

DESCRIPTION

TITLE OF INVENTION: External Preparation

5 TECHNICAL FIELD

{0001}

The present invention relates to an external preparation. More specifically it relates to an external preparation containing silver-carrying
10 tricalcium phosphate powder, aluminum potassium phosphate, and zinc oxide, said external preparation having superior anti-discoloration properties when adhered to clothing and also having an excellent antiperspirant effect and
15 deodorizing effect. The external preparation of the present invention is preferably used as a deodorizing external preparation, deodorizing cosmetic, antiperspirant cosmetic, odor eliminating cosmetic, etc., for the purpose of
20 deodorization.

BACKGROUND ART

{0002}

Patent Document 1 discloses the use of
25 silver-carrying calcium phosphate as a deodorant.

Although there is a description that says antiperspirants can be blended into said deodorant, there is no description of the antiperspirants that can actually be blended in and there is not a
5 description regarding discoloration when the antiperspirant is blended in.

{0003}

Patent Document 2 describes that a combination of antibacterial zeolite and zinc
10 oxide powder, when dispersed in water, causes discoloration of the base agent, which tends to lead to stains on clothing; and discloses a deodorant composition that prevents this discoloration with a specific dicarboxylic acid.

15 As described above, when antibacterial zeolite is used for external preparations, combining it with zinc oxide tends to cause discoloration.

{0004}

Patent Document 3 discloses a deodorant
20 cosmetic that has superior formulation stability and is able to prevent discoloration from antibacterial zeolite obtained by combining antibacterial zeolite and alum or dried alum, which functions as an antiperspirant.

25

PRIOR ART DOCUMENTS

PATENT DOCUMENTS

{0005}

Patent Document 1: JP H08-126690 A

Patent Document 2: JP 2007-289452 A

Patent Document 3: JP 2004-307375 A

SUMMARY

In one aspect, there is provided an external preparation comprising silver-carrying tricalcium phosphate, alum and zinc oxide wherein the alum content is 1-20 wt% relative to the total amount of the external preparation, and water content is less than 5 wt% relative to the total amount of the external preparation.

DISCLOSURE OF INVENTION

TECHNICAL PROBLEM

{0006}

The inventors, in view of the aforementioned background art, conducted earnest research on the use of a specific silver-carrying tricalcium phosphate as a deodorant and, as a result,

discovered that, although a combination of silver-carrying tricalcium phosphate and zinc oxide does not cause discoloration as seen with the combination of antibacterial zeolite and zinc oxide, a combination with alum, which is an antiperspirant, would cause discoloration when adhered to clothing. And, the inventors discovered that the discoloration that occurred when silver-carrying tricalcium phosphate and alum were combined could be suppressed by blending in zinc oxide, and thus completed the present invention.

{0007}

The object of the present invention is to provide an external preparation that can use zinc oxide to suppress discoloration due to adherence to clothing of the external preparation that is a combination of silver-carrying tricalcium phosphate, which functions as an deodorant, and alum, which is an antiperspirant.

10 TECHNICAL SOLUTION

{0008}

That is, the present invention provides an external preparation comprising silver-carrying tricalcium phosphate, alum, and zinc oxide.

15 {0009}

Also, the present invention provides the aforementioned external preparation wherein the content of the silver-carrying tricalcium phosphate powder is 0.5-20 wt%, the alum content is 1-20 wt%, and the zinc oxide content is 0.05-10 wt%.

{0010}

Furthermore, the present invention provides the aforementioned external preparation wherein said external preparation is an aerosol spray

deodorant.

ADVANTAGEOUS EFFECTS OF THE INVENTION

{0011}

5 The present invention can provide an
external preparation that can use zinc oxide to
suppress discoloration of clothing due to
adherence of the external preparation that is a
combination of silver-carrying tricalcium
10 phosphate and alum, which is an antiperspirant.

 Also, the external preparation of the
present invention has an advantage in that it
causes less discoloration compared with external
preparations using silver-carrying antibacterial
15 zeolite.

BEST MODE FOR CARRYING OUT THE INVENTION

{0012}

“Silver-carrying tricalcium phosphate”

20 The silver-carrying tricalcium phosphate
used in the present invention is a white powder of
tricalcium phosphate carrying silver. In the
present invention, a commercial product (Apacider
C from Sangi Co., Ltd.) can be preferably used.

25 {0013}

The blend ratio of the silver-carrying tricalcium phosphate is preferably 0.1-20 wt%, more preferably 1-10 wt%, relative to the total amount of the external preparation.

