



Sales and Marketing of Natural Biocide Formulations

### **NATRApHASE™ SDC Plus**

Specifically formulated for use in the Descaling and Cleaning of CIP cleaning application, removal of milk stone from storage tanks and pipe work, cleaning and sanitising of utensils, machinery, floors, walls and washrooms. NATRApHASE™ SDC Plus imparts potent anti microbial properties.

**Product: NATRAPHASE™ SDC Plus:** Specific for Sanitizing/Descaling/Hard Surface Cleaning

**Description:** The product is a low toxic, low foaming cleaner descaler with anti microbial activity which acts as a “primary sanitizer” and accelerates the dissolution of fats, proteins, oil fibres and milk stone that adhere to the surface of pipelines, tanks and mixing/blending vessels. The product is formulated as a multi-blend of specially selected organic acids and natural anti microbial botanical extracts.

**The Product:**

- Is not susceptible to deterioration in activity due to pathogen mutation
- Is highly effective in breaking down biofilm
- Replaces HARSH CAUSTIC AND ACID CLEANERS

**NATRAPHASE™ SDC Plus compared to Synthetic Products:**

Key Features	NATROX™ SDC+	Chlorine	Gluter-aldehyde	Phenolics	Quats	Peracetic Acid
Toxic	Very Low	Yes	Yes	Yes	No	No
Corrosive	No	Yes	Yes	Yes	No	Yes
Harmful Residues	No	Yes	Yes	Yes	Yes	Yes
Health and Safety Concerns	No	Yes	Yes	Yes	Yes	Yes
Naturally Derived	Yes	No	No	No	No	No
Disposal Considerations	No	Yes	Yes	Yes	Yes	Yes

**How the product works:**

Naturally occurring organic acids that are incorporated in the product start a vigorous dissolution activity on lime scale, fats, oil fibres and contaminants.

Contaminants on the surfaces of pipelines, bulk tanks and mixing/blending vessels form an excellent growth environment for harmful bacteria and other undesirable contaminating materials in the food chain. Since NATRAPHASE™ SDC Plus acts effectively as both a cleaner and anti microbial agent, reducing significantly the amount of terminal rinse required.

In addition lower water temperatures may be used helping to reduce total costs. NATRAPHASE™ SDC Plus can be used at 45°C - 50°C compared with most cleaners requiring 50°C + requiring a starting temperature of >60°C

**The Features of NATRAPHASE™ SDC Plus:**

- Broad spectrum bactericidal, virucidal and sporicidal
- Hypoallergenic
- Non tainting
- Cost effective
- Non corrosive
- Low foaming (A high foam alternative is available)
- Safe on ALL surfaces

**The Applications include:**

- CIP cleaning application
- Removal of milk stone from storage tanks and pipe work
- Cleaning and sanitising of utensils, machinery, floors, walls and washrooms
- Cleaning footwear

**Use:** NATRAPHASE™ SDC Plus should be applied at a dilution of between 2.5% - 10% depending on degree of soiling and application. Example:

- General cleaning/sanitising applications 2.50%
- Milk plants 2.50% - 10.00%
- CIP 2.50% - 10.00%

#### How to Use:

#### Automated Systems:

- **Rinse Cycle:** The first rinse cycle should have a water temperature of 45°C - 50°C and be run as programmed.
- **Wash Cycle:** Use a water temperature of 45°C - 50°C as the starting point. Allow the system to operate as programmed. Then add **NATRAPHASE™ SDC Plus** to the wash cycle at a rate of 2.50% - 10.00% depending on the degree of soiling.
- **Final Rinse:**
  - Non food tankers/lines/vessels – flush with clean water containing 0.10% of **NATRAPHASE™ SDC Plus** to ensure no salts re-precipitate after evaporation.
  - Food tankers/lines/vessels – Chlorine containing sanitizers are usually used in this cycle. We recommend replacing this stage of sanitizing with a 0.10% **NATRAPHASE™ SDC Plus**.

#### Microbiological Activity:

BS EN1276 Test Procedure – The product undergoes an efficacy screen test based on the European Suspension Test. After two (2) minutes contact time in dirty conditions @ 25°C. The kill rates are determined from the test dilution

Organism	% Kill Rate
MRSA NCIMB 50143	>99.999
E. Coli 0157	>99.999
P Aeruginosa	>99.999
S Aureus	>99.999
Candida Albicans	>99.999
Aspergillus niger	>99.999
Salmonella Typhi Murium	>99.999

#### Packaging:

- 5 litre poly containers – 2 per box
- 20 litre (21kg) drums
- 200 litre (210kg) drums
- 1000 litre (1050kg) IBC (There is a deposit of £230.00 of which £200 is credited back to customer on return of the container)

## List of Additional Organisms against which NATRAPHASE™ SDC Plus is effective.

All microbiological tests were/are carried out at an independent laboratory in accordance with BSEN 1276. Certificates are available on request.

