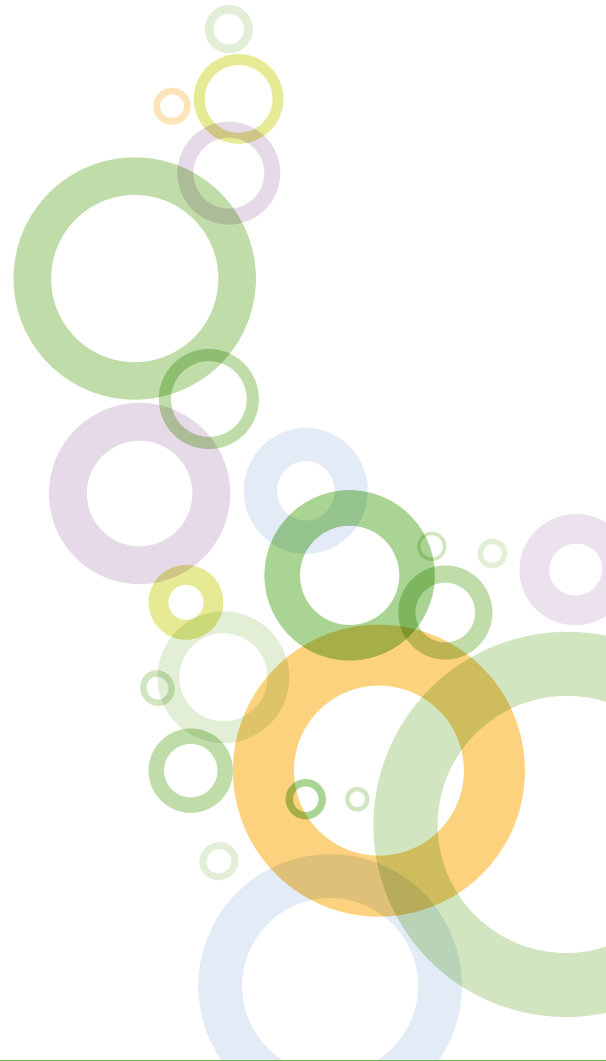


Giselle® 1.0

Catalogue





De Nora, **next care technologies**

De Nora, with the product line De Nora NEXT, supplies compact technological systems, with a low environmental footprint, for the production on site and on demand of innovative solutions with the goal of improving the health and quality of life for individuals, families and the planet.



The outstanding electrochemical cell technology, know-how and leadership position of De Nora have been harnessed in an extremely compact and small sized unit, which is now available to all professional cleaning operators.





Next generation of **sanitizing solutions**



Giselle® is an innovative system used to produce, on site and on demand, sanitizing solutions which guarantee high levels of hygiene reducing bacteria, viruses, fungi and spores.

Efficient, easy and reliable it enables a wide range of locations and objects, from spaces in everyday use to surfaces in contact with foodstuffs as well as non critical medical equipment to be rendered hygienic.



Giselle® works by using salt (sodium chloride), tap water (no water softening is required) and electricity. The salt is provided in ready to use cartridges to be inserted into the upper compartment of the machine. Each cartridge is recognised thanks to an RFID reading system which allows the machine to work only with cartridges supplied by De Nora, thereby guaranteeing the quality of the finished product.

Water is added manually to the tank placed below the machine. Once production is started it is transferred automatically from the tank to the internal reservoir for preparation of the salt and water solution.





At the end of the production cycle, the spray bottle is automatically filled with the solution and can be removed for use.



All operations can be initiated via the control panel.

Once connected to the electricity supply, Giselle® is ready to use. The salt and water solution is transformed, inside the Giselle® electrochemical cell, into Soleva® - a sodium hypochlorite solution. Once production is complete, the spray bottle is automatically filled with the solution and can then be removed for use.

The automated cycle which cleans all the internal parts, following the end of each production phase, guarantees that high quality standards are maintained.

Any limescale deposits can easily be eliminated thanks to use of the cleaning cartridge supplied specifically for that purpose. Water from the cleaning operation is drained into a second tank placed below the machine.



The salt cartridge replacement is fast and easy.

From time to time it is necessary to replenish the water supply tank and empty the tank containing wastewater. A lack of water in the former and the maximum level being reached in the latter are controlled by sensors and signalled by the activation of alarms on the machine display.

