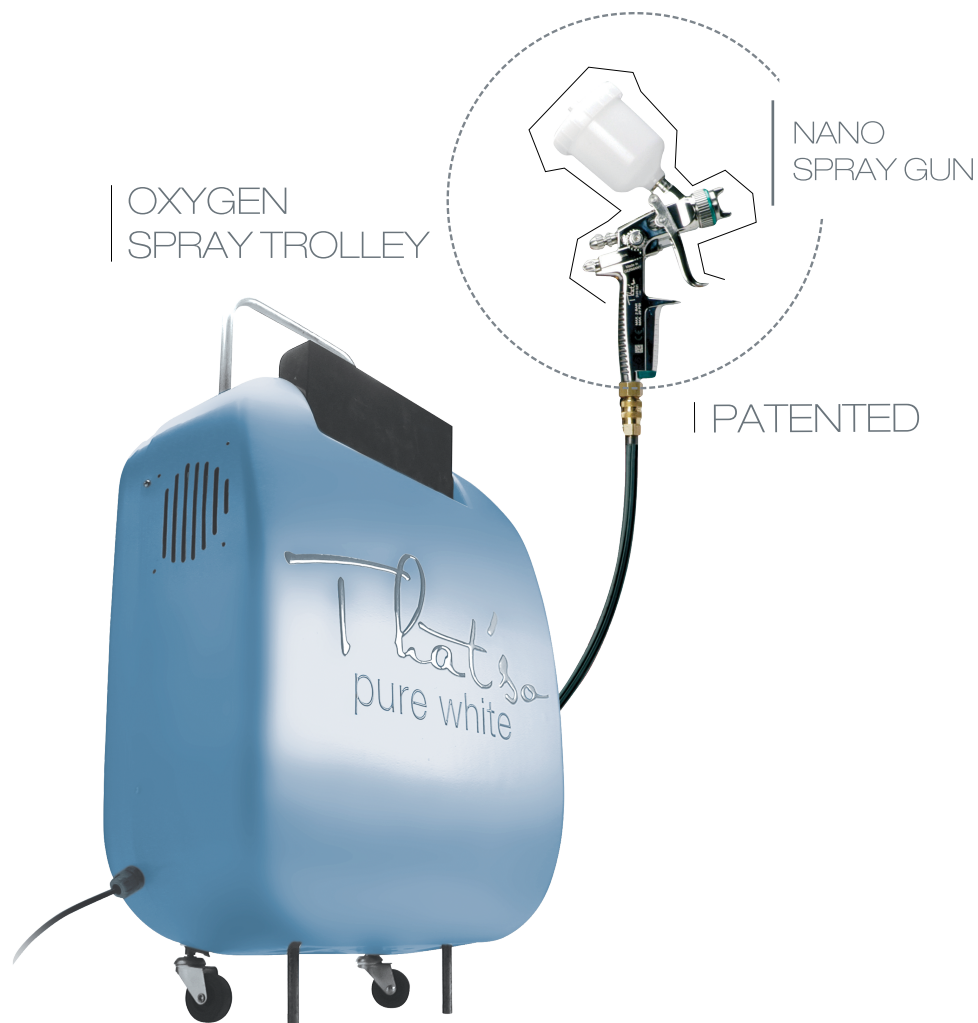


FINAL REPORT

Study of Spray System Technology



Farcoderm srl

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FINAL REPORT

Study of Spray System Technology

STUDY N°	C1507/15-07-23
CUSTOMER	Quadra Medical srl Strada Cartigliana 143B 36061 Bassano del Grappa (VI) - Italy
OBJECT	Spray technology and cosmetics efficacy
REPORT DATE	23/07/2015
REPORT N°	REL/09163/2015CLI/SAB

Spray gun cutting edge *Benefit for the skin.*

The lotion (both Sun makeup lotion and Biolight) **charged with oxygen in the chamber of blending of the gun has double effect on the skin:**

1. the **role of the oxygen** present during the spray is very important for the skin, oxygen in fact reactivates the production of elastic fibers, collagen and hyaluronic acid.
2. the lotion both Sun makeup lotion and Biolight are **enriched with active ingredients** that guarantee a different effect on the skin in detail the active ingredients present on the lotion are:

Sun makeup lotion (beauty sunless lotion)

Dihydroxyacetone (DHA): sugar reacting with amino acids of skin horny layer, providing the skin with a very similar colour to tanning. The colour is temporary and goes away with skin renovation.