5 If the blend ratio is less than 0.1 wt%, then the deodorant function may not be sufficiently manifested. Also, if it is over 20 wt%, then application of the external preparation of the present invention on the skin may cause
10 excessive whiteness.

{0014}

“Alum”

The alum used in the present invention is an essential ingredient that functions as an
15 antiperspirant. The present invention uses commercially available powder. For the alum used in the present invention, dried alum can also be used. Examples of preferably used commercial products include Taiace S150, Taiace S100, Taiace
20 K150, and Taiace K20 (TAIMEI Chemicals Co., Ltd).

{0015}

The blend ratio of alum is preferably 1-20 wt%, more preferably 2-10 wt%, relative to the total amount of the external preparation.

25 If the blend ratio is less than 1 wt%, then

the antiperspirant function may not be sufficiently manifested. Also, if it is over 20 wt%, then application of the external preparation of the present invention on the skin may cause excessive whiteness.

{0016}

If the alum is blended into an aerosol spray, the average particle size of the alum fine particle powder is preferably 0.01-50 micrometers. The average particle size is measured with a usual method such as the number average diameter derived from image analysis of transmission electron microscope images.

{0017}

“Zinc oxide”

In the external preparation of the present invention, the inventors discovered that a combination of silver-carrying tricalcium phosphate and alum would cause discoloration when the external preparation is adhered to clothing, and also discovered that said discoloration could be suppressed by blending in zinc oxide.

That is, in the present invention, zinc oxide is an essential ingredient that functions as a discoloration suppression agent when the product

adheres to clothing.

In the present invention, zinc oxide is blended in as powder. The preparation method and the particle size of the zinc oxide are not
5 limited.

A deodorant composition that uses antibacterial zeolite tends to cause discoloration in a water-based composition particularly when zinc oxide powder is blended in; however, a
10 deodorant composition that uses silver-carrying tricalcium phosphate does not cause discoloration such as with antibacterial zeolite even when zinc oxide powder is blended into a water-based composition. On the contrary, zinc oxide, when
15 combined with silver-carrying tricalcium phosphate and alum, manifests the prominent effect of suppressing the discoloration that occurs when the product adheres to clothing, which cannot be anticipated by a person skilled in the art.

20 {0018}

The blend ratio of zinc oxide is preferably 0.05-10 wt%, more preferably 0.1-5 wt%, relative to the total amount of the external preparation.

If the blend ratio is less than 0.05 wt%,
25 then the aforementioned discoloration suppression

effect may not be sufficiently manifested. Also,
if it is over 10 wt%, then application on the skin
may cause excessive whiteness.

{0019}

5 In addition to the aforementioned essential
ingredients, other ingredients commonly used in
external preparations, for example one, two or
more of those listed below, are blended as
necessary in the external preparation of the
10 present invention; the preparation can be
conducted for the target formulation with a
conventional method. Preferable products are
antiperspirant cosmetics and deodorizing cosmetics
that are deodorizing external preparations.

15 {0020}

Examples of the oil component include liquid
fats and oils such as tsubaki oil, macadamia nut
oil, olive oil, rapeseed oil, egg yolk oil, sesame
oil, persic oil, wheat germ oil, sasanqua oil,
20 linseed oil, safflower oil, cotton seed oil,
evening primrose oil, soybean oil, peanut oil, tea
seed oil, Japanese nutmeg oil, rice bran oil,
jojoba oil, germ oil, triglycerin, glycerin
trioctanoate, and glycerin triisopalmitate;
25 solid fats and oils such as cacao butter,

coconut oil, hydrogenated coconut oil, palm oil, palm kernel oil, Japanese core wax nucleus oil, hydrogenated oil, Japanese core wax, and hydrogenated castor oil;

5 waxes such as beeswax, candelilla wax, carnauba wax, and lanolin;

hydrocarbons such as liquid petrolatum, ozocerite, squalene, paraffin, ceresin, squalane, petrolatum, and microcrystalline wax;

10 and ester oils such as isopropyl myristate, cetyl octanoate, octyl dodecyl myristate, isopropyl palmitate, hexyl laurate, myristyl myristate, hexyl decyl dimethyloctanoate, cetyl lactate, myristyl lactate, isocetyl stearate,

15 isocetyl isostearate, cholesteryl 12-hydroxystearate, ethylene glycol di(2-ethylhexanoate), dipentaerythritol fatty acid ester, neopentyl glycol dicaprate, diisostearyl malate, glyceryl di-2-heptylundecanoate,

