

1. Pristine Oil (프리스틴 오일)



Pristine Oil is the most reliable next-generation antibacterial and antiseptic natural product made by mixing 5 natural essential oils with the aim of protecting the oral hygiene of the world through sterilization of oral cavity as well as perfect toothbrush sterilization.

It is a well-known fact that Essential Oil has generally played an antibiotic function through antibacterial, antifungal, anti-inflammatory and immunity enhancement.

Pristine Oil, which is designed to make a strong oral germicidal action, prevents dental caries (cavities) and periodontal disease (gum disease such as gingivitis and periodontitis) associated with tooth surface bacterial membrane (tooth decay) as well as removal of bad breath, and kills germs that live in the oral cavity and toothbrush. In particular, in the present situation where the antibiotic resistance has increased, it is necessary to mix natural essential oils to completely kill the germs living in the oral cavity and the toothbrush that are not killed by the antibiotic resistance. Pristine Oil is the most reliable oral hygiene product for natural antimicrobial and natural disinfection, which is made to function as a next generation antibiotic material by mixing natural special essential oil.

2. Pristine Oil is an essential product in oral health care that is blended with five natural essential oils containing powerful antimicrobial and germicidal properties.

- (1) Tea Tree Oil
- (2) Eucalyptus Oil
- (3) Rose Oil
- (4) Sandal Wood Oil
- (5) Neroli Oil

(1) Tea Tree Oil (티트리 오일)



Tea tree oil is a very special oil that has been proven by its antimicrobial and germicidal efficacy and stability (no toxicity or irritation) because it has been gaining the attention of the world for the last 80 years as an essential oil with powerful germicidal power.

Tea tree oil thus proves its superior efficacy as an antiseptic and safe for maintaining oral health, including acne treatment, by inhibiting the growth of all kinds of bacteria without any irritation or any side effects at concentrations exceeding 5% in its sensitivity and effective concentration.

The antimicrobial activity of tea tree oil is about 12 times higher than that of phenolic compounds such as green tea extract, and it is a powerful antibiotic with excellent efficacy as Antiseptic and Anti-Bacterial, Anti-Fungal and Anti-Virus, which cannot be compared with any natural oil.

This is because the tea tree oil contains a terpenes component having excellent sterilizing effect as a main component. That is, tea tree oil contains strong bactericidal organic compounds such as Monoterpenes, Sesquiterpenes, and Terpene Alcohols.

In particular, when the concentration of Terpinen-4-ol, which is the main bactericidal component of tea tree oil, is increased to 35-40%, the antimicrobial activity is increased, resulting in a strong sterilizing function and antimicrobial effect. As a result, it has been reported to kill 58 bacterial organisms including oral Candida and Staphylococcus bacteria. In other words, the terpinen-4-ol component has excellent antimicrobial activity against Methicillin Resistant Staphylococcus Aureus (MRSA) and Coagulase Staphylococci, and has an antimicrobial effect against viruses and fungi. It is also known to be effective for prevention and healing of infection.

Therefore, tea tree oil can be mixed with warm water in 2-3 drops to be used as a mouth wash or used 1-2 drops in toothpaste to protect teeth and gums from plaque and plaque caused by bacteria in the mouth and prevent oral diseases.

However, Essential Oil, including tea tree oil, has a synergistic effect that increases its efficacy by 2–3 times compared to the use of two or more oils with similar chemical functions. It is significantly improving effect in oral mucosa, tooth, tongue, saliva, the objective oral condition due to sterilization action.

(2) Eucalyptus Oil



Eucalyptus oil is an essential oil extracted from the leaves of the eucalyptus tree, the main food of Australian koalas. Eucalyptus's medicinal ingredients are highly effective in inhibiting the infection of oral diseases because of their high virus-kill effect.

The major components of eucalyptus oil are 1.8-Cineole, Pinene and Pinocarveol, which inhibit gram-positive bacteria and have antimicrobial and germicidal properties against various bacteria including Staphylococcus Aureus. Thus, eucalyptus oil is used as a component of various disinfectants, mouthwashes and toothache remedies.

Eucalyptus oil is also very effective due to its germicidal properties in cavities, plaques, gingivitis and other gingival inflammation. This is the reason why eucalyptus oil is very frequently found as the main ingredient in products related to oral rinse (mouthwash), toothpaste and other oral hygiene products.

(Dental Care: Eucalyptus essential oil is very effective against cavities, dental plaque, gingivitis and other dental infections owing to germicidal properties. This is why eucalyptus essential oil is so commonly found as an active ingredient in mouthwash, toothpaste, and other dental hygiene products.)