Aloe (aloe barbadensis): aloe extract with hydrating effect. Skin turns soft and smooth.

Matrixyl™: it stimulates fibroblasts to synthesize collagen, elastin, fibronectin and glycosaminoglycans, restoring skin pattern and epidermal-dermal junction to reduce wrinkles.

Biolight (immediate and long lasting brightening lotion)

ActivaWhite™: innovative skin whitening mix that inhibits the production of melanin with an instant whitening effect, guaranteeing a long lasting whitening result on the skin. It has also an anti-inflammatory and anti-aging effect.

SPF protection: mixture of chemical and physical filters with sun protective action.

Coenzyme Q10 (CoQ10): it is an antioxidant, it helps neutralize harmful free radicals, which are one of the causes of aging.

Thalassine: protect skin against free radicals, and stimulate collagen production for anti-aging action.

The propulsion due to the force of the air of the active ingredients and the oxygen allows to cross the barrier of the epidermis and propagate them deep within the dermis.

This means that the treatments have an increasing of efficacy due to:

- the high level of penetration of the active ingredients, the spray pushes high-tech skincare ingredients into your skin
- the atomization of the nozzle the particles have the correct and small size for penetration.

CLINICAL/INSTRUMENTAL STUDY

MEASURING AIR DISPERSED CHEMICAL AGENTS AND EVALUATING OCCUPATIONAL EXPOSURE BY INHALATION OF SUNLESS AND WHITENING LOTION BY QUADRA MEDICAL

EVALUATING OCCUPATIONAL EXPOSURE BY INHALATION

Exposure to a chemical agent is evaluated by carried out by determining the exposure levels corresponding to the appropriate reference period for the limit value of the agent under examination

i.e.:

- 8 hour working shift - $L_{ep,d}$ (personal daily exposure level) or;
- short periods, 15 minutes, - $L_{ep,15}$.

The personal daily exposure levels are calculated by taking samples that are representative of normal working activities and weighting the various concentrations according to the following algorithm:

$$L_{ep,D} = \frac{1}{T} \sum_i (c_i \cdot t_i) = \frac{c_1 \cdot t_1 + c_2 \cdot t_2 + c_3 \cdot t_3 + \dots + c_n \cdot t_n}{T}$$

where: T is the 8 hour working shift; c_i , indicates the concentration of each individual phase i; t_i , indicates the duration of each individual phase i.

The personal daily exposure levels to the chemical agents are then compared with the corresponding limit values:

- TLVTWA for 8 hour exposure periods;
- TLVSTEL, for short periods of 15 minutes;
- MIXTURE TLV, when it is necessary to evaluate the additive effects of different substances;

(these limits are described in detail in Attachment 1).

Information about limit values:

- o As a rule the limits established by the National (Ministerial Decree 26/02/2004 and Legislative Decree 25/02/2000) and European Community legislation (Directive CEE/CEEA/CE N° 322 of 29 May 1991) are applied;
- o When measuring a chemical agent that does not appear on the CE Directive lists, the threshold limit values list published by the A.C.G.I.H. is used (these should be regarded as suggestions or recommendations).

Evaluating conformity to the limit values

The procedure used to evaluate worker exposure with respect to a limit value refers appendix C of the Standard UNI 689:1997 (see attachment 2) which can be summarised as follows:

- 1) if a single exposure measurement exceeds the limit value the exposure does not conform to the limit value;
- 2) if the exposure over a working shift is less than, or equal to 1/10 of the limit value ($R.I. \leq 0.1$) the exposure level is comfortably below the limit value; furthermore, if it can be demonstrated that this value is representative of the conditions at the work station for prolonged periods, periodic measurements may be avoided;
- 3) if the exposure values over three working shifts are less than, or equal to $\frac{1}{4}$ of the limit value ($R.I. \leq 0.25$) the exposure level is comfortably below the limit value; furthermore, if it can be demonstrated that this value is representative of the conditions at the work station for prolonged periods, periodic measurements may be avoided;
- 4) if the geometric mean of the exposure values over three working shifts is less than, or equal to half the limit value ($I.R. \leq 0.5$), without a single value exceeding the limit value, the exposure level is below the limit value; furthermore, if it can be demonstrated that this value is representative of the conditions at the work station for prolonged periods, periodic measurements may be avoided;

In cases that do not fall into any of the above categories, the procedure is inconclusive and it is necessary to carry out further tests in order to evaluate exposure levels.