It is possible to initiate production and cleaning operations via the control panel and by following the instructions on the display. Using the control panel and the display it is also possible to configure the machine: printer activation, change language, date, time and concentration.

To make it more portable and enable location of the equipment, wherever it is required, a trolley can be supplied on which both the Giselle® unit and the water supply and drainage tanks are placed.

Technical data

MATERIAL	ABS,PTFE, PE, PVC, EPDM, Metals
PRODUCTION CAPACITY	Up to 0.5l of solution for each production cycle
POWER CONNECTION	100-240V 50/60Hz 250 W Max
RFID TRANSMITTER MODULE RFID	FCC ID PJMCPRM02
FEED WATER	Temperature from 10°C to 29 °C
AMBIENT TEMPERATURE	Min 10°C Max 40°C
AMBIENT RELATIVE HUMIDITY	Max 95% (without condensate build-up)
ALTITUDE	0-2000m above sea level
WATER CONSUMPTION	Roughly 10l per salt cartridge
DIMENSIONS	310mmx420mmx550mm (WxDxH)
WEIGHT	14kg
PROTECTION RATING	1
POLLUTION DEGREE	2
INSTALLATION CATEGORY	2
SURFACES SUBJECT TO HEAT	None
VIBRATIONS	Not appreciable
EFFLUENTS/EMISSIONS	Hydrogen Gas (0.19l/min during the production). Water with variable content of: sodium chloride, sodium hypochlorite, citric acid monohydrate 100%
WARRANTY	1 year
MAIN FUSES	2xT3.15AL250V



EPA Est. No. 089649-ITA-001

Soleva[®] solution

Soleva[®] is produced by Giselle[®] 1.0 at the two following concentrations:

LOW CONCENTRATION	0.1% active ingredient (FAC ⁺)	pH~9 (weakly alkaline)	1% sodium chloride
HIGH CONCENTRATION	0.6% active ingredient (FAC)	pH~9 (weakly alkaline)	2% sodium chloride

With one salt cartridge it is possible to produce:

- 16 bottles containing 500ml of solution with a 0.1% concentration
- 8 bottles containing 400ml of solution with a 0.6% concentration

Production takes 4 minutes for the 0.1% solution and 10 minutes for the 0.6% solution.

For each concentration a different bottle is available easily identifiable by its shape, labelling and colour and with which one can proceed with application of the solution to the various surfaces.

Upon request it is available Giselle[®] 2.0 to produce Soleva[®] at:

- 0.05% as low concentration
- 0.6% as high concentration

(*) FAC=free available chlorine

Compatibility with materials

MATERIAL		Soleva® Compatibility
Metal	AISI 316 steel	Good. It is advisable to rinse thoroughly after applying the product.
Metal	AISI 316L steel	Good. It is advisable to rinse thoroughly after applying the product.
Alloy	Nichel/Titanium	Good. It is advisable to rinse thoroughly after applying the product.
Metal	AISI 316Ti, EN 1.4571 steel	Good. It is advisable to rinse thoroughly after applying the product.
Metal	Anodized Aluminium	Good. It is advisable to rinse thoroughly after applying the product.
Metal	Epoxi coated metals	Good. It is advisable to rinse thoroughly after applying the product.
Polymer	Fluoroelastomer FKM, FPM (Viton®)	Good
Polymer	Ethylene-Propylene Diene monomer EPDM	Good
Polymer	Chlorosulfonated Polyethylene CSM	Excellent
Polymer	Polypropylene PP	Good
Polymer	Polyethylene PE	Good
Polymer	Polycarbonate	Good
Polymer	Polyethylene Tereftalato PET	Excellent
Polymer	High-density Polyethylene HDPE	Excellent
Polymer	Polyviniliden Fluoruro PVDF	Excellent
Polymer	Polyvinyl Chloride PVC	Excellent
Polymer	Polytetrafluoroethylene PTFE (Teflon™)	Excellent
Polymer	Polyaryletherketone, Polyetheretherketone PAEK (PEEK™)	Excellent
Polymer	Silicone	Low
Polymer	Polyurethane PUR, PU	Good
Polymer	Polyoxymethylene copolymer POM	Good
Polymer	Polyamide PA6, PA66 (nylon)	Low
Polymer	Polybutylene terephthalate PBT	Good
Polymer	Nitrile rubber NBR	Good
Polymer	Acrylonitrilite-Butadiene-Styrene ABS	Good
Ceramic		Excellent
Glass		Excellent

