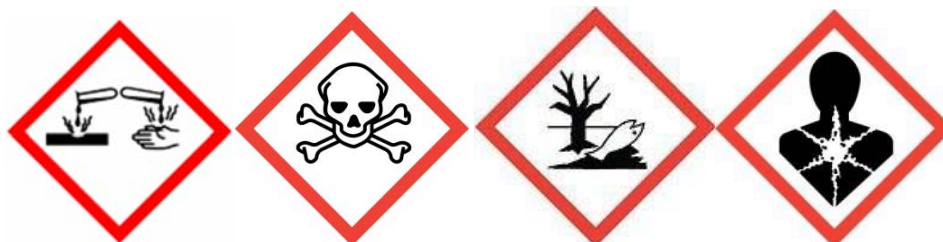


1.- Identification of the preparation and of the company

- 1.1 - **Name:** **SCF**
- 1.2 - **Product Applications:** (Bactericide) is specially designed to eliminate bacteria in produced water.
- 1.3 - **Producer:** **DIQUECINCO 2013, SL**
Calle Arago, 284 bis
08007 Barcelona (Spain)
- 1.4 - **Responsible for MSDS:**
- 1.5 - **Emergency telephone:**

2.- Hazards identification

- 2.1 - **Classification of the product:**
- | | |
|---------------------------------------|--------------|
| Class: corrosive in metals | Category: 1 |
| Class: acute toxicity (by ingestion) | Category: 3 |
| Class: acute toxicity (by inhalation) | Category: 3 |
| Class: skin corrosion/irritation | Category: 1B |
| Class: injury/eye irritation | Category: 1 |
| Class: sensitization for breathing | Category: 1 |
| Class: sensitization for the skin | Category: 1 |
| Class: acute aquatic toxicity | Category: 1 |
| Class: chronic aquatic toxicity | Category: 1 |
- 2.2 - **Symbols and Risk Phrases:**
Warning word: Attention.



2.3 -. Hazards to health:

2.3.1 - Inhalation:

Toxic in case of inhalation. (H331)
It can cause symptoms of allergy or asthma or breathing difficulties if inhaled. (H334)

2.3.2 – Skin Contact:


Causes severe burns to skin and eye injury. (H314)
It may cause an allergic reaction in the skin. (H317)

2.3.3 - Eye Contact:

Causes severe burns to skin and eye injury. (H314)

2.3.4 - Others:

It may be corrosive to metals. (H290)

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Toxic to aquatic organisms, with long-lasting harmful effects. (H411)
Very toxic to aquatic organisms. (H400)
The product does not meet the classification criteria for substances PBT (persistent/bioaccumulable/toxic) and vPvB (very persistent/very bioaccumulable).

3.- Composition / Information on components

- 3.1 - Chemical Description:**
Aqueous solution with aldehydes
- 3.2 - Hazards Components:**
Aldehydes

4.- First Aid.

Remove contaminated clothing. In case of danger of losing consciousness place and transport the person in a stable lateral position; if necessary apply artificial respiration. The person who assisted should auto protect.


- 4.1 - Eye Contact:**
Flush eyes abundantly for 15 minutes with running water with the eyelids open, subsequent control by the ophthalmologist.
- 4.2 - Contact with skin:**
Wash affected areas with abundant water, use of sterile bandage, seek medical help.
- 4.3 - Ingestion:**
Rinse mouth and then drink plenty of water, approx. 200-300ml. Seek medical assistance.
- 4.4 - Inhalation:**
Remove the affected person to fresh air. Seek medical assistance. If possible immediately inhaled a dose of corticosteroid aerosol.

5.- Firefighting measures

- 5.1 - Fire-fighting media:**
Foam, water spray, powder fire extinguishers and carbon dioxide.
- 5.2 - Special hazards of exposure to fire:**
In case of fire, oxides of nitrogen and carbon may be released.
- 5.3 - Personal Protective Equipment:**
Use a self-contained breathing apparatus (SCBA) and protective clothing.