### Bacteria Tested

Bacteria	% Kill Rate	Bacteria	% Kill Rate
Campylobacter jejuni	>99.999	Listeria innocua	>99.999
Campylobacter fetus	>99.999	Listeria monocytogenes	>99.999
E. coli 0157: h7 (EHEC)	>99.999	Mycoplasma synoviae	>99.999
Pseudomonas aeruginosa	>99.999	Mycoplasma gallisepticum	>99.999
Pseudomonas cepacia	>99.999	Enterococcus faecium	>99.999
Pseudomonas maltophilia	>99.999	Enterococcus hirae	>99.999
Salmonella arizonae	>99.999	Bordetella avian	>99.999
Salmonella choleraesuis	>99.999	Bacillus cereus	>99.999
Salmonella enteritidis	>99.999	Bacillus subtilis var. niger	>99.999
Salmonella pullorum	>99.999	Streptococcus suis	>99.999
Salmonella seftenberg	>99.999	Streptococcus faecium	>99.999
Salmonella typhimurium	>99.999	Staphylococcus aureus	>99.999
Klebsiella pneumoniae	>99.999	Staphylococcus pyogenes	>99.999
Legionella pneumophila	>99.999		

Legionella pneumophila - NCTC 11192  
Pseudomonas Aeruginosa - ATCC 15442  
Salmonella typhimurium - DT004  
Staphylococcus aureus - NCTC 657

### Pathogen Tested

Pathogen	% Kill Rate	Pathogen	% Kill Rate
Aspergillus fumigatus	>99.999	Chaetonium globosum	>99.999
Aspergillus flavus	>99.999	Cladosporium	>99.999
Aspergillus niger	>99.999	Collectotricum sp	>99.999
Aspergillus terreus	>99.999	Fusarium sp.	>99.999
Botrytis cinerea	>99.999	Mucor sp.	>99.999
Candida albicans	>99.999	Penicillium sp.	>99.999
Candida glabrata	>99.999	Pullularia pullulans	>99.999
Trichophyton mentagrophytes	>99.999	Pythium sp	>99.999
Trichophyton interdigitale	>99.999		

## Viruses Tested

Virus	% Kill Rate	Pathogen	% Kill Rate
Avian influenza (H5N1)	>99.999	Avian Pneumovirus	>99.999
Newcastle disease	>99.999	SARS	>99.999
Foot and Mouth	>99.999	HIV	>99.999
Influenza A	>99.999	Gumboro	>99.999
Human Rhinovirus	>99.999	Porcine Reproductive & Respiratory	>99.999
Syndrome (PRRS)	>99.999	Porcine Parvovirus	>99.999
Swine Influenza Virus	>99.999		

The Viruses were tested at **Retroscreen Laboratories**

The exception was:

