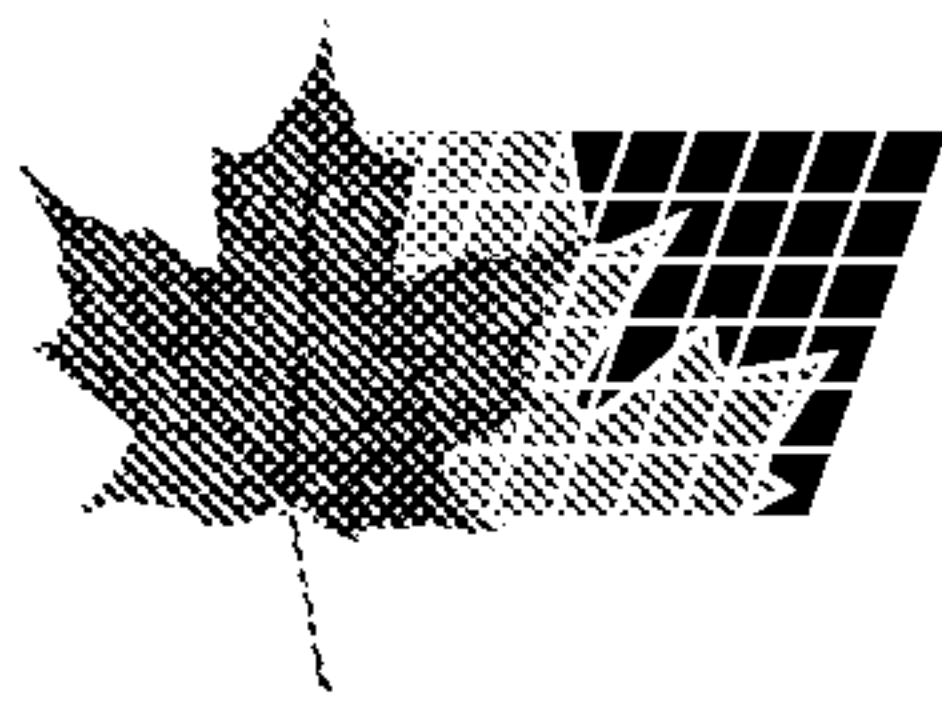




(72) GUBERNICK, JOSEPH, US

(72) CIOCA, GHEORGHE, US

(72) BEVACQUA, ANDREW J., US

(72) TADLOCK, CHARLES CRAIG, US

(71) COLOR ACCESS, INC., US

(51) Int.Cl.⁷ A61K 7/48

(30) 1998/03/13 (09/039,013) US

(54) **UTILISATION DE LA TOURMALINE DANS DES
COMPOSITIONS COSMETIQUES DE NETTOYAGE**

(54) **TOURMALINE IN COSMETIC CLEANSING COMPOSITIONS**

(57) La présente invention concerne des compositions cosmétiques renfermant de la tourmaline, destinées au démaquillage du visage ou au lavage des cheveux.

(57) The present invention relates to cosmetic skin or hair cleansing compositions comprising tourmaline.

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A61K 7/48	A1	(11) International Publication Number: WO 99/45901 (43) International Publication Date: 16 September 1999 (16.09.99)
(21) International Application Number: PCT/US99/05520 (22) International Filing Date: 12 March 1999 (12.03.99) (30) Priority Data: 09/039,013 13 March 1998 (13.03.98) US (71) Applicant: COLOR ACCESS, INC. [US/US]; 7 Corporate Center Drive, Melville, NY 11747 (US). (72) Inventors: GUBERNICK, Joseph; 3 East 71st Street, New York, NY 10021 (US). CIOCA, Gheorghe; 1 West Cliff Lane, Lake Grove, NY 11755 (US). BEVACQUA, Andrew, J.; 8 Redbridge Court, East Setauket, NY 11733 (US). TADLOCK, Charles, Craig; 16 Rocket Drive, Islip Terrace, NY 11752 (US). (74) Agent: TSEVDOS, Estelle, J.; Kenyon & Kenyon, One Broadway, New York, NY 10004 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: TOURMALINE IN COSMETIC CLEANSING COMPOSITIONS (57) Abstract The present invention relates to cosmetic skin or hair cleansing compositions comprising tourmaline.		