6.- Measures in case of accidental spillage

- 6.1 - Personal precautions:**
Avoid contact with skin, eyes and clothing.
- 6.2 - Environmental precautions:**
Prevent from entering sewers, surface water or groundwater.

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6.3 - **Methods of cleaning:**

Small Spills: Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth). Dispose the material collected in a regulatory manner.

Large spills: Pump the product.

7.- **Handling and storage.**

7.1 - **Handling:**

Good aeration/ventilation of the warehouse and working areas. Avoid formation of aerosol.

Protection against fire and explosion: avoid the accumulation of electrostatic charges.

Keep away from sources of ignition. Fire extinguisher accessible

7.2 - **Storage:**

7.2.1.- **Other specifications storage conditions:**

Keep container tightly closed and in a cool and ventilated place.

Keep in inert gas.

Keep at temperatures not exceeding 40°C.

7.2.2.- **Stability during storage:**

Storage temperature: $\leq 25^{\circ}\text{C}$.

Storage period: 12 months. Data storage time cited in this Safety Data Sheet derives no warranty regarding the application properties

7.3 - **Specific Uses:**

For known uses of the product.

(Bactericide) is specially designed to eliminate bacteria in produced water.

8.- **Exposure controls / personal protection.**

8.1 - **Exposure Limit Values:**

Value VLA-EC 0.2 mg/m³; 0.05 ppm (LEP (Spain)).

8.1.1.- **PNEC**

Fresh Water: 0.0025 mg/l, Sea water: 0.00025 mg/l

Sporadic release: 0.0006 mg/l, Water Treatment: 0.8 mg/l

Sediment (freshwater): 5.27 mg/kg

Sediment (seawater): 0.527 mg/kg

Sediment (soil): 0.03 mg/kg

8.1.2.- **DNEL**

Worker: Long term exposure. Local or systemic effects, inhalation: 0.25 mg/m³

8.2 - **Personal Protective Equipment.**

8.2.1- **Respiratory protection:**

Protection of the respiratory airway in the event of formation of gas/vapors use gas filter for organic gases/vapors ($> 65^{\circ}\text{C}$, e.g. in 14387 type a. boiling point).

Protection of the respiratory airway in the event of formation of vapors/aerosols use combined filter composed for organic gases/vapors and solid & liquid particles (e.g. in 14387 type A-P2).

8.2.2 - **Protection of hands:**

Protective gloves resistant to chemical products (EN 374).

Suitable materials for a brief contact and/or spray (recommended: at least protection index 6, corresponding to > 480 minutes permeation time according to EN 374: e.g., butyl rubber (butyl) - 0.7 mm coating thickness rubber nitrile (NBR) - 0.4 mm coating thickness. Due to the wide variety of types, you must take into account the manufacturer's instructions. It should be noted, that, in practice, the daily use of chemical-resistant protective gloves is clearly inferior, because many influential factors (e.g., temperature), the time determined by the permeability tests.

8.2.3 - Eye protection:

Use safety glasses with side-shields (glasses with frame) (EN 166) and face mask.

8.2.4 - Skin protection:

Select the body protection depending on the activity and possible exposure, e.g. apron, boots protection, protective clothing resistant to chemical products (as in 14605 in case of splashes or in ISO 13982 in case of dust formation).

8.3 - Additional Information:

General safety and hygiene measures.

Do not breathe vapor/spray.

Avoid contact with skin, eyes and clothing.

Handle in accordance with the safety rules for chemical products.

Wearing of closed work clothing is an additional requirement in the indications on personal protective equipment.

9.- Physical and chemical properties

9.1 - Overview:

Characteristic odor of the product, spicy smell.

From colorless to yellowish.