MEASURING AIR-DISPERSED CHEMICAL AGENTS

Study methods

The environmental study was performed in a 20m² room with the doors and windows closed and the air conditioning and/or ventilation system switched off in order to create critical operating conditions.

The product was nebulized inside the room approximately once every 10 minutes over the entire 6-hour working period. The methods used for dispersing and the quantities were chosen in order to simulate the normal working day (8 hours) of an operator who uses the product.

The study was carried out by taking samples in a fixed position close to the operator's work station, in order to evaluate personal exposure and the corresponding risk.

Given the type of site, a background sample ("white" test) was taken, without the product under test present, in order to exclude any traces of air-dispersed substances present before the test was carried out from the final analysis. The fixed position samples were taken by positioning the probe at a height of approximately 1.5 - 1.6 m from the floor, and away from any obstacles.

The following table summarises the sampling procedure and the target agents the test was designed to detect: Date	Site	Position	Sampling conditions	Target agents
14/06/06	Farcoderm Laboratory - approx. 20m ² room	Close to the operator's work station	"white"	Organic and organohalogenic compounds (*) Inhalable powders Sodium metabisulphite
15/06/06	Farcoderm Laboratory - approx. 20m ² room	Close to the operator's work station	While nebulising the self-tanning product	Organic and organohalogenic compounds (*) Inhalable powders Sodium metabisulphite

(*) Target organic compounds: Benzene, Toluene, Ethyl benzene, Xylene, Styrene, Methanol, Ethanol, nPropanol, Isopropanol, nButanol, sec-Butanol, Isobutanol, 1-Methoxy-2-propanol, 2-Ethoxyethane, 2-Butoxyethanol, Diacetone alcohol, Ethylacetate, Propylacetate, Isopropylacetate, n-Butylacetate, Isobutylacetate, 2-Methoxyethylacetate, 2-Ethoxyethylacetate, Methyl ethyl ketone, Methylisobutylketone, Methylisopropylketone, Acetone, Acetonitrile, Tetrahydrofuran, Cyclohexane, n-Hexane, n-Pentane, Iso-octane, Diethyl ether, Cyclohexanone, 2-Methoxyethanol, Chloroform, Dichloromethane, 1,2 dichloroethane.

Measured values

The reference working environment conditions for the measurement values used for comparison with the legal limits were as follows:

Pressure: 101.3kPa

Temperature: 25 °C when using the pollution reference limit defined by A.C.G.I.H. 2005

20 °C when using the pollution reference limit defined by Ministerial Decree. 26/02/2004 or Legislative Decree 25/02/2000 N°. 66

The following table lists the monitored sampling position, the target parameters, the measured concentrations and the Test Report number (report attached).

The organic and organohalogenic compounds listed are those detected by performing gas chromatographic analysis on the samples with values exceeding the method detectability limit (0.01 mg/m), the complete list is provided in the corresponding test reports.

Date and Time of sample	Sampling conditions	Position	Target agent	Measured concentration [mg/m3]	Test Report N°.
14/06/06 between 14:57 and 21:23	"white"	Close to the operator's work station	n-Pentane Sodium metabisulphite Toluene Acetone Other organic compounds (n-hexane)* Dichloromethane Inhalable powders	0.01 0.05 0.01 0.01 0.08 0.43 0.04	06/152981
15/06/06 between 14:57 and 20:57	While nebulising the self-tanning product and whitening	Close to the operator's work station	Chloroform n-Pentane Sodium metabisulphite Toluene Xylene Acetone Other organic compounds (n-hexane)* Dichloromethane 1,2 Dichloroethane Inhalable powders	0.92 0.13 0.19 0.04 0.01 0.05 0.34 2.00 0.03 0.91	06/152982

* "Other organic compounds" are defined as those compounds, which were identified quantitatively, but not qualitatively, by gas chromatography. By analysing the gas chromatographic trace it can be seen that these compounds may be identified as aliphatic hydrocarbons of varying molecular weights. The following table lists the real values produced by nebulising the self-tanning product; these are obtained by subtracting the values measured during the "white" test.