TOURMALINE IN COSMETIC CLEANSING COMPOSITIONS

Field of the Invention

5 The invention relates to cosmetic compositions. More particularly, the invention relates to cosmetic compositions for skin or hair cleansing.

Background of the Invention

10

Tourmaline is a complex borosilicate mineral with a variety of unusual pyroelectric and piezoelectric properties. It is probably best known for its use as a gem stone; however, in recent years, it has begun to find a number of other uses that are in one way or another connected to its unique electrical activity, which results from the presence of permanent electrodes within the crystalline structure. In particular, tourmaline in water produces an electrical discharge which dissociates the water molecule into hydrogen and hydroxyl ions, which in turn produce hydronium ions (H_3O^+) and hydrated hydroxyl ion ($H_3O_2^-$) by their reactions with H_2O molecules. Both these ions are reported to have surface active properties.

25

These observations have resulted in the use of tourmaline in a variety of different industrial products and methods. For example, US Patent No. 5,599,455 discloses a system for water treatment in which tourmaline is used in an ion generator to generate hydronium and hydroxyl ions in the water, with the reported result of "high surface activity" in the water, which is then recommended for use in detergent free washing in washing machines and in cleaning

30

oil-contaminated machinery. In a similar vein, US 5309739 discloses a tourmaline coating applied to a surface of a washing machine with the intent of forming hydroxyl ions in the wash water to aid in cleansing. It has also been
5 disclosed (JP 7024444) as being used in powder form in a shower apparatus to treat chlorinated water, so as to alter the chlorine structure, allowing it to retain its water-purifying activity, while reducing the possible negative effects of chlorine.

10

Tourmaline has also, in connection with its electrical properties, been suggested as being useful in promoting physical well-being. For example, JP 6173162 discloses fabric coated with a film containing tourmaline, which
15 fabric is made into clothing which is said to provide an electrical stimulus to the wearer's skin, to improve the wearer's health. Likewise, JP 8057060 discloses a "health therapeutic tool" based on a substrate incorporating powdered tourmaline and a diode, which tool is applied to
20 the skin to achieve a therapeutic effect.

The use of tourmaline in cosmetics has also been proposed. JP 9194321 suggests the use of very fine tourmaline powder as an antiseptic in cosmetic products. In
25 addition, US 4857306 suggests the use of pure powder of semi-precious stones, including tourmaline, as a decorative addition to cosmetic compositions. However, tourmaline has not previously been used in cleansing cosmetic compositions.

30 Summary of the Invention

The present invention relates to cleansing compositions

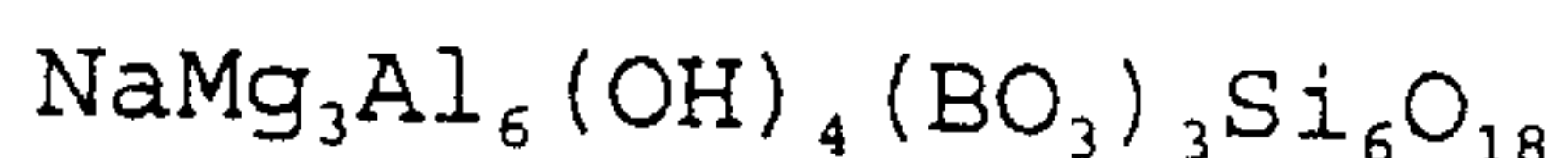
for the skin or hair comprising an effective amount of
tourmaline. The invention also relates to a method for
cleansing the skin or hair which comprises applying to the
skin or hair an effective amount of tourmaline. The
5 compositions have excellent cleansing ability, and yet are
gentle and non-irritating on the skin of the user.