9.2 - Important health, safety and environmental information:

pH	3.7 (50% (m), 23°C) 5.9 (water, 0.5% (m), 23°C)
Odor threshold	not determined due to the potential for hazardous to health by inhalation.
Melting Point	-33°C
Boiling Point	101.5°C (987.1 hPa)
Flammable Point	> 95°C (50% (m)) With no flammable point: measurement was performed at the indicated temperature, turning off the ignition flame.
Flammability	No inflammable
Auto-Ignition temperature	395°C (50% (m))
Vapor pressure	104.68 hPa (50°C)
Relative density (water = 1) at 20°C	1.13 g/cm ³
Solubility in water	soluble
Log Kow	-0.36 (23°C; pH 7)
Viscosity, dynamic	20 mPa.s (50°C)
Viscosity, kinematic	12.75 mm ² /s (25°C)

9.3 - Additional information:

Log Koc	0.76
Surface Tension	68 mN/m (20°C, 1 g/l)
Grain size distribution	used in non-solid or granular form.
Molar mass	100.12 g/mol
Heat capacity	not susceptible.
pKa	not dissociate.

10.- Stability and reactivity

10.1 - Stability:

The product is stable if the rules and indications for storage and handling are taking into consideration.

The product can be unstable at high temperatures or under pressure.

10.2 - Reactivity:

No dangerous reaction if the rules and indications for storage and handling are taking into consideration.

Metal corrosion: has corrosive effect to metals.

Formation of flammable gases: in the presence of water there is no formation of flammable gases.

10.3 - Dangerous reactions:

Reactions with amines.

Exothermic reaction.

10.4 - Conditions to avoid:

Avoid all sources of ignition: heat, sparks, and open flame. See section #7 – Handling and Storage.

10.5 - Materials to avoid:

Substances to avoid: amines.

10.6 - Hazardous decomposition of the products:

Thermal decomposition products: carbon monoxide, carbon dioxide.

11.- Toxicological information

11.1 - Acute toxicity:

11.1.1 – Assessment of acute toxicity:

Moderate toxicity after a short term inhalation. After a single ingestion is practically nontoxic. Practically non-toxic by a single skin contact.


11.1.2 - Experimental/calculated data:

LD50 rat (by ingestion): approx. 158 mg/kg (the OECD Directive 401)

LC50 rat (inhalation): 0.28 - 0.39 mg/l/4 h (similar to the policy of the OECD 403). An aerosol has been tested.

CL100 rat (inhalation): 15 mg/l 7 h (IRT). An aerosol was tested.

LD50 rat (dermal): > 1,000 mg/kg (OECD 402 directive). Toxicity data correspond to the active substance. The value corresponds to the highest concentration used in the test.

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LD50 rabbit (dermal): > 1,000 mg/kg (similar to the directive of OECD 402). Mortality was not observed. Toxicity data correspond to the active substance. The value corresponds to the highest concentration used in the test.

11.2 - Irritation:

11.2.1 - Assessment of irritating effects:

Corrosive. Cause injury to skin and eyes.

11.2.2.- Experimental and calculated data:

Corrosion/irritation (rabbit): corrosive. (Directive 404 of the OECD).

Severe injury/eye irritation (rabbit): irreversible damage. (Test Draize).

11.3 - Respiratory sensitization of the skin:

11.3.1 - Assessment of the sensitization:

Possible sensitization after contact with the skin. The substance may cause respiratory sensitization.

11.3.2 - Experimental and calculated:

Epicutaneous open trial (EEA) (Guinea pig): sensitization human skin: respiratory sensitization.

11.4 - Mutagenicity in germ cell:

11.4.1 - Assessment of mutagenicity:

The substance has been mutagenic effects in different tests in bacteria and cell cultures; however, these have not been able to be confirmed in tests in mammals.

11.5 - Carcinogenicity:

11.5.1 - Assessment of carcinogenicity:

The substance has not, in animal experiments, carcinogenic effects after administered drinking water with high doses of concentration over a long period of time.

The substance has not, in animal experiments, carcinogenic effects after administered high doses of concentration by inhalation over a long period of time.

11.6 - Reproductive toxicity:

11.6.1 - Assessment of reproduction toxicity:

Based on the available data classification criteria are not met. In tests carried out with a non-toxic dose in adult animals, they showed no adverse effects on fertility. The results were determined in a Screeningtest (OECD 421/422).