Classifications and directions for use **according to EPA* guidelines**

Sodium hypochlorite solution (0.1% or 0.05% only upon request)

- ONE STEP SANITIZER
- For hard, non-porous surfaces, environmental and food contact surfaces
- Effective against Gram Positive and Gram Negative Bacteria
- Cleans and deodorizes
- Maximum effectiveness guaranteed for 48* hours from time of production
- Ready to use

Sodium hypochlorite solution (0.6%)

- ONE STEP DISINFECTANT
- For hard, non-porous surfaces, environmental and non critical care equipment surfaces
- Kills bacteria, fungi, viruses and spores
- Cleans and deodorizes
- Maximum effectiveness guaranteed for 24** hours from production
- Ready to use

() Applied in the United States of America*

*(**) Date and time of production can be affixed to the bottle using labelling: the machine can be supplied with a printer for automatic printing of the production data*

Effectiveness

Soleva® sodium hypochlorite solution has undergone testing in line with the U.S. EPA (Environmental Protection Agency) guidelines OCSP810.2200 and OCSP810.2300 against:

Gram positive and Gram negative Bacteria

- Staphylococcus aureus ATCC 6538
- Klebsiella pneumoniae ATCC 4352
- Pseudomonas aeruginosa ATCC 15442
- Salmonella enterica ATCC 10708

Viruses

- Poliovirus type1 Sabin Strain Lcs2ab
- Feline Calicivirus F-9 ATCC VR 782
- Hepatitis C Virus ATCC VR 534
- HIV-1 (HTLV IIIB)

Fungi

- Trychophyton mentagrophytes ATCC 9533

Spores

- Clostridium difficile ATCC 43598

Operational tests (in compliance with UNI 15883 norms), without rubbing, have demonstrated the effectiveness of Soleva® in particular on BLOOD and URINE.



0.6% ACTIVE INGREDIENT



(*) Product containing sodium hypochlorite and surfactants

Safety

The Soleva® solution is classified as NON HAZARDOUS in accordance with regulation (EC) N. 1272/2008.

The salt used in the production of Soleva® is classified NON HAZARDOUS in accordance with the provisions of regulation (EC) N. 1272/2008.

The cleaning cartridge contains citric acid monohydrate 100% classified as CORROSIVE in accordance with the provisions of regulation (EC) N. 1272/2008.

To use Giselle® safely it needs to be installed:

- in well ventilated and clean locations, during production 0.19l/min of hydrogen are produced
- away from sources of heat, flames, sparks or other flammable sources
- in areas where no flammable, noxious or corrosive gases are present
- where no patients using life sustaining devices are present

The complete list of safety measures is available in the machine's user manual on website at www.denora.com or can be requested by writing to info@denoranext.com



CODE **34000030**

Giselle® 1.0 - starter kit

Specially designed for getting started, the kit offers along with Giselle® 1.0 all the basic accessories required to operate the unit and produce Soleva® solution.

The started kit contains:	Code	Packaging (DxWxH)	Weight
n°1 Giselle® 1.0	34000003	515x435x650mm	15kg
n°1 Soleva® Spray Bottles Kit	45001122	200x140x325mm	0.5kg
n°1 Giselle® Salt Cartridges-kit WW	45010183	180x140x90mm	1.2kg
n°1 Giselle® Tanks Kit	45000983	425x210x335mm	1kg
n°1 Hand Writing Labels kit	45000980	-	-

For the correct use and maintenance of Giselle® it is recommended to perform cleaning cycle with the appropriate maintenance cartridge (product code 45010189).

To better spoil mobile characteristic of Giselle® 1.0, two types of cart are available.



