CLAIMS

[Claim 1] A bactericidal agent composition comprising ultrafine bubbles having a most frequent particle diameter of 500 nm or less and a bactericidal component.

[Claim 2] The bactericidal composition according to claim 1, wherein the density of most frequent particle among the ultrafine bubbles are 1×10^4 particles or more.

[Claim 3] The composition according to claim 1 or 2, wherein the density of ultrafine bubbles each having a particle diameter of 1000 nm or less is 1×10^6 or more.

[Claim 4] The composition according to any one of claims 1 to 3, wherein the interior of said ultrafine bubbles are filled with one or more gases selected from among air, oxygen, hydrogen, nitrogen, carbon dioxide, argon, neon, xenon, fluorinated gases, ozone, and inert gases.

[Claim 5] The composition according to any one of claims 1 to 4, wherein said bactericidal component is a chlorine bactericidal component, an iodine bactericidal component, a peroxide bactericidal component, an aldehyde bactericidal component, a phenolic bactericidal component, a biguanide bactericidal component, a mercury bactericidal component, an alcoholic bactericidal component, a quaternary ammonium salt bactericidal component, an amphoteric surfactant bactericidal component, or a naturally derived antibacterial component.

[Claim 6] A process for producing a bactericidal agent composition which comprises mixing water containing ultrafine bubbles having a most frequent particle diameter of 500 nm or less with a bactericidal component.

[Claim 7] A process for producing a bactericidal agent composition which comprises generating ultrafine bubbles having a most frequent particle diameter of 500 nm or less within water containing a bactericidal component.

[Claim 8] A sterilization method using the bactericidal agent composition according to any one of claims 1 to 5.

[Claim 9] A sterilization method comprising a step in which the bactericidal agent composition according to any one of claims 1 to 5 is brought into contact with a biofilm.

CLAIMS

1. A method of sterilization comprising a step in which a bactericidal agent composition comprising ultrafine bubbles having a most frequent particle diameter of 500 nm or less and a bactericidal component is brought into contact with a biofilm,

wherein the bactericidal component is selected from the group consisting of: chloroisocyanuric acid, nonoxynol iodine, phenoxy iodine, potassium permanganate, glutaraldehyde, phtharal, formaldehyde, parachloromethacresol, parachlorometaxylenol, ortho phenylphenol, alkyl esters of paraoxybenzoic acid, hexachlorophene, mercury (II) chloride, thimerosal, benzethonium chloride, dequalinium chloride, N-lauryldiaminoethylglycine, N-myristyldiethylglycine, N-alkyl-N-carboxymethylammonium betaine, 2-alkyl-1-hydroxyethyl imidazoline betaine sodium, Hinokitiol, *cassia* oil, Chenopodiaceae oil, geraniol, saflol, polylysine, lysozyme, histatin, defensins, lactoferrin and lactoferricin.

2. The method according to claim 1, wherein a density of most frequent particles among the ultrafine bubbles is $1x10^4$ particles or more.

3. The method according to claim 1, wherein a density of ultrafine bubbles each having a particle diameter of 1000 nm or less is $1x10^6$ or more.

4. The method according to claim 1, wherein an interior of the ultrafine bubbles is filled with one or more gases selected from the group consisting of air, oxygen, hydrogen, nitrogen, carbon dioxide, argon, neon, xenon, a fluorinated gas, ozone, and an inert gas.