20 trimethylolpropane tri-2-ethylhexylate, trimethylolpropane triisostearate, pentaerythritol tetra-2-ethylhexylate, glycerin tri-2-ethylhexylate, trimethylolpropane triisostearate, cetyl 2-ethylhexanoate, 2-ethylhexyl palmitate, glyceryl

25 trimyristate, tri-2-heptyl undecanoic acid

glyceride, 2-heptylundecyl palmitate, diisopropyl adipate, 2-octyldodecyl N-lauroyl-L-glutamate, di-2-heptylundecyl adipate, di2-ethylhexyl sebacate, 2-hexyldecyl myristate, 2-hexyldecyl palmitate, 2-
5 hexyldecyl adipate, diisopropyl sebacate, and 2-ethylhexyl succinate;

higher fatty acids such as lauric acid, myristic acid, palmitic acid, stearic acid, behenic acid, oleic acid, 12-hydroxystearic acid,
10 undecylenic acid, isostearic acid, linolic acid, linoleic acid, and eicosapentanoic acid.

straight chain or branched chain alcohols such as lauryl alcohol, cetyl alcohol, stearyl alcohol, behenyl alcohol, myristyl alcohol, oleyl
15 alcohol, cetostearyl alcohol, mono stearyl glycerin ether (batyl alcohol), 2-decyltetradecynol, lanolin alcohol, cholesterol, phytosterol, hexyl dodecanol, isostearyl alcohol, and octyl dodecanol;

20 and silicone oils such as dimethylpolysiloxane and methylphenylpolysiloxane.
{0021}

Examples of the surfactant include anionic surfactants such as; fatty acid soap, alkyl ether
25 sulfuric ester, N-acyl sarcosinic acid such as

sodium lauroyl sarcosinate, higher fatty acid
amide sulfonic acids such as sodium N-myristoyl-N-
methyltaurate and sodium cocoyl methyltaurate,
sulfosuccinates such as sodium monolauroyl

5 monoethanol amide POE sulfosuccinates and sodium
laurylpolypropylene glycol sulfosuccinates,
alkylbenzene sulfonates, N-acyl glutamate, higher
fatty acid esters sulfuric acid esters, sulfonated
oils such as Turkey red oil, POE alkyl ether

10 carboxylic acid, POE alkyl aryl ether carboxylates,
higher fatty acid ester sulfonates, secondary
alcohol sulfuric ester salts, higher fatty acid
alkylol amide sulfuric ester salts, and sodium
lauroyl monoethanol amide succinate;

15 cationic surfactants such as
alkyltrimethylammonium salts such as
stearyltrimethylammonium chloride,
dialkyldimethylammonium salts such as
distearyldimethylammonium chloride,

20 alkylpyridinium salts such as cetylpyridinium
chloride, and benzalkonium chloride;

imidazoline ampholytic surfactants such as
2-cocoyl-2-imidazolinium hydroxide-1-
carboxyethyloxy-disodium salt;

25 ampholytic surfactants such as betaine

surfactants such as amido betaine and
sulfobetaine;

sorbitan fatty acid esters such as sorbitan
monooleate, sorbitan monoisostearate, sorbitan
5 monolaurate, sorbitan monopalmitate, and sorbitan
trioleate;

glycerin polyglycerin fatty acids such as
mono-cottonseed oil fatty acid glycerin, glyceryl
monostearate, glycerin sesquioleate, and glyceryl
10 monostearate malate;

propylene glycol fatty acid esters such as
propylene glycol monostearate;

lipophilic nonionic surfactants such as
hydrogenated castor oil derivatives, glyceryl
15 alkyl ethers, and POE-methylpolysiloxane
copolymers;

POE sorbitan fatty acid esters such as POE
sorbitan monooleate and POE sorbitan monostearate;

POE sorbit fatty acid esters such as POE
20 sorbit monolaurate, POE sorbit monooleate and POE
sorbit monostearate;

POE glycerin fatty acid esters such as POE
glyceryl monooleate and POE glyceryl distearate;

POE fatty acid esters such as POE
25 distearate;

P0E alkyl ethers such as P0E lauryl ether and P0E cholestenol ether, P0E alkylphenyl ethers such as P0E octylphenyl ether and P0E nonylphenyl ether;

5 P0E-P0P alkyl ethers such as P0E-polyoxypropylene (hereafter referred to as P0P) monobutyl ether, P0E-P0P cetyl ether, and P0E-P0P glyceryl ether;