Detailed Description of the Invention

10

The compositions of the invention comprise a cleansing
effective amount of tourmaline. Generally, the effective
amount of tourmaline use is in the range of from about
0.01-99.5%, more commonly between 0.01-20%, by weight of the
15 total composition, the amount depending upon the nature of
the composition. There are a variety of forms of
tourmaline. The mineral is usually found in crystal form,
with a structure based on a six-sided silicate ring(Si_6O_{18})
and BO_3 groups, with a generic formula:

20



However, substitutions within the formula can occur, in that
calcium may replace part of the sodium; lithium, aluminum or
25 ferrous iron can replace part of the magnesium; ferric iron
can replace the aluminum; and fluorine can replace the
hydroxyl group. Potassium, chromium and manganese can also
be found in tourmaline. To the extent these forms are
cosmetically acceptable, any form can be used in the
30 compositions of the invention. By cosmetically acceptable
is meant any form of tourmaline which will not cause harm to
humans or other recipient organisms.

The tourmaline used in the invention can be in any form convenient to the intended use of the final product. Generally, for a cleanser, it will be preferred that the
5 tourmaline be ground to a relatively small particle size, for example from about $.1\mu$ to about 10μ . In particular, particle sizes at the smaller end of this range, for example, between $1-10\mu$, can be used for reasons of aesthetics, and ease of combination with the remaining
10 components of the composition; however, larger particle sizes may be appropriate when a physical exfoliation action is also desired, for example in a body cleansing product. Tourmaline in its various forms is available from a wide range of commercial sources; useful tourmaline powders, for
15 example, are produced by Adam Kozan Chuo Kenkyusho Co., Ltd., Saitama, Japan.

The tourmaline can be incorporated into a variety of cosmetic cleansing products. For example, tourmaline can be
20 used in facial cleansing compositions, or in hair or body shampoos or cleanser. Depending on the nature of the composition, the tourmaline will ordinarily be combined with other components which aid in cleansing and/or conditioning of the surface to which the composition is applied. In a
25 facial cleanser, for example, additional components can include one or more of the milder surfactants; examples include, but are not limited to the amphoteric surfactants, such as alkyl betaines, amido alkyl betaines, sulfobetaines, and N-alkyl-amino propionates; or mild anionics, such as
30 fatty acid carboxylates, taurates, sulfosuccinates, isethionates, taurates, and sarcosinates, or monoalkyl phosphates. Other desirable components of facial cleansers

can include skin conditioning agents, such as humectants or emollients; viscosity modifiers, such as gums, cellulose derivatives, PEG esters and carbopol resins; and biologically active materials, such as hydroxy acids, anti-inflammatories, or anti-irritants. In the latter case, the surface active properties of the tourmaline may enhance delivery of the active agents.

The cleansing composition can also be a hair or body shampoo or cleanser. Like the facial cleanser, hair or body shampoos will contain surfactants or detergents for cleansing, for example, anionic sulfates, such as alkyl sulfates and alkyl ether sulfates, mono- and disulfosuccinates, alpha-olefin sulfates, and monoglyceride sulfates, as well as those surfactants useful for facial cleansing. Shampoos also will usually contain foam boosters, which are usually nonionic surfactants, such as alkanolamides or N-alkylpyrrolidones; and conditioning agents, such as amine oxides, silicone surfactants such as amodimethicone or dimethicone copolyol, and cationic polyquaternium surfactants. Also frequently added to hair shampoos are active components such as antidandruff agents, e.g., zinc pyrithione or pyroctone olamine. The process for formulation of cleansing products is well known in the art, and additional possible components for such formulations can be found, for example, in The International Cosmetic Ingredient Handbook, Third Edition, 1996, the contents of which are incorporated herein by reference.