Foot and Mouth which was tested and approved by **DEFRA**

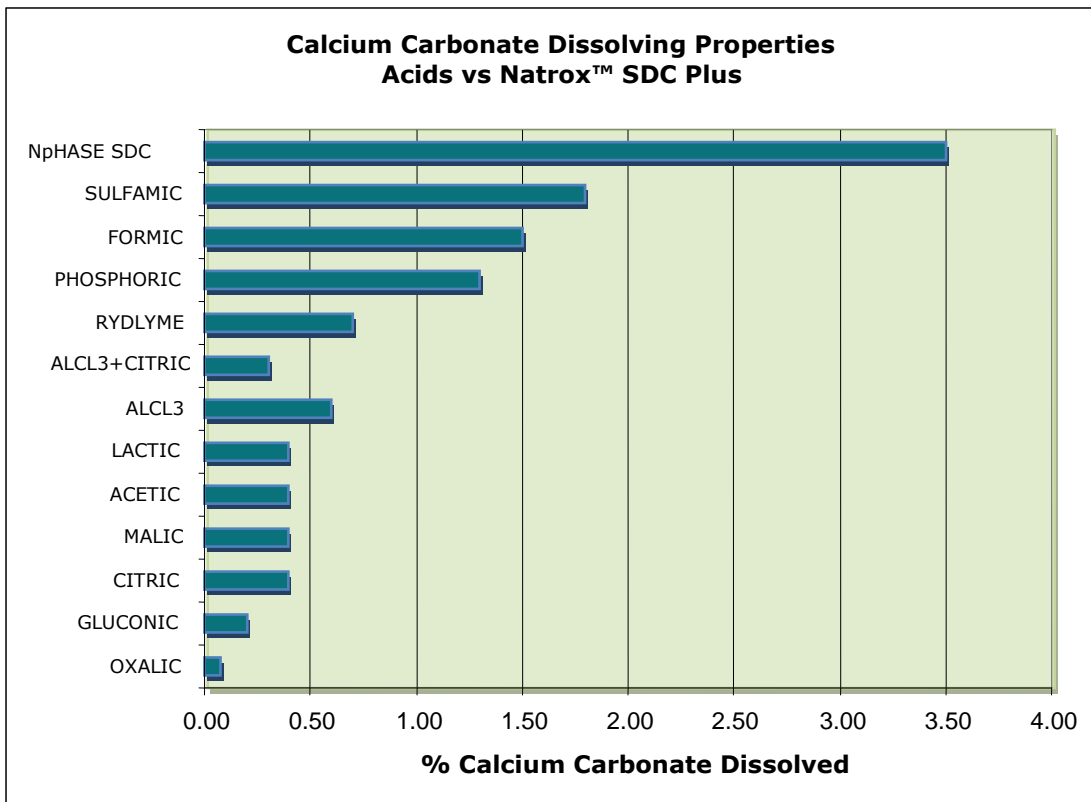
## Dissolving the Properties of Lime Scale (Milk Stone)

**NATRAPhASE™ SDC Plus** was challenged against both Calcium Carbonate and Calcium Sulphate the major constituents of Lime Scale / Milk Stone for a 15 minute exposure period.

The results as shown in Charts 1 and 2 illustrate the extremely efficient and effective way in which **NATRAPhASE™ SDC Plus** dissolves the calcium salts without incurring the down side of commonly used mineral/organic acids which are:

- High toxicity
- High corrosion
- Low biodegradability

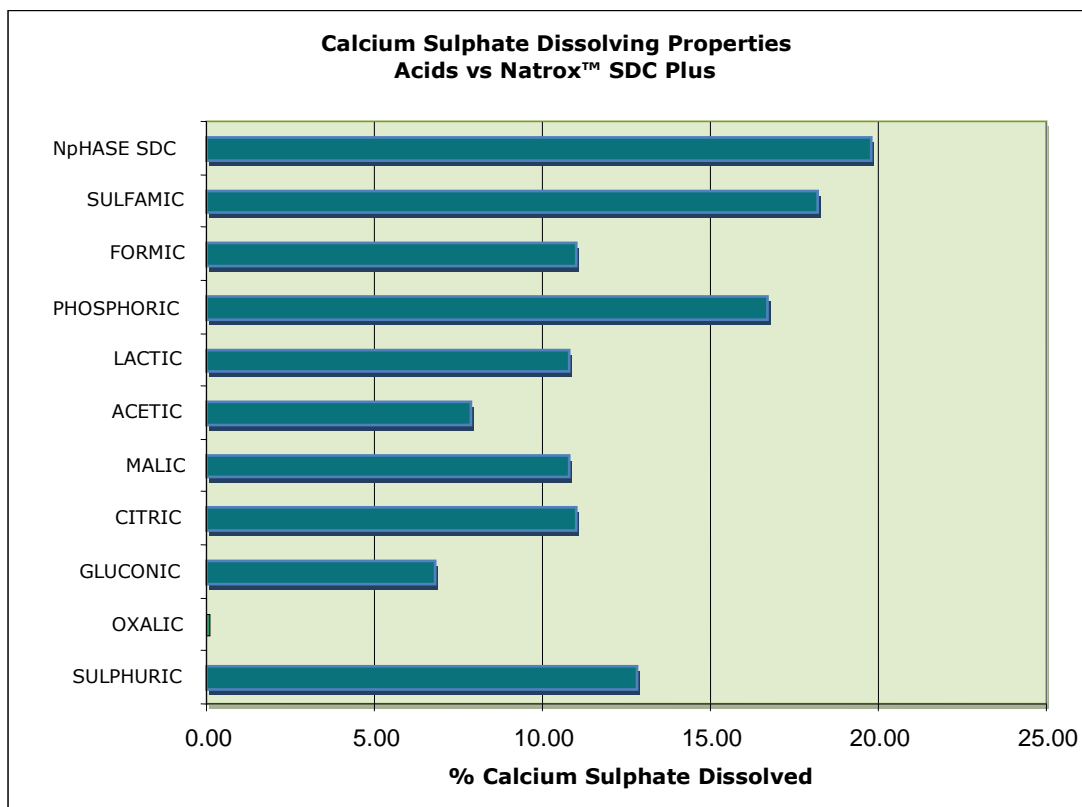
**Chart 1**



### Test Conditions:

- 200 grams of 5% NATRAPhASE™ SDC Plus solution
- 1 gram of reagent grade Calcium Carbonate powder
- Add the Calcium Carbonate and mix for one (1) minute
- Vacuum filter after one (1) minute and record the weight of the undissolved Calcium Carbonate