Date and Time of sample	Sampling conditions	Position	Target agent	Measured concentration [mg/m3]	Test Report N°.
15/06/06 between 14:57 and 20:57	While nebulising the self-tanning product and whitening	Close to the operator's work station	Chloroform n-Pentane Sodium metabisulphite Toluene Xylene Acetone Other organic compounds (n-hexane)* Dichloromethane 1,2 Dichloroethane Inhalable powders	0.92 0.12 0.14 0.03 0.01 0.04 0.26 1.57 0.03 0.87	06/152982

* "Other organic compounds" are defined as those compounds, which were identified quantitatively, but not qualitatively, by gas chromatography. By analysing the gas chromatographic trace it can be seen that these compounds may be identified as aliphatic hydrocarbons of varying molecular weights.

EXPOSURE VALUES AND COMPARISON WITH LIMITS

Comparison table

The following table lists the environmental pollution levels in the areas where the study was carried out and the corresponding limits.

These values may also be used to evaluate the exposure levels for operators passing through the monitored area.

Position	Target agent	Measured concentration [mg/m ³]	TLV-TWA limit [mg/m ³]	Risk Index (R.I.)	Reference regulations
P1 Close to the operator's work station	Chloroform	0.92	10	<0.1	D.M.
	n-Pentane	0.12	1770	<0.1	26/02/2004
	Sodium metabisulphite	0.14	5	<0.1	A.C.G.I.H. 2005
	Toluene	0.03	188	<0.1	A.C.G.I.H. 2005
	Xylene	0.01	221	<0.1	A.C.G.I.H. 2005
	Acetone	0.04	1210	<0.1	A.C.G.I.H. 2005
	Other organic compounds (n-hexane)*	0.26	-	-	D.M. 26/02/2004
	Dichloromethane	1.57	174	<0.1	D.M.
	1,2 Dichloroethane	0.03	40	<0.1	D.M. 26/02/2004
	$\sum c_i/TLV_i^*$	0.13	1 (TLV mixture)	0.1	D.M. 26/02/2004
	Inhalable powders	0.87	10**	<0.1	A.C.G.I.H. 2005
					A.C.G.I.H. 2005

*Due to the presence of mixtures of chemical agents (organic and organohalogenic) the following points should be taken into consideration:

when two or more harmful substances that affect the same part of an organism are present simultaneously, the combined effects must be evaluated, in addition to the effects of the individual components.

In order to evaluate whether the exposure exceeds the limits established for the mixture, it is necessary take the sum of the ratios of the weighted concentrations of the individual products over the 8 hour period and the corresponding limits, and compare it against 1.


CONCLUSIONS

Based on the indications in 3.1 "Evaluating conformity to the limit value", by comparing measured values with the limit value it can be seen that:

the conditions in position P1 correspond to condition 2) i.e. that exposure to the air dispersed chemical agents under test was significantly lower than the threshold limit value.

Supervisore scientifico / Scientific Supervisor

Prof. Dott. Fulvio Marzatico



Farcoderm srl

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Riconosciuto Organismo Competente in EMC
Decreto 16 Febbraio 2000
Lab. accreditato Ministero Comunicazioni
Certificato n. 065
Lab. Ricerca altamente qualificato (Art. 4 L. 46/82)
D.M. 27 settembre 1999

Laboratorio
accreditato:



REPORT

Study and Analysis of Spray System Technology Technical aspects

CUSTOMER: Quadra Medical srl - Strada Cartigliana 143B, 36061 Bassano del Grappa (VI) - Italy

OBJECT: SPRAY GUN TROLLEY and SPRAY GUN NOZZLE AUTOSPRAY

REPORT DATE: 22/07/2015



Spray gun feature *Advance technology.*

The gun are the tools that guarantee perfect and homogenous application of the cosmetics products (both Sun makeup lotion and Biolight) to the skin, but also that guarantee the penetration of the active ingredients into the skin.

Regarding these points the Company Quadra Medical srl, registered this technology trough a patent.

