off the surface in an easy manner. Wipe the entire surface of the bodywork, including glass, with long strokes from the top all the way to the ground. After wiping the wiper is dry, which is not the case if you use a chamois leather. It leaves no traces or fabric fibres on the surface.

**TIP:** It is also great for wiping windows in houses.

#### **Microfiber Pad**

This is ideally suitable for application of treatments or for polishing of large areas of the bodywork. A space for fingers perfectly fits the pad to your hand so you can reach even hard to reach spots without clenching your fingers. It is also suitable for work inside the car.

#### **Microfiber Application Cloth (White) 34x38 cm**

This fine non-absorbent cloth is used to apply polish to the car's bodywork. The colours are used to distinguish between types of application. For example – orange for the bodywork, white for glass. One need not remember what was treated with which the last time.

#### **Microfiber Application Cloth (Orange) 34x38 cm**

This fine non-absorbent cloth is used to apply polish to the car's bodywork. The colours are used to distinguish between types of application. For example – orange for the bodywork, white for glass. One need not remember what was treated with which the last time.

#### **Polishing Cloth (White) 40x40 cm**

This fine microfiber cloth is used to spread and polish out PIKATEC polishes on car bodywork. During tests with polishes tens of different types of fabric were tried to make sure that PIKATEC polish would be easy to polish out. Care was taken to make sure that stains were not created and that fibres did not stick to the surface after use. The Polishing Cloth was the absolute winner of this internal testing. The colours are used to distinguish among types of application. For example – orange for the bodywork, white for glass. One need not remember what was treated with which the last time.

#### **Polishing Cloth (Orange) 40x40 cm**

This fine microfiber cloth is used to spread and polish out PIKATEC polishes on car bodywork. During tests with polishes tens of different types of fabric were tried to make sure that PIKATEC polish would be easy to polish out. Care was taken to make sure that stains were not created and that fibres did not stick to the surface after use. The Polishing Cloth was the absolute winner of this internal testing. The colours are used to distinguish among types of application. For example – orange for the bodywork, white for glass. One need not remember what was treated with which the last time.

#### **Wash Sponge**

A sponge used to wash cars. It is robust and soaks up water very effectively. It is great to work with. It does not fall apart as other thin wash sponges might. Simply unwrap the vacuum sealed sponge and put it in a bucket with water. As soon as the sponge soaks up water it will expand to its full size.

#### **Protective Gloves**

These disposable gloves will protect sensitive hands from drying and other reactions resulting from contact with autocosmetics; however, they are mainly to protect from dirt while cleaning the car. They are resistant to all chemicals and are great to preserve the feeling in your hands while applying PIKATEC nanocosmetics. They are the same sizes as gloves used for medical operations.

**Image 13:** Lacquer of a car that has been used under normal conditions for 5 years, magnified 2500 times. This is a spot of lacquer damaged due to UV radiation and excessive drying (probably because of detergents). Cracks form in the lacquer, which become filled with dirt, grease, chemicals and water.

A chemical will continue to disintegrate the surface and water will freeze in winter, increase in volume and cause destruction to the lacquer's structure. That is why much more corrosion can be found on a car after the winter than after summertime. Abrasive creams that remove the peeling parts of lacquer are used to enliven its appearance. However, the lacquer remains irrevocably damaged and the effect is only aesthetic. Magnification 5,000 times would be confusing and one would not be able to tell what is in the picture. Here is the answer to the question of when the most important time is to treat the bodywork – naturally, it is before the winter!!!

**Image 14:** A huge, typical and deep crack in the lacquer, which you cannot see with your eyes – magnified 1,000 times. Unless the spot is treated with polish it will corrode during the winter season.

**Image 15:** A "hit" such as this from a small flying object of about 50 micrometres (50 millionths of a micrometre). Magnified 500 times. The dent has been there for some time and so the lacquer around it has begun to degrade due to UV radiation etc. In this way spots are created which later give rise to corrosion.

**As you can see from the information provided, the most significant changes and their consequences on the lacquer of the bodywork cannot be distinguished by the human eye. It would be advisable to take this into account!**

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