(3) Rose Oil



It is a well-known fact that the ingredient Geraniol contained in rose oil has anti-wound healing, anti-inflammatory action, skin regeneration and sterilization. Geraniol, contained in rose oil, along with Limonene, kills bacteria that are resistant to conventional drugs.

In other words, Geraniol in rose oil is not only excellent in antiseptic action and preventive action, but It is also known to be highly effective in eradicating pathogens such as Candida (Oral Candidosis) which infiltrates the oral tissues of patients whose immune system has weakened after surviving without being killed due to resistance to antibiotics.

Geraniol contained in rose oil is useful for inhibiting the growth of bacteria such as Staphylococcus Aureus, which causes oral diseases. In addition, its mechanism of action prevents the supply of glucose or lactate necessary for the growth of bacteria, and induces natural death by blocking the expansion of bacteria. This also applies to killing cancer cells.

Geraniol in rose oil acts as a natural disinfectant or natural antibiotic, exhibiting very intense bactericidal activity as a natural antibiotic, either alone or in combination with Limonene.

(4) Sandal Wood Oil



Sandal Wood Oil (*Santalum Album*) is an essential oil with powerful sterilizing power and antibacterial power, containing Pinen and Limonene, a phenol species belonging to Monoterpenes. In addition, it contains Santalol 85% component of alcohol system, so it is known that the anti-inflammatory and antiseptic functions are strong.

Sandalwood oil is also a very powerful natural antioxidant proven in the 2012 edition of "Antiradical Efficiency of 20 Selected Medical Plants." In addition, "Inhibitory Effect of Essential Oil Against Herpes Simplex Virus Type 2," published in 2007, also proved that sandalwood oil has superb antibiotic function and antibacterial activity.

Sandalwood oil has anti-inflammatory and antimicrobial effects on all body tissues including oral cavity, and its ability with anticancer mechanisms to induce cell cycle arrest and apoptosis of cancer cells reported in 2015 "anti-cancer research."

(5) Neroli Oil



Neroli Oil (*Citrus Aurantium*) is a natural essential oil extracted from orange petals by steam distillation. It is highly sterilizing and regenerating.

Neroli oil contains 22.43% of limonene, a kind of phenol belonging to Monoterpenes, such as sandalwood oil, and is used as antibiotics and anticancer drugs that exhibit anticancer effects as well as strong anti-inflammatory antibacterial activity.

Therefore, Neroli oil kills all kinds of bacteria in oral and toothbrushes with Tea Tree Oil, Sandalwood Oil, Rose Oil and Eucalyptus Oil, and thoroughly suppresses infection and inflammation in the oral cavity.

3. The most important factor of oral disease represented by dental caries (tooth decay) and periodontal disease (gum disease) is plaque composed of resident bacteria in oral cavity.



1) Dental caries (tooth decay) begins to be caused by the cariogenic bacteria, and is a disease that is gradually disintegrated by the action of the bacteria that grow in the posterior teeth formed on the dental surface.

Tooth decay is one of the most common infectious diseases caused by infectious bacteria. It is an oral disease that causes destruction and loss of teeth. In order to prevent effective tooth decay, it is necessary to remove the plaque that forms the oral bacteria and the germs, but it is not easy to handle because of the self-resistant

substrate of the bacteria in the dentition and excessive cavity-induced eating habits. A more aggressive and efficient approach must be made absolutely essential.

In other words, the use of natural essential oil as the antibacterial agent are emerging as the best solution preventing proliferation of the bacteria that cause the dental caries are fixed on the tooth surface, and as tooth surface bacterial membrane (tooth decay) inhibitor to remove the tooth surface bacterial membrane.

2) As an oral disease the periodontal disease (gum disease) destroys periodontal tissue caused by tooth surface bacterial membrane (tooth decay). Gingivitis refers to the inflammation that occurs only in the gingiva without affecting the attachment tissue of the tooth. Periodontitis is a disease accompanied by destruction of adherent tissue and alveolar bone.

In order to prevent periodontal disease, it is necessary to remove tooth surface bacterial membrane. Despite the near-perfect mechanical action to remove the plaque, some of the bacteria remain and tooth surface bacterial membrane is again formed. Therefore, active and powerful administration of comprehensive natural essential oil such as Pristine Oil that is manufactured by the state-of-the-art nanotechnology delivery system is necessary to suppress this oral disease.

3) Oral pathogenic bacteria causing dental caries (tooth decay) and periodontal disease (gingival taste) are as follows.