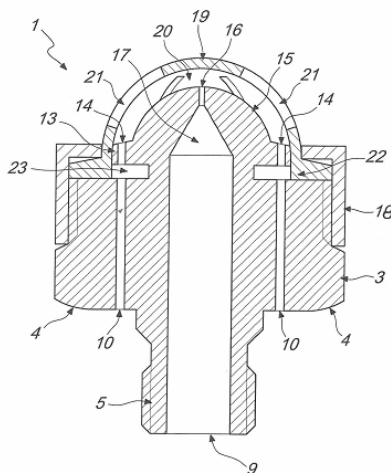
PATENT n° TV2005A000015: "STRUTTURA DI UGELLO PARTICOLARMENTE PER LA ATOMIZZAZIONE DI UN LIQUIDO" – "STRUCTURE OF NOZZLE FOR THE ATOMIZATION OF LIQUID SPRAY"

The same technology is used in Trolley and Autospray, not in Beauty Espresso:

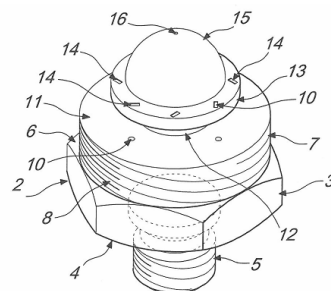
- SPRAY GUN TROLLEY
- SPRAY GUN NOZZLE AUTOSPRAY

The power of the invention is related to developed a new nozzle, with new structure for guarantee better mixing of the lotion and the air, in the chamber of blending and better atomization of the liquid. For obtain a nano particles sprayed that we call MICROCORE system.

Chamber of blending



Nozzle technology

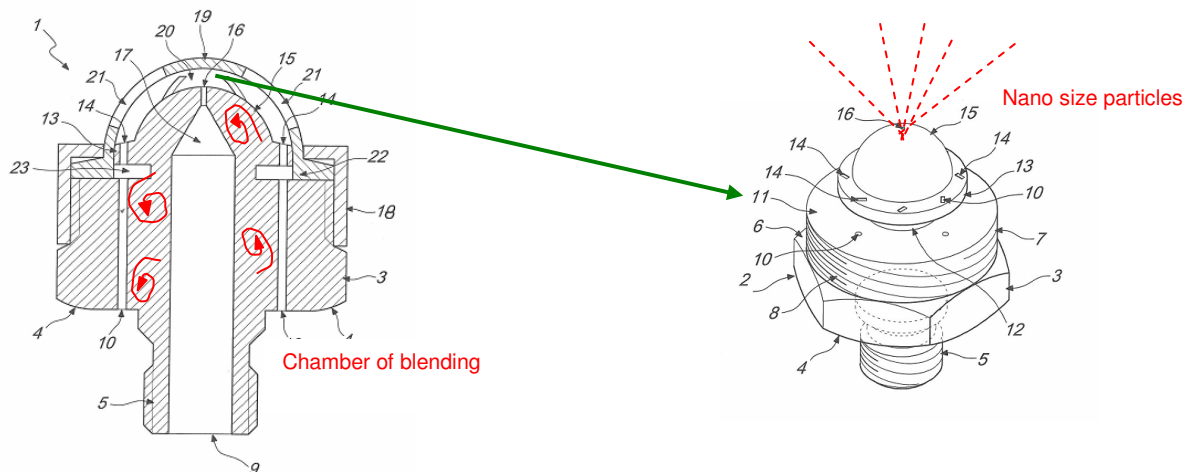




Spray gun cutting edge Advance technology.

The gun is the most important aspect related to the spray system, and the Patent related on it, is the proof and for the technical characteristic it is not the same "airbrush" that you could found in the market

There is special **chamber of blending** that guaranty a perfect mixing of the lotion and the oxygen contain in the air. The lotion (both Sun makeup lotion and Biolight) charged with oxygen, will be spray trough the **second parts of the nozzle** which allows the supply of the lotion in nano size particles.



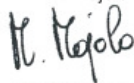
The size of nano particles are a important aspect because this small dimension guarantee the penetration inside the skin of all the active ingredients charge with oxygen.

Moreover the propulsion the lotion charged with oxygen allows to cross the barrier of the epidermis and propagate the active ingredients and the oxygen deep within the dermis.

The technology was developer for spray That'so Lotion and for their perfect activity on the skin.