10 P0E hydrogenated castor oil derivatives such as P0E hydrogenated castor oil, P0E hydrogenated castor oil monoisostearate, and P0E hydrogenated castor oil malate;

alkanol amides such as palm oil fatty acid diethanol amide and fatty acid isopropanol amide;

15 P0E propylene glycol fatty acid esters, P0E fatty acid amides, P0E alkyl amines, sucrose fatty acid esters, and alkylethoxydimethyl amine oxide.
{0022}

Examples of the powders include mica, talc,
20 kaolin, sericite, muscovite, phlogopite, synthetic mica, lepidolite, biotite, lithia mica, synthetic mica, calcium carbonate, magnesium carbonate, silicic acid anhydride (silica), aluminum silicate, barium silicate, calcium silicate, magnesium
25 silicate, strontium silicate, aluminum oxide,

barium sulfate, red iron oxide, yellow iron oxide,
black iron oxide, cobalt oxide, ultramarine blue,
indigo blue, titanium dioxide, zinc oxide,
titanium mica (titanium oxide-coated mica),
5 argentine, bithmus oxychloride, boron nitride, red
228, red 226, blue 404, polyethylene powder,
methyl polymethacrylate powder, polyamide resin
powder (nylon powder), cellulose powder,
organopolysiloxane elastomer, aluminum powder, and
10 copper powder.
{0023}

Examples of the alcohol include lower
alcohols such as ethanol, propanol, and
isopropanol; and
15 cholesterol, sitosterol, and lanosterol.
{0024}

Examples of the thickener include plant
polymers such as gum arabic, gum tragacanth,
galactan, carob gum, guar gum, carrageenan, pectin,
20 agar, starch (corn, wheat, potato, and rice);

microbial polymers such as dextran and
pullulan;

starch polymers such as carboxymethyl starch
and methylhydroxypropyl starch;

25 cellulosic polymers such as methyl cellulose,

ethyl cellulose, hydroxyethyl cellulose, sodium cellulose sulfate, hydroxypropyl cellulose, carboxymethyl cellulose, and crystal cellulose;

alginate and propylene glycol alginate;

5 vinyl polymers such as polyvinylmethyl ether and carboxyvinyl polymer;

POE polymers;

POE polyoxypropylene copolymers;

10 acrylic polymers such as sodium polyacrylate and polyacrylamide;

and inorganic water soluble polymers such as bentonite, aluminum magnesium silicate, laponite, hectorite, and silicic acid anhydride.

15 {0025}

Examples of the chelating agents include hinokitiol, gallic acid, tannic acid, caffeic acid, ethylenediaminetetraacetic acid, ethyleneglycol tetraacetic acid, diethylenetriaminepentaacetic acid, phytic acid, polyphosphoric acid, and methaphosphoric acid, as well as the analogs, alkali metal salts, carboxylic esters thereof.

{0026}

Examples of the ultraviolet absorbent
25 include octyl p-methoxycinnamate, 4-tert-butyl-4'-

methoxybenzoylmethane, and octocrylene.

{0027}

Examples of the humectants include
polyethylene glycol, propylene glycol, dipropylene
5 glycol, 1,3-butylene glycol, glycerin, diglycerin,
xylitol, maltitol, maltose, D-mannitol, fructose,
sodium hyaluronate, glucosamine, and cyclodextrin.

{0028}

Examples of the medicinal ingredients
10 include vitamins such as retinol, retinol
palmitate, pyridoxine chloride, nicotinic acid
amide, dl- α -tocopherol, magnesium ascorbate
phosphate, vitamin D2, dl- α -tocopherol,
pantothenic acid and biotin;

15 anti-inflammatory agents such as azulene and
glycyrrhizin;

whitening agents such as tranexamic acid and
potassium 4-methoxysalicylate;

astringents such as tannic acid;

20 and tonics such as L-menthol and camphor.

{0029}

Examples of the preservatives include p-
hydroxybenzoate (such as methylparaben,
ethylparaben, and butylparaben), sorbic acid,
25 benzalkonium chloride, chlorhexidine chloride,

trichlorocarbanilide, photosensitive substances,
and phenoxyethanol.

{0030}

Examples of other ingredients that can be
5 blended in include neutralizing agents such as 2-
amino-2-methyl-1-propanol and 2-amino-2-methyl-
1,3-propandiol, potassium hydroxide,
triethanolamine, and sodium carbonate;

pH control agents such as lactic acid,
10 citric acid, glycolic acid, succinic acid,
tartaric acid, maleic acid, sodium hydrogen
carbonate, and ammonium hydrogen carbonate;

and antioxidants such as ascorbic acid, α -
tocopherol, and carotenoid.