CODE 34000003

Giselle® 1.0

Giselle® 1.0 is a device for the on-site production of Soleva® (0.6% and 0.1%) using only tap water, salt and electric current. The unit can be sold individually and it is equipped with:

- Fixing kit
- Tubes and fittings for tap and waste water, including level sensor for waste water
- Cables for Europe and USA power connection
- Instruction manual (English and Italian)
- Material safety datasheets (English and Italian)

Material: ABS, PTFE, PE, PVC, EPDM, Metals / Production capacity: Up to 0.5l of solution for each production cycle / Power connection: 100-240V - 50/60Hz 250W max. / RFID Transmitter module RFID: FCC ID PJMCPRM02 / Feed water: Temperature from 10 to 29°C - Atmospheric pressure / Water consumption: Roughly 10l per salt cartridge / Dimension: 310x420x550 mm (WxDxH) / Weight: 14Kg



CODE 45010183

Giselle® Salt Cartridges-kit WW

Contains 12 salt cartridges package.

Package size: 180x140x90mm (WxDxH)

Cartridge Weight: 100gx12

Cartridge size: 75mmxØ40mm

High density polyethylene cartridge.

Ingredient: each cartridge contains 80g of high pure salt (sodium chloride 99.86%) for correctly operating Giselle®.

Cartridge content and expiration date are identified by RFID label.

EPA Reg. No.91386-1

EPA Est. No.91325-ITA-001



CODE 45001122

Soleva® Spray Bottles kit

Contains 2 blue Soleva® spray bottles + 2 green Soleva® spray bottles.

Blue Soleva® bottle:

- Designed for 0.1% free available chlorine concentration
- Size: 80x96x290mm (WxDxH)
- Weight (empty): 120g
- Blue connector and nebulizer for producing and applying Soleva® solution
- Blue label includes the solution's instruction for use

Green Soleva® bottle:

- Designed for 0.6% free available chlorine concentration
- Size: 64x95x300mm (WxDxH)
- Weight (empty): 120g
- Green connector and nebulizer for producing and applying Soleva® solution
- Green label includes the solution's instruction for use

Bottles are made of high-density polyethylene. Available space for application of manual or printed label with solution's production date and time.



CODE 45010189

Giselle® Maintenance Cartridges kit WW

Contains 4 clean cartridges package.

Package size: 100x100x100mm (WxDxH)

Cartridge Weight: 45gx4

Cartridge size: 75mmxØ40mm

High density polyethylene cartridge.

Each cartridge contains 25g of citric acid monohydrate 100% for performing cleaning of Giselle®.

Cartridge content is identified by RFID label.



CODE 45000983

Giselle® Tanks kit

Contains:

- 1 tank for tap water as source for the production process of the hypochlorite Soleva® solution. The tank is identified by the BLUE LABEL, clearly marked as “TAP WATER”
- 1 tank for waste water generated by the production and cleaning process. The tank is identified by the ORANGE LABEL, clearly marked as “WASTE WATER”

Both tanks are equipped with pierced stoppers for connection to Giselle®.

Material: high density polyethylene
External dimension: 200x210x325mm (WxDxH)
Weight (empty): 450g
Capacity: 11l



CODE 45000990

Premium cart

Close lockable cart, specifically design to house and fix Giselle® 1.0 on the top and store capacity for tanks and other accessories such as salt cartridges, spray bottles, printer in the lower part.

The cart is equipped with shelves, key lockable doors, 4 non-marking grey wheels and 2 independent breaks.

Thanks to the cart Giselle® and its accessories can be easily moved without disassembly and reassembly.

Materials: main structure - anodized aluminium; wheels - rubber caster

External dimensions: 570x585x920mm (WxDxH)

Wheel diameter: 100mm

Load-bearing capacity per shelf: 20kg



CODE 45000989

Standard cart

Light open dismantable cart, specifically design to house and fix Giselle® on the top shelf and storage the two tap and waste water tanks on the lower shelf.

Thanks to the cart the equipment can be easily moved without disassembly and reassembly.

The cart is equipped with 2 shelves, 4 non-marking grey wheels and 2 independent breaks.

Materials: main structure - anodized aluminium; wheels - rubber caster

External dimensions: 540x540x1085mm (WxDxH)

Wheel diameter: 75mm

Load-bearing capacity per shelf: 20kg



CODE 45001063/ 45000991/ 45000980

Thermal Printer

Thermal printer pluggable to Giselle® for printing the data relative to the production of Soleva® (concentration, date and time of production) on appropriate label to be attached on the spray bottle.