(1) Streptococcus Mustans:

It is referred to as a cavity-causing bacteria, which is the most serious of the cariogenic bacteria, that is, representative cariogenic bacteria. It is a bacterium that produces acid on the enamel surface of teeth.

(2) Streptococcus Mitis:

It is a dental caries (cavities) causative bacterium that causes myocardial endocarditis.

(3) Streptococcus Sanguis:

Bacteria causing dental caries (tooth decay) and periodontal disease (gum disease)

(4) Streptococcus Anginosus:

Bacteria causing dental caries (tooth decay), gingivitis that is periodontal disease, and periodontitis

(5) Streptococcus Salivarius:

Bacteria causing dental caries (tooth decay), periodontal disease, bacteremia, and myocardial endocarditis

(6) Streptococcus Sobrinus :

Bacteria causing dental caries (tooth decay)

(7) Actinobacillus Actinomycetemcomitans:

Bacteria causing periodontal disease

(8) Neisseria Sp.:

Bacteria causing periodontal disease, meningitis, pneumonia, urethritis, arthritis, and sepsis

(9) Fusobacterium Nucleatum:

Bacteria causing stomatitis and periodontal disease,

(10) Eshericha Coli (E. Coli):

Purpose of evaluation of health standard value antibacterial ability as resistance line against bacteria

(11) Staphylococcus Aureus:

It is a stomatitis of purulent infection that resides in the tongue or saliva in the mouth and causes local and systemic infection through opportunistic infection. In particular, Staphylococcus aureus infects heart valve tissue due to endocarditis and bacteremia after dental treatment.

(12) Staphylococcus Sarophyticus:

It is a bacterium found in periodontitis, gingivitis, and periapical abscess infection during oral disease.

4. Each component of Pristine Oil destroys the cell walls of bacteria in the mouth and disrupts the enzymatic activity of the cell, killing the bacteria.

In addition, each component of Pristine Oil blocks the population density of Gram-positive bacteria involved in the initial production of plaque, slows the replication of bacteria, and reduces the amount of pre-existing plaque to reduce oral bacteria.

Now, we would like to observe how effective an antimicrobial action of Pristine Oil against the major bacteria in the mouth kills each germ. In other words, this Pristine Oil is considered to be antimicrobial against E. coli which is a major indicator of oral health (bacteria) and health index.

(1) Sterilization effect of Pristine Oil on Streptococcus Mutans:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.09 mg/ml and the Minimal Bactericidal Concentration (MBC) showed extreme excellence in the extinction of bacteria at 0.126 mg/ml.

(2) Sterilization effect of Pristine Oil on Streptococcus Mitis:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.074 mg/ml and the Minimal Bactericidal Concentration (MBC) was 0.098 mg/ml.

(3) Sterilization effect of Pristine Oil on Streptococcus Sanguis:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.068mg/ml and the Minimal Bactericidal Concentration (MBC) was 0.147mg/ml.

(4) Sterilization effect of Pristine Oil on Streptococcus Anginosus:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.84 mg/ml and the Minimal Bactericidal Concentration (MBC) was 157 mg/ml.

(5) Sterilization effect of Pristine Oil on Streptococcus Salvarius:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.097 mg/ml and the Minimal Bactericidal Concentration (MBC) was 0.185 mg/ml.

(6) Sterilization effect of Pristine Oil on Streptococcus Sobrinus:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.117 mg/ml and the Minimal Bactericidal Concentration (MBC) was 0.223 mg/ml, indicating that the bacteria were killed at very low concentrations.

(7) Sterilization effect of Pristine Oil on *Actinobacillus Actinomycetemcomitans*:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.069 mg/ml and the Minimal Bactericidal Concentration (MBC) was 0.078 mg/ml, indicating that the bacteria were killed at very low concentrations.

(8) Sterilization effect of Pristine Oil on *Neisseria Sp.*:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.073 mg/ml and the Minimal Bactericidal Concentration (MBC) was 0.134 mg/ml.

(9) Sterilization effect of Pristine Oil on *Fusobacterium Nucleatum*:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.104 mg/ml and the Minimal Bactericidal Concentration (MBC) was 0.196 mg/ml.

(10) Sterilization effect of Pristine Oil on *Esherichia Coli*:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil to *E. coli* was 3.50 mg/ml and the Minimal Bactericidal Concentration (MBC) was 4.67 mg/ml, indicating that *E. coli* was completely killed.

(11) Sterilization effect of Pristine Oil on *Staphylococcus Aureus*:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.078 mg/ml and the Minimal Bactericidal Concentration (MBC) was 0.154 mg/ml.