15 {0031}

The product form of the external preparation
of the present invention is not limited in
particular. Examples include the aerosol spray
type, roll-on type, powder type and pressed powder
20 (molded powder) type, and stick type.

In the present invention, the aerosol spray
type is particularly preferable. The aerosol spray
type is prepared by filling an aerosol can with
the external preparation of the present invention
25 as well as a propellant such as a liquefied gas

and alcohol by using a conventional method. Alum's diffusion properties are poor in ethanol but the addition of the silver-carrying tricalcium phosphate improves diffusion of alum in ethanol, which is a new finding obtained by the present invention.

EXAMPLES

{0032}

10 The present invention is described in detail below by referring to Examples. The present invention is not limited to these examples. The blend ratios are in relation to the total amount and in weight-percentage units unless specified otherwise.

{0033}

“Examples 1-9, Comparative example 1”

[Deodorant spray]

Power lotion type deodorant lotions were prepared with the compositions of Examples and Comparative examples shown in Table 1 and put into a 50 mL glass tube to evaluate the redispersion properties/sedimentation velocity based on the following method. Also, said deodorant lotions were put into aerosol containers at the stock

solution (power lotion) : LPG gas = approximately
2 : 8, and discoloration from their adherence to
clothing was evaluated with the following method.
{0034}

5 <Redispersiion properties of the powder>

The sample was put into a 50 mL glass tube
and placed undisturbed for one hour to let the
powder precipitate; the glass tube was then
shaken/stirred to confirm redispersiion properties.

10 <Evaluation>

○: Redispersiion occurs within five times of
shaking.

×: No redispersiion occurs after 20 or more times
of shaking.

15 {0035}

<Sedimentation velocity of the powder>

The sample was put into a 50 mL glass tube
and, after homogeneous stirring, placed
undisturbed to visually observe the sedimentation
velocity of the powder.

<Evaluation>

○: No separation of the upper layer is observed
for 20 seconds or more.

×: Separation of the upper layer is confirmed
within 10 seconds.

{0036}

<Method to confirm discoloration>

The deodorant spray was applied on the
armpit for three seconds and the person wore white
5 clothing for eight hours engaging in daily life;
the clothing was then let alone for two hours
under room light and the discoloration was
visually observed.

<Evaluation>

10 ○: No discoloration is observed.

×: Discoloration is observed.

{0037}

{Table 1}

	Comparative example 1	Example 1	Example 2	Example 3	Example 4	Example 5	Example 6	Example 7	Example 8	Example 9	Comparative example 2	Example 10	Example 11
Ethanol	To 100%	To 100%	To 100%	To 100%	To 100%	To 100%	To 100%	To 100%	To 100%	To 100%	To 100%	To 100%	To 100%
Water	-	-	-	-	-	-	-	-	-	-	-	2	5
Alum	5	5	5	5	5	5	10	10	20	5	5	5	5
Silver-carrying tricalcium phosphate (*1)	2	2	2	5	5	5	2	5	2	10	-	2	2
Zinc oxide (*2)	-	0.25	0.5	0.5	-	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Zinc oxide (*3)	-	-	-	-	0.5	-	-	-	-	-	-	-	-
Zinc oxide (*4)	-	-	-	-	-	0.5	-	-	-	-	-	-	-
Redispersion properties of the powder	○	○	○	○	○	○	○	○	○	○	×	○	○
Sedimentation velocity of the powder	○	○	○	○	○	○	○	○	○	○	○	○	×
Discoloration when adhered to clothing	×	○	○	○	○	○	○	○	○	○	○	○	○

*1: Apacider C: Sangi Co., Ltd.

*2: Fine zinc oxide: Sakai Chemical Industry Co.

5 Ltd.

*3: Zinc flower AZO-BS: Fujimoto Chemicals Co., Ltd.

*4: Japanese pharmacopoeia zinc oxide (for hydrated) : Sakai Chemical Industry Co. Ltd.

10 {0038}

The results shown in the aforementioned

Table 1 indicate that a combination of silver-carrying tricalcium phosphate and alum causes discoloration when adhered to clothing (Comparative example 1 and Comparative example 2).

5 However, Examples 1-11 indicate that said discoloration can be prevented by blending in zinc oxide.

Also, it is indicated that alum has a problem in that the redispersion in ethanol is
10 poor (Comparative example 2), but that the addition of silver-carrying tricalcium phosphate improves the redispersion and solves this problem.