Written:
Redatto da:

Operator
Operatore prove
Mauro Majolo



Verified:
Verificato da:

Test Supervisor
Supervisore delle prove
Claudio Pravato



CREI Ven S.c.a.r.l.
(The Director)
(Il Direttore)

Alessandro Zuccato



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D.M. 27 settembre 1999

Laboratorio
accreditato:



Documents



That'so
cosmetics

QUADRA MEDICAL srl



DICHIARAZIONE DI CONFORMITA'
DECLARATION OF CONFORMITY

Il sottoscritto, rappresentante il seguente costruttore
The undersigned, representative of the following manufacturer

"QUADRA MEDICAL srl"
Via Strada Cartigliana, 143/B – 36061 Bassano del Grappa (Vi) – ITALY

DICHIARA che l' apparecchiatura descritta in appresso:
DECLARES that the product:

Descrizione: **Apparecchiatura portatile per la spruzzatura di lozione**
Modello: **TS 44 MT**
Description: Portable unit for lotion spray treatment
Model: TS 44 MT

è conforme alle disposizioni legislative che traspongono le seguenti Direttive:

- direttiva 2004/108 CE (Direttiva EMC) e successivi emendamenti
- direttiva 2006/95 CE (Direttiva Bassa Tensione) e successivi emendamenti

is in accordance with the following Directives:

- 2004/108 EC Directive (EMC Directive) and subsequent amendments
- 2006/95 EC Directive (Low Voltage Directive) and subsequent amendments

e che sono state applicate tutte le norme e/o specifiche tecniche di seguito indicate
and that all the following standards have been applied

- 2006/42 CE (98/37 CEE)
- 87/404 CEE

Ultime due cifre dell'anno in cui è affissa la marcatura CE: **07**
Last two figures of the year of the CE marking:

Luogo: Bassano del Grappa (Vi) - Italy
Place

Data: 05 / 05 / 2009
Date

Il Presidente
The CEO
Sig./Mr. Fabio Durighel

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D.M. 27 settembre 1999

Laboratorio
accreditato:



Thatso
cosmetics

QUADRA MEDICAL srl



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DECLARATION OF CONFORMITY

Il sottoscritto, rappresentante il seguente costruttore
The undersigned, representative of the following manufacturer

"QUADRA MEDICAL srl"

Via Strada Cartigliana, 143/B – 36061 Bassano del Grappa (Vi) – ITALY

DICHIARA che l' apparecchiatura descritta in appresso:
DECLARES that the product:

Descrizione: **Apparecchiatura automatica per spruzzatura di lozione**
Modello: **AS2007 - TS765A**

Description: **Automatic unit for lotion spray treatment**
Model: **AS2007 - TS765A**

è conforme alle disposizioni legislative che traspongono le seguenti direttive:

- direttiva 2004/108 CE (Direttiva EMC) e successivi emendamenti
- direttiva 2006/95 CE (Direttiva Bassa Tensione) e successivi emendamenti
- direttiva 97/23/CEE (PED) e successivi emendamenti

is in accordance with the following Directives:

- 2004/108 EC Directive (EMC Directive) and subsequent amendments
- 2006/95 EC Directive (Low Voltage Directive) and subsequent amendments
- 97/23/CEE Directive (PED) and subsequent amendments

e che sono state applicate tutte le norme e/o specifiche tecniche di seguito indicate
and that all the following standards have been applied

- EN 61000-6-1: 2001
 - EN 55022: 1998+A1:2000 +A2:2003
 - EN 55014-1:2000 +A1:2001 +A2:2002
 - EN 61000-3-2:2000
 - EN 61000-3-11:2000
- EN 61000-6-3: 2001
 - EN 61000-4-2:1995 +A1:1999 +A2:2001
 - EN 61000-4-4:1995 +A1:2001 +A2:2002
 - EN 61000-4-5:1995 +A1:2001
 - EN 61000-4-6:1996 +A1:2001
 - EN 61000-4-11:1994 +A1:2001
 - EN 61000-4-8:1993
 - EN 61000-4-3:2002 +A1:2002

Ultime due cifre dell'anno in cui è affissa la marcatura CE: **08**
Last two figures of the year of the CE marking:

Luogo / Place: Bassano del Grappa (Vi) - Italy

Data / Date: 05 / 05 / 2009

Il Presidente / CEO

Fig. Mr. Fabio Durighel

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D.M. 27 settembre 1999

Laboratorio
accreditato:



Patent

Minutes of Filing Patent Application For INDUSTRIAL INVENTION

Number of request: TV2005A000015

CCIAA of deposit: TREVISO

Date of deposit: 31/01/2005

DESCRIPTION

Technical field of the invention

The power of the invention is related to developed a new nozzle, with new structure for guarantee better mixing of the lotion and the air, in the chamber of blending and better atomization of the liquid. For obtain a nano particles sprayed that we call MICROCORE system.



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