Chart 2



**Test Conditions:**

- 200 grams of 5% NATROX™ SDC Plus solution
- 1 gram of reagent grade Calcium Sulphate powder
- Add the Calcium Sulphate and mix for one (1) minute
- Vacuum filter after one (1) minute and record the weight of the undissolved Calcium Sulphate.

**NACE STARDARD**

**Corrosive Data:**

The corrosive rate for **NATRApHASE™ SDC Plus** is 0.6379 millimetres per year (mmpy). According to OSHA and DOT, a product is NOT CORROSIVE if it does not exceed 6.25mmpy at a test temperature of 55°C when tested against NACE STANDARD TMO169-76. The **NATRApHASE™ SDC Plus** results represent a very wide cross section of applications for cleaning applications.

## TRIANGLE TEST RESULTS

Results of the test are given in Table (1)

**Table (1)**

Test Reference Number	No. of Assessors	No. Correctly Identifying the Different Samples	Significance
<b>102153/1</b>  Untreated (control) versus Treated Whole Milk  (treated milk previously stored in direct contact with bottles cleaned with 2% Solution of Citrox Sterilising Fluid for 24 hours at 5°C or less)	30	9	Similar at 10% Beta and 30% Pd

For a triangle test for similarity, using 30 judgements, a maximum number of 11 correct responses are required to establish similarity between two samples. The results indicate that 9 assessors correctly identified the odd sample. We can therefore conclude that the samples are similar, at the chosen level of 10% Beta ( $\beta$ ) and 30% Pd. That is we are 90% confident that only 30% of discriminators can detect a difference between samples.

Alpha – probability of concluding that a perceptible difference exists when one does not.

Beta - probability of concluding that no perceptible difference exists when one does.

Pd – the proportion of assessments in which a perceptible difference is detected between the two products.

Reference: Sensory Analysis Methodology – Triangle Test BS ISO 4120:2004

Descriptor given when the different sample was correctly identified can be seen in Table (2)

**Test Reference No: 102153/1**

**Table (2)**

SA/102153/1 Whole Milk	Untreated (Control)	More creamy (1) Tastes fattier (1) Watery taste (1)
SA/102153/2 Whole Milk  (Treated milk: previously stored in direct contact with bottles cleaned with a 2% Solution of Citrox Sterilising Fluid and Stored for 24 hours at 5°C or less)	Treated (Test)	Sweeter (3) Less harsh aftertaste, slightly less creamy in texture and taste (1) Slightly watery flavour compared to the other two samples (1) More creamy (1)

# MATERIAL SAFETY DATA SHEET

## PRODUCT IDENTIFICATION AND SPECIFICATION

**Product Description:** NATRAPHASE™ SDC Plus

**Product Code:** NPSDC020, NPSDC200, NPSDCIBC (20Litre, 200Litre, 1000Litre)

## 1 COMPOSITION AND INFORMATION ON COMPONENTS

<b>Components:</b>	Alkyl Glucosides	Alpha Hydroxy Acid
	NATRAPHASE™ FC	Natural Anti Microbial Agent
<b>Concentration:</b>		< 10%
<b>EINECS No:</b>		201-180-5
<b>CAS No:</b>		77-92-9
<b>Hazard:</b>		Xi Irritant
<b>Risk Phases:</b>		R36/38 Irritating to eyes and skin

## 1. HAZARDS IDENTIFICATION

This product is classed as a mild irritant and can cause irritation to the eyes and skin.

## 2. FIRST AID MEASURES

**Eyes:** Immediately flush eye with eye-wash solution or clean water for at least 10 minutes

**Skin:** Wash the affected area with plenty of water

**Ingestion:** Get medical attention. Drink copious amounts of water

**Inhalation:** Non-volatile liquid product

## 3. FIRE FIGHTING MEASURES

**Extinguishing Media:** Product is non-combustible

**Special Hazards:** None

## 4. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear rubber gloves if prolonged contact with liquid

**Environmental precautions:** No particular/specific measures required

**Spillage treatment:**

Small spillage: Wash to drain with large amounts of water.