External dimension 85x150x65mm (WxDxH)

Printer Labels Kit (3000 labels)

Contains 10 rolls of appropriate thermal labels to be used with thermal printer.

Hand Writing Labels Kit (1500 labels)

Empty labels, designed to perfectly fit dedicated space on the spray bottle, for writing the data relative to the production of Soleva® (concentration, date and time of production).

1. What is Giselle®?

Giselle® is a device, based on electrochemical technology, for the production on-site of sodium hypochlorite solutions (Soleva®) that can be used for sanitization and cleaning of hard non-porous surfaces. Giselle® 1.0 produces Soleva® at two concentrations: 0.1% and 0.6% as active ingredient. Upon request it is available Giselle® 2.0 to produce Soleva® at 0.05% and 0.6%.

2. How does it work?

Giselle® works using salt (sodium chloride), tap water and electricity. Salt and tap water are mixed together inside the electrochemical cell and transformed by the electrochemical reaction into a sodium hypochlorite solution. Once ready the solution is automatically transferred inside the spray bottle through the special designed spray bottle connection and can be taken by the user.

3. Can I use any kind of salt? Where can I buy it?

No, high purity salt must be used in order to warranty the final quality of the solution. Industrie De Nora provides the salt of suitable quality in ready to use cartridges. Each cartridge is provided with an RFID transmitter recognized by the Giselle® control system in order to avoid the use of incorrect salt. Salt cartridges provided by Industrie De Nora have been registered by EPA: EPA Reg.No.91386-1.

4. Do I need softened water?

No, Giselle® works with potable tap water. Additional water treatments aren't required.

5. Do I need direct connection to water piping?

No, Giselle® is provided with a 10 liters tank to be filled with tap water.

6. Do you have any recommendation for the electrical connection of Giselle*?

Giselle® can be connected to an electrical source having the following features: 100-240V, 50/60Hz, 250W max. The electrical system must have an earth connection and the installation of an uninterruptible power supply (UPS) is recommended in case voltage variation exceeds $\pm 10\%$. For any other safety indications please refer to the user manual or request informations at info@denoranext.com

7. Where can I install Giselle*?

Giselle® is a stand alone machine, provided with a cart so that it can be positioned wherever you need taking in consideration some cautions mainly due to the emission of hydrogen (0.19l/min) during the production cycle. Mainly install it:

- In a well ventilated room (6 air changes per hour are requested) and clean
- Far from heat sources, flames, sparks or other ignition sources
- In a room without flammable, corrosive or hazardous gases

In addition it is recommended to install it in locations where there aren't patients with life-sustaining devices. For any safety indications please refer to the user manual or request informations at info@denoranext.com

8. Does it require any maintenance?

Periodic cleaning of internal piping is required in order to remove limestone. The process is run in automatic way by Giselle®. A dedicated cartridge for cleaning is provided by Industrie De Nora: it contains citric acid monohydrate 100%, each cartridge has an RFID transmitter recognized by the Giselle® control system in order to avoid the use of incorrect chemicals.

9. How much handling is required to use Giselle*?

Minimal handling is required since everything is run in automatic and safe way by Giselle®. The only manual steps are: periodic refill of tap water, periodic emptying of the waste water tank and periodic insertion of a new cartridge.

10. Is Giselle® releasing any waste water?

Yes, Giselle® produces waste water during the solution production and during cleaning and maintenance cycles. Waste water is collected in a dedicated tank having a capacity of 10 liters.

The composition of the waste water can change depending on the number and type of Soleva® solutions produced. It may contain sodium hypochlorite, sodium chloride and citric acid monohydrate 100%.

The waste water composition, in case of tests with 8 productions of Soleva® at 0.6%, was:

- 350ppm as free available chlorine
- 3g/l as sodium chloride
- pH=8.4

After the use of the maintenance cartridge the solution will contain citric acid monohydrate 100% with concentration $\leq 5\%$.

11. Is Giselle® certified?

Giselle® is certified in agreement with USA, Canada and European safety requirements for electrical equipments. It is CE and cMETus marked.

Giselle® is classified as pesticide device by U.S Environmental Protection Agency (EPA) and it is subject to the requirements specified in 40 CFR 152.500.