Furthermore, it is indicated that the sedimentation velocity of the powder increases
15 when 5 wt% of more of water is blended in (Example 11). Considering the process of filling aerosol containers during manufacturing, powder lotions having superior redispersion and slow sedimentation velocity are preferable. Therefore,
20 in the present invention, it is more preferable if the water content is no more than 5 wt% relative to the total amount of the powder lotion, which is the external preparation.

{0039}

25 Formulation example 1 Deodorant spray (wt%)

(Mother solution)

	Alum	5
	Apacider C	10
	Zinc oxide (zinc flower)	2
5	Silicic acid anhydride	10
	Calcium stearate	0.5
	Talc	10
	Corn starch	12.5
	Decamethylcyclopentasiloxane	15
10	Methylphenylpolysiloxane	12
	Cetyl 2-ethylhexanoate	8
	PPG-20 decyltetradeceth-10	3
	Dimethicone (6 cs)	12

The aforementioned ingredients are mixed to
15 be used as the mother solution, which is put into
a spray can, into which LPG is introduced in such
a way that the mother solution : LPG = 5 : 95.

{0040}

Formulation example 2 Deodorant spray (wt%)

20 (Mother solution)

	Alum	5
	Apacider C	2
	Zinc oxide (zinc flower)	1
	Silicic acid anhydride	1
25	Ethanol	71.5

Cetyl 2-ethylhexanoate	10
Dimethicone (6 cs)	8
PEG-9 dimethicone	1
L-menthol	0.5

5 The aforementioned ingredients are mixed to be used as the mother solution, which is put into a spray can, into which LPG is introduced in such a way that the mother solution : LPG = 10 : 90.

{0041}

10 Formulation example 3 Deodorant lotion (wt%)

Alum	2
Apacider C	2
Zinc oxide (zinc flower)	1
Silicic acid anhydride	1
15 Ethanol	86.5
Glycerin	3
1,3-butylene glycol	3
L-menthol	1
Perfume	0.5

20 The aforementioned ingredients are mixed and put into a bottle container or mist container to obtain a lotion composition.

{0042}

Formulation example 4 Deodorant stick (wt%)

25 Alum	5
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	Apacider C	5
	Zinc oxide (zinc flower)	1
	Silicic acid anhydride	8
	Solid petrolatum wax	7
5	Stearyl alcohol	10
	Liquid paraffin	10
	Decamethylcyclopentasiloxane	43.5
	Methylphenylpolysiloxane	8
	PEG-9 dimethicone	2
10	Glutathione	0.5

The aforementioned ingredients are heated and mixed, and put into a stick container and cooled down to room temperature to obtain a stick composition.

15 {0043}

	Formulation example 5 Deodorant powder	(wt%)
	Alum	3
	Apacider C	2
	Zinc oxide (zinc flower)	0.5
20	Talc	90
	Silicic acid anhydride	4.5

The aforementioned ingredients are mixed with a mixer to obtain a powder composition.

25 INDUSTRIAL APPLICABILITY

{0044}

The present invention can provide an external preparation that can use zinc oxide to suppress discoloration due to adherence to
5 clothing of an external preparation that is a combination of silver-carrying tricalcium phosphate, which functions as a deodorant, and alum, which is an antiperspirant.

The external preparation of the present
10 invention is superior in terms of the antiperspirant effect and deodorant effect, and very useful as an antiperspirant cosmetic and/or deodorant cosmetic.

CLAIMS

[Claim 1]

An external preparation comprising silver-carrying tricalcium phosphate, alum and zinc oxide wherein the alum content is 1-20 wt% relative to the total amount of the external preparation, and water content is less than 5 wt% relative to the total amount of the external preparation.

[Claim 2]

The external preparation of claim 1 wherein said external preparation suppresses the discoloration that results from adherence to clothing

[Claim 3]

The external preparation of claim 1 or 2 wherein said external preparation is an aerosol spray cosmetic.

External Preparation

ABSTRACT

The present invention is an external
5 preparation comprising silver-carrying tricalcium
phosphate, alum, and zinc oxide.

The object of the present invention is to
provide an external preparation that can use zinc
oxide to suppress discoloration due to adherence
10 to clothing of the external preparation that is a
combination of silver-carrying tricalcium
phosphate, which functions as an deodorant, and
alum, which is an antiperspirant.

15 (No suitable figure)