11.7 - Developmental toxicity:

11.7.1 - Assessment of teratogenicity:

In animal experiments, effects that harm fertility were not observed.

11.8.- Specific toxicity in organs diana (single exposure):

11.8.1 - Simple evaluation of the STOT (specific target organ toxicity):

It may cause irritation to the respiratory tract.

11.9.- Toxicity on repeated doses and organ specific toxicity (repeated exposure)

11.9.1 Toxicity in the case of frequent application:


After repeated ingestion, the main effect is local irritation. In the event of a repeated inhalation, the substance can cause damage to the upper respiratory tract (result of experimental testing on animals).

11.10.- Aspiration hazard:

Not applicable.

11.11.- Other:

The toxicological data are valid for the anhydrous substance.

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12.- Ecological information.

12.1 - Ecotoxicity:

12.1.1 - Assessment of aquatic toxicity:

Very toxic (acute toxicity) in aquatic organisms. During a spill in biological treatment plants there are expected variations in the function of the activated sludge. The product has not been tested. The data are derived from the values obtained for a preparation or mixed with a lower concentration of substance.

12.1.2 - fish toxicity:

LC50 (96 h) 39 mg/l, *Cyprinodon variegatus* (test in fish on the acute effects, static). The indication of the toxic effect refers to the nominal concentration.

LC50 (96 h) 9.4 mg/l, *Lepomis macrochirus* (test in fish on the acute effects, static). The indication of the toxic effect refers to the nominal concentration.

12.1.3 - Aquatic invertebrates:

EC50 (48 h) 5.75 mg/l *Daphnia magna* (acute on *Daphnia*, static test). The indication of the toxic effect refers to the nominal concentration.

EC50 (96 h) 0.75 mg/l, *Crassostrea virginica* (other/(s), continuous flow.). Data on the toxic effects refer to the concentration determined analytically.

LC50 (96 h) 5.5 mg/l, *Mysidopsis bahia* (OPP 72-3(EPA-Directive), continuous flow.). Data on the toxic effects refer to the concentration determined analytically.

12.1.4 - Aquatic plants:

EC50 (72 h) 0.6 mg/l (growth rate), *Desmodesmus subspicatus* (directive 201 OECD, static). Data on the toxic effects refer to the concentration determined analytically.

NOEC (72 h) 0.025 mg/l, *Desmodesmus subspicatus* (directive 201 OECD, static). Data on the toxic effects refer to the concentration determined analytically.

EC50 (72 h) 0.92 mg/l (growth rate), *Skeletonema costatum* (ISO/DIS 10253). The statement of the toxic effect refers to the nominal concentration.

12.1.5 - Microorganisms/Effect on activated sludge:

CE20 (30 min) approx. 15 mg/l, activated sludge, domestic (209 OECD, aerobic directive). The statement of the toxic effect refers to the nominal concentration.

12.1.6 - Chronic toxicity to fish:

NOEC (96 days) 1.6 mg/l *Oncorhynchus mykiss* (see text defined for the user, continuous flow). The statement of the toxic effect refers to the nominal concentration.

12.1.7 - Chronic-Toxicity in aquatic invertebrates:

NOEC (21 days) 2.5 mg/l *Daphnia magna* (directive 202, part 2 of the OECD, semi-static). Data on the toxic effects refer to the concentration determined analytically.

12.1.8 - Toxicity in land plants:

CE20 (19 days) 450 mg/kg, *Vicia sativa* (the OECD directive 208).

12.2 - Mobility in the soil

12.2.1- Assessment of transport between environmental areas:

The substance does not evaporate into the atmosphere from the water surface. An absorption in the solid particles of the soil is predictable.

12.3 - Persistence and degradability:

12.3.1 - Assessment of biodegradation and elimination (H2O):

Easily biodegradable (according to OECD criteria).

12.3.2. - Indications for disposal:

90-100% reduction of doc (dissolved organic carbon) (19 days) (OECD 301A (new version)) (aerobic, domestic, activated sludge, not adapted).