Giselle®, the salt (sodium chloride) and Soleva® solutions are EPA registered (EPA reg. No. 91386-1 and EPA Est. No. 91325-ITA-001)

Giselle® is produced in a registered USEPA Establishment: USEPA Est. No: 089649_ITA-001.

12. What is the Giselle® point of difference respect to other product based on electrochemical technology?

Giselle® is unique in quality and reliability control, respect to other products on the market, thanks to the RFID process control and self-maintenance system. Giselle® provides maximum flexibility of use thanks to its small dimensions (respect to other system on the market), possibility to be moved on a cart and to work without direct connection to the water supply.

13. How much volume of Soleva® solutions can I produce?

It is possible to produce 8 litres of solution at 0.1% and 3.2 litres at 0.6% with one cartridge of salt. Each production batch consists of 0.5 litres in case of the solution at 0.1% and 0.4 litres in case of the solution at 0.6%.

14. Can I select solution concentration before each batch production?

Yes. It is possible to select time by time the solution concentration to be produced or it is possible to lock the machine in order to produce only desired concentration.

15. How long does it take to produce the 0.1% and the 0.6% solutions?

4 minutes are required to prepare the 0.1% solution and 10 minutes for the 0.6% solution.

16. The active ingredient of Soleva® is sodium hypochlorite. Is there any other ingredient inside?

Both the solutions produced by Giselle® contain only the active ingredient (sodium hypochlorite) and sodium chloride:

- 0.1% active ingredient; 1% sodium chloride; pH~9
- 0.6% active ingredient; 2% sodium chloride; pH~9

17. Which is the difference of Soleva® respect to common bleach?

Bleach contains sodium hypochlorite as Soleva® but also a huge quantity of caustic stabilizer in order to have a long shelf life. Caustic stabilizers are very aggressive for people and materials.

Soleva® doesn't contain any stabilizer since it is produced on site and on demand, so that it is effective but not aggressive.

In addition Soleva® is produced at the right concentration to perform sanitization or disinfection, additional dilution isn't required avoiding waste of chemicals, spills and operators exposition.

18. How the efficacy of Soleva® has been checked?

Soleva® @ 0.1% (and 0.05% produced by Giselle® 2.0 upon request) has been tested by a third party laboratory in agreement with EPA guideline OCSPP 810.2300. Soleva® @ 0.6% has been tested by a third party laboratory in agreement with EPA guideline OCSPP 810.2200.

19. Against which kind of germs Soleva® solutions have been tested?

Soleva® sodium hypochlorite solution has been tested against bacteria, viruses, fungi and spores.

Bacteria:

- Staphylococcus aureus ATCC 6538
- Klebsiella pneumoniae ATCC 4352
- Pseudomonas aeruginosa ATCC15442
- Salmonella enterica ATCC10708

Viruses:

- Poliovirus type1 Sabin Strain Lcs2ab
- Feline Calicivirus F-9 ATCCVR782
- Hepatitis C Virus ATCCVR534
- HIV-1 (HTLV IIIB)

Fungi:

- Trychophyton mentagrophytes ATCC9533 SPORES

Spores:

- Clostridium difficile ATCC43598

20. Which is the shelf life of Soleva®?

Maximum efficacy is maintained for 48 hours by Soleva® @ 0.1% and for 24 hours in case of Soleva® @ 0.6%.

See label, booklet and manual for Salt Cartridge for Giselle®, EPA Reg. No. 91386-1, for more information.

21. Is rinsing required after the use of Soleva®?

Yes, it is especially recommended in case of stainless steel surfaces.

22. On which kind of surfaces Soleva® can be used?

On hard non-porous surfaces made by glass, ceramic, plastic and stainless steel.

For compatibility with specific materials see pag. 7

23. Are Soleva® solutions hazardous for the user?

No they aren't. MSDS are available on the web site www.denora.com or they can be requested at the following address info@denoranext.com

24. Is any other product related to the use of Giselle® hazardous for the user?

The cleaning cartridges contain citric acid monohydrate 100% that can cause Serious Eyes Irritations.

The use of this product is however limited: cleaning is requested every 80 production cycles, each cartridge contains 25g of citric acid monohydrate 100% and after opening the cartridge is directly inserted inside the machine limiting the user exposure.

MSDS are available on the web site www.denora.com or they can be requested at the following address info@denoranext.com



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