(12) Sterilization effect of Pristine Oil on *Staphylococcus Saprophyticus*:

The Minimal Inhibitory Concentration (MIC) of Pristine Oil for this strain was 0.064 mg/ml and the Minimal Bactericidal Concentration (MBC) was 0.117 mg/ml.

The Minimal Inhibitory Concentration (MIC) and Minimal Bactericidal Concentration (MBC) of Pristine Oil for all the above strains were found to inhibit the growth of bacteria from extremely low concentrations and effectively kill bacteria at extremely low concentrations.

Therefore, it has been confirmed that Pristine Oil has a very effective antimicrobial and sterilizing action against bacteria in the oral cavity and bacteria living in toothbrushes.

5. Prevention and Treatment of Oral Diseases in Stroke Elderly, Hospice, Demented Elderly and Parkinson's Patients Needing Oral Nursing



Oral care subjects forget that they have to lose their ability to brush their teeth due to behavioral disorders or to brush their teeth by impairment of cognitive function. In addition, unconscious and instinctive resistance to oral care causes the oral hygiene condition to deteriorate or to suffer from oral diseases.

Nowadays, as the population ages and the aging society rapidly, the number of elderly people who need oral care is rapidly increasing, and this situation can not be overlooked. In addition, the population of oral care patients is now increasing explosively, including those who are hospice patients.

Candida infection due to decreased oral immune function, especially mucosal ulcer, plaque and gingival inflammation, is an important health problem for elderly people. The Candida Albicans is a pathway that can cause complications of sepsis.

What you can do for oral care subject who do not have the ability to brush teeth and can not use alcoholic gargles is to wipe the mouth for about 8 seconds with only gauze moistened with saline solution that is the only whole oral care.

A constant phenomenon the most formal and inexplicable ways of oral care remain is a serious lack of oral hygiene and oral disinfectants as a substitute for toothpastes or mouth rinse agent (gargle solution) that can be used in oral care.

Fortunately, however, Pristine Oil can serve as the best alternative oral cleanser for oral care recipients and as a unique alternative to oral antimicrobial and bactericidal agents. In particular, Pristine Oil alone can be the only alternative and a solution to the prevention and treatment of oral candidacies in elderly people or hospice subjects.

Oral caregiver may be able to prevent mouth disease by gently pressing the tooth and gums of the oral care patient for about two minutes with gauze soaked with Pristine Oil instead of saline solution.

6. Pristine Oil & Toothbrush Disinfection and Management



The importance of sterilization of toothbrushes: During toothbrushing, very fine impurities attached to the toothbrush are transferred to the toothbrush along with the bacteria, or a part of the bacteria on the toothbrush causes the bacteria to multiply rapidly. Next, when you brush your teeth, the dental problems caused by the penetration of teeth or gums, such as gum disease (periodontal disease), continue to vicious circle. Nevertheless, toothbrush sterilization methods and management ways are so neglected and remain unscientific.

1) After using the toothbrush, it is dried in the sun to dry it: Although it can slow the rate of bacterial proliferation or kill some of the bacteria, it is insufficient for the overall bactericidal action. Therefore, toothbrush disinfection problem became the biggest issue in terms of public hygiene and all means are being sought to find an alternative.

2) Make very salty water and soak the toothbrush after using it for a long time: Repeated use of the used toothbrush in the saltwater will lower the concentration of saltwater, causing bacterial proliferation in the saltwater and allowing bacteria to grow and reproduce by resistance in the saltwater. Therefore, this method is safe only for single use, but it is accompanied with many troubles and the sterilization effect is not so large.

3) Soak the toothbrush used for gargle solution (mouth rinse agent / oral cleaning agent): This method is similar to the method of immersing a toothbrush used in saltwater. As with the saltwater, frequent use dilutes the concentration of the solution, and the resistant bacteria in the diluted solution survive and reproduce. In addition, since the main component of the gargle solution (Listerine) is a strong chemical component, including the methyl alcohol (Methyl Salicylate), it will cause chemical changes in the bristles and toothbrushes made of nylon and plastic synthetic resin during 20–30 minutes immersion time for toothbrush disinfection.

That is, even if the alcohol components begin to penetrate into the bristles and the toothbrush, cracks are formed, the industrial pigment begins to melt, and various kinds of carcinogens generated when the plastic dissolves are leaked semi-permanently, which can lead to serious medical problems of the body in the long term.

Oral rinsing agents / mouthwashes may be more effective in mouth sterilization than brushing teeth, but there is a possibility that the salivary glands are destroyed by the strong chemical alcohol ingredient contained in the mouth rinse and a risk of dry mouth, further anorexia, and a slight loss of food taste.