Large spillage: Contain with sand or earth and neutralize with lime or sodium carbonate and remove to suitable container for transfer to an approved chemical tip or alternatively flush to drain with copious quantities of water.

## 5. HANDLING AND STORAGE

**Handling:** Trained personnel wearing suitable protective clothing  
Avoid contact with skin or eyes

**Storage:** Store in a secure chemical area at ambient temperature

**Packaging:** Supplied in 20, 200 litre and IBC approved plastic containers

## 6. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**General:** No specific measures are required provided the product is handled in accordance with the general rules of occupational hygiene and safety. Avoid contact with eyes, skin or clothes.

**Personal Protection:** The following personal protective equipment should be provided

**Skin protection:** Protective overalls/shoes

**Hand protection:** Impervious gloves

**Eye protection:** Chemical safety goggles

## 7. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear yellow liquid

**Odour:** None

**Density:** 1.027-1.040

**pH 1% Solution:** 1.00 - 2.00

**Solubility:** Miscible with water

## 8. STABILITY AND REACTIVITY

**Stability:** Stable under normal storage conditions

**Conditions to avoid:** Protect from frost

**Material to avoid:** Avoid contact with alkalis. (**Do not mix** with chlorinated detergents bleach)

**Decomposition:** Toxic gases and vapour may be released

## 9. TOXICOLOGICAL INFORMATION

**Acute Toxicity:** Low order of acute toxicity

**Eyes:** Contact with liquid or spray can cause eye damage

**Skin:** Mildly aggressive to skin

**Ingestion:** If taken orally internal damage can result

**Inhalation:** None available

## 10. ECOLOGICAL EFFECTS

**Mobility:** Product dissolves completely in water

**Degradability:** Product is above 98% biodegradable

**Accumulation:** None known

**Eco-toxicity:** Contains substances which can affect aquatic environment

## 11. DISPOSAL

Wear appropriate protective clothing. Soak up with sand or earth, neutralize and remove to suitable container for transfer to chemical tip. Alternatively flush to drain with copious quantities of water. Disposal should be in accordance with waste disposal or water authority regulations.

## 12. TRANSPORT INFORMATION

**UN No:** Not classified  
**Hazard class:** Not classified  
**Packaging group:** Not classified

Only transport in original containers in upright position. Never remove containers from cardboard containers before transporting. Unless containers are palletized never transport stacked more than 2 high.

## 13. REGULATORY INFORMATION

Chemicals (hazard information and packaging for supply)  
Regulations 1996 classification: Xi Irritant

**Risk phrases:** R36/38 Irritating to eyes and skin  
**Safety phases:** S26 In case of contact with eyes and skin, rinse with plenty of water and seek medical advice.  
S37/39 Wear suitable rubber gloves and eye/face protection  
Use of this product may be governed by the following;  
Chemical Hazard Information and Packaging Regulations 1996  
Carriage of Dangerous Goods by Road and Rail (C.P.L) Regulation 1996  
Control of Substances Hazardous to Health Regulations 1996

## 14. OTHER INFORMATION

This product is a process wash aid for use in the food and associated industries.

Natural Preserves has used every possible care in compiling, preparing and issuing this information. Manufacturers using this product must nevertheless satisfy themselves of the suitability of the material for incorporation in their own end-products having regard to all relevant obligations therewith, whether under the Food Safety Act, Feeding Stuffs Regulations, Health & Safety at Work Act, Control of Substances Hazardous to Health Regulations 1996 or any other relevant legislation or common law requirement.

**Legal status:** Local food regulations should always be consulted concerning the status of this product as legislation regarding its use in food may vary from country to country.

The information contained in this publication is based on our own research and development work and is to the best of our knowledge reliable. Users should, however, conduct their own tests to determine the suitability of our product for their own specific purposes. Statements contained herein should not be considered as a warranty of any kind, expressed or implied and no liability is accepted for the infringement of any patents.



Sales and Marketing of Natural Biocide Formulations

**Natural Preserves Limited,  
Unit 10, Business Centre, Eanam Wharf, Blackburn, Lancashire BB1 5BL United Kingdom  
Tel: +44 (0)1254 678703 Mobile: +44 (0)7918 759577  
E-mail: [info@naturalpreserves.co.uk](mailto:info@naturalpreserves.co.uk) WWW: [www.naturalpreserves.co.uk](http://www.naturalpreserves.co.uk)**

**Company Registration Number: 6161556 VAT Registration Number: 919 6868 62**