12.3.3. - Evaluation of stability in water:

In contact with water, the substance is hydrolyzed slowly. Information about stability in water (hydrolysis): $t_{1/2} > 1$ (50 ° C) (Directive 92/69/EEC, C.7, pH7). In contact with water substance is slowly hydrolyzed.

12.3.4 – Bioaccumulation potential:

Evaluation of the bioaccumulation potential: not expected a significant accumulation in the body, due to the coefficient of n-octanol/water (log Pow) distribution.

Bioaccumulation potential: due to the coefficient of n-octanol/water (log Pow) distribution is not expected an accumulation in organisms.

12.4 - Results of PBT and vPvB assessment:

According to Annex XIII of the Regulation (EC) No. 1907/2006 concerning the registration, evaluation, authorization and restriction of chemicals substances (REACH). The product does not contain any substances that meet the PBT criteria (persistent/bioaccumulable/toxic) or the vPvB (very persistent/very bioaccumulable) self-classification criteria.

12.5 - Other adverse effects:

The product does not contain substances listed on Regulation (EC) 1005/2009 on substances that remove the ozone layer.

12.6.- Additional indications:

Chemical oxygen demand (COD): 1,385 mg/g

Biological oxygen demand (BOD): 5 days incubation period: 235 mg/g

Halogen absorbable linked organically (AOX): The product does not contain any organic halogen compound linked to its structure.

13.- Terms of elimination**13.1 - Waste Disposal:**

Take into account the local regulations, it should be disposed in a landfill or in a proper incineration plant.

The code of residue, according to the European list of waste (CER), cannot be determined, since it depends on the use of the product.

The code of waste in accordance with the European waste catalogue (EWC) must be specified in cooperation with the manufacturer and the authorities.

13.2 - Disposal of containers:

Contaminated containers should be emptied in an optimally way so that they may be reused after a thorough cleaning.

14.- Transport information.

Transport in sealed containers that are upright and secure.

Ensure that persons transporting the product know what to do in case of an accident or spillage.

14.1 - Transport by Road (ADR):


UN Number: UN2922

14.2 - Sea transport (IMDG):

UN Number: UN2922

14.3 - Rail transport (RID):

UN Number: UN2922

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14.4 - Air transport (ICAO/IATA):
UN Number: UN2922

15.- Regulatory information

15.1 - Hazard symbols:



15.2 - Risk phrases:


Toxic.
Dangerous for the environment.
Toxic by inhalation and if swallowed.
Causes burns.
Possibility of sensitization by inhalation and skin contact.
Very toxic to aquatic organisms.
Corrosive on metals substances or mixtures corrosive on metals.
Acute toxicity.
Skin corrosion/irritation.
Injury / eye irritation.
Sensitization for respiration.
Sensitization to the respiratory tract.
Sensitization to skin.
Acute toxicity to the aquatic environment.
Chronic toxicity to aquatic environment.
Hazardous to the aquatic environment-acute.
Hazardous to the aquatic environment-chronic.

15.3 - Safety phrases:

Kept out of the reach of children.
It can be corrosive for metals.
H331 Toxic if inhaled.
H301 Toxic if swallowed.
H334 Can cause symptoms of allergy or asthma or breathing difficulties if inhaled.
H317 May cause an allergic reaction in the skin.
H314 Causes severe burns to the skin and eye injury.
H411 Toxic to aquatic organisms, with long-lasting harmful effects.
H400 Very toxic to aquatic organisms.

15.4 - Additional Information:

Conforms to Regulation (EC) 1272/2008.

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16.- Other Information

16.1 - Additional Recommendations:

Observe the legal ordinances on chemicals products.

16.2 - Technical point of contact:

In regards to the product: Technical Department. Phone

In regards to the Material Safety Data Sheet: Technical Department. Phone

16.2 - Review of the Material Safety Data Sheet:

All the points in this Material Safety Data Sheet has been reviewed.

16.4 - Further information.