Consumers should be aware of these advantages and disadvantages of the product, and should choose oral hygiene methods after clearly recognizing these risks.

4) A teaspoon of baking soda is dissolved in hot water and the used toothbrush is soaked in the dissolved baking soda solution for 30 minutes: This method has more sterilization effect than disinfecting the toothbrush with saltwater, but like the saltwater, tolerant bacteria grow and reproduce, which can not be an alternative for sterilization.

5) The method of putting a toothbrush in the microwave and sterilize it for 50 seconds: This method certainly has the most obvious sterilization effect, but it can cause serious medical problems besides the inconvenience and time consuming to turn the microwave every time after using the toothbrush.

No matter how dense and harder it is for the armor-proof polycarbonate (Poly Carbonate), all plastic resins are vulnerable to heat. Moreover, the most inexpensive and low-priced toothbrush that made of industrial plastic resin, not to mention, in the heat that can sterilize, the chemical reaction is inevitable.

The medical risk factors caused by the heat of the microwave oven of toothbrushes contain risk factors several times higher than those caused by alcohol. This is because the heat can dissolve the cracks and plastic resin in the toothbrush as well as the toothbrush surface, and the carcinogens produced by this can affect the inside of the human body through the oral cavity. If you are concerned about this problem and you only want to sterilize microwave ovens 2–3 times a week, you will lose the meaning and purpose of toothbrush disinfection every day.

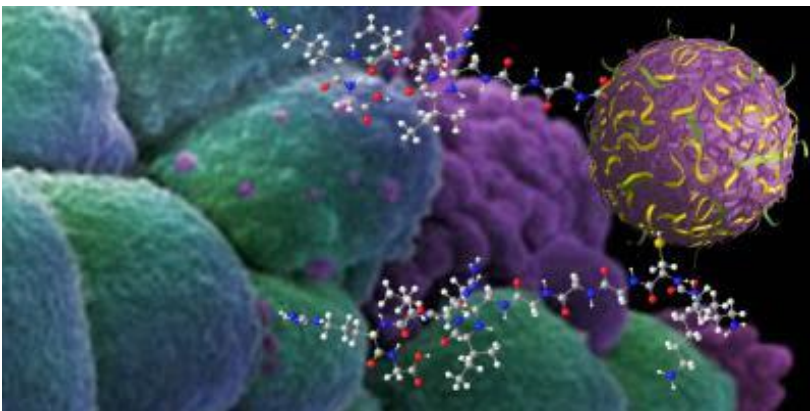
Moreover, after 2 hours of using the toothbrush, the problem is that the breeding of the bacterium surely becomes enough to make us astonished at the confirmation of the bacterial colony. So, is there any way to solve this toothbrush disinfection problem in this uneasy and terrible situation?

6) Pristine Oil is the only solution that can easily sterilize bacteria in the mouth and disinfect the toothbrush at the same time.

First, drop 1–2 drops of Pristine Oil on the toothbrush, and then apply toothpaste to the toothbrush. If you brush your teeth for one minute with it, all the bacteria in the mouth will be killed and the bacteria will not be transferred to the toothbrush. In addition, it is very unlikely to be the possibility of cell proliferation.

And, with a more complete toothbrush disinfection and oral hygiene in mind, if you add 1–2 drops of Pristine Oil to the brush head and store it after using your toothbrush, you will maintain the best toothbrush sterilization and best oral hygiene.

7. The state-of-the-art nanotechnology delivery system was applied to the manufacturing process of Pristine Oil. The greatest strength of Pristine Oil is in the PDS SYSTEM.



What is PDS? POWER DELIVERY SYSTEM is the most important carrier of all antibacterial and disinfecting ingredients. Pristine Oil's PDS SYSTEM is a state-of-the-art nanotechnology that is intended to deliver the antibacterial and sterilizing functional ingredients contained in natural essential oils quickly and deeply in the human body including the oral cavity.

Therefore, Pristine Oil applied PDS system maximizes antimicrobial and sterilization action by penetrating deeply into body tissues so that It is incomparable to the use of the same oil mixture.

In addition, the fusion promoter used in the manufacturing process of this product is also a cutting-edge technology using special ENZYME which can not even be predicted by other companies.

The special technology applied to this product including PDS (POWER DELIVERY SYSTEM) is the unique state-of-the-art technology exclusive to our company, and it is a delivery system of antimicrobial and disinfecting function components which can not be seen by other companies.