The tourmaline can also be used as the cleansing element in a solid substrate used for cleaning the skin or hair. For example, the tourmaline can be impregnated onto

WO 99/45901

PCT/US99/05520

or into paper or cloth, for use as a washcloth, disposable
wipes, napkins, and the like. Alternately, the tourmaline
can be incorporated into a sponge, loofah, or similar
applicator. In some of these cases, as is apparent, water
5 will be added to the substrate at the time of use. As used
in the present specification and claims, "cleansing
composition" shall also encompass such devices in which
tourmaline forms the cleansing element.

10 In all cases, the cleansing products benefit from the
presence of tourmaline in that it permits a reduction in the
amount of detergent-type surfactant that needs to be used to
achieve proper cleansing; the latter are often perceived by
the consumer to be irritating, and therefore, any reduction
15 in the amount used is beneficial. The products containing
tourmaline, because of a reduction in surfactants, are thus
relatively mild and gentle to the skin. Tourmaline is also
effective in the process of oil removal from substrates, and
therefore, is particularly suitable for use in cleansers
20 intended for use on oily skin or hair.

The invention is further illustrated by the following
non-limiting examples.

25

EXAMPLES

EXAMPLE I

A facial cleansing composition according to the invention is
prepared as follows:

30

<u>Material</u>	<u>Weight %</u>
Cocamidopropyl hydroxysultaine	14.00

WO 99/45901

PCT/US99/05520

	Coco/oleamidopropyl betaine	16.00
	TEA-Cocoyl glutamate	15.00
	Sodium cocoyl sarcosinate	19.00
	Sodium laureth sulfate	9.00
5	Polyquaternium-6	0.40
	Methyl paraben	0.40
	propyl paraben	0.40
	water	QS
	<u>Tourmaline*</u>	<u>0.05</u>

10

*Red tourmaline, particle size about 1.7 μ from Adam Kozan

The components are blended together by conventional mixing techniques.

15

The presence of a small amount of tourmaline in this formula permits the reduction of surfactants in the formula by almost 20%, relative to a substantially identical formula containing no tourmaline, with no loss of cleansing ability.

20

What we claim is:

1. A cosmetic composition for cleansing of skin or hair,
5 comprising an effective amount of tourmaline.
2. The composition of claim 1 which comprises from about
0.01-99.5% of tourmaline by weight of the composition.
- 10 3. The composition of claim 1 which comprises from about
0.01-20% of tourmaline by weight of the composition.
4. The composition of claim 1 which comprises a tourmaline
powder having a particle size of about $.1\mu$ -10 mm.
- 15 5. The composition of claim 1 which comprises a tourmaline
powder having a particle size of about 1-10 μ .
6. The composition of claim 1 which also comprises at least
20 one surfactant.
7. The composition of claim 1 which also comprises a
conditioning agent.
- 25 8. The composition of claim 1 which also comprises a foam
booster.
9. The composition of claim 1 which is a facial cleanser.
- 30 10. The composition of claim 7 which comprises a tourmaline
powder having a particle size of about 1-10 μ .

WO 99/45901

PCT/US99/05520

11. The composition of claim 9 which also comprises at least one surfactant.

5 12. The composition of claim 11 which also comprises a skin conditioning agent.

13. The composition of claim 1 which is a hair or body shampoo.

10 14. The composition of claim 13 which also comprises at least one surfactant.

15 15. The composition of claim 13 which also comprises a foam booster.

16. The composition of claim 1 in which the tourmaline is incorporated into or onto a solid substrate.

20 17. The composition of claim 16 in which the substrate is a paper, cloth, sponge, or loofah.

25 18. A facial cleansing composition comprising from about 0.01-20% of a tourmaline powder having a particle size of from about 1-10 μ , and at least one surfactant.

19. A hair or body shampoo comprising from about 0.01-20% of a tourmaline powder having a particle size of from about 1-10 μ , and at least one surfactant.

30 20. The shampoo of claim 17 which also comprises a foam booster.

WO 99/45901

PCT/US99/05520

21. A method of cleansing the skin or hair which comprises applying to the skin or hair a composition comprising an effective amount of tourmaline.