

COSA[®] DES

Description

Liquid disinfectant for the pharmaceutical and cosmetic industry

Characteristics

- broad spectrum of activity
- quick-acting, also in cold areas
- stabilized by special stabilizing agents

Subject to incoming goods control

Appearance: clear, colourless liquid

TITRATION:

Total acid content: 10.2 - 11.2 %

Use solution: 0.2 - 0.5g in 100ml demin. water

Titration: 0.1 mol/l NaOH

Endpoint: Phenolphthalein

% Total acid = $\frac{\text{amount of 0.1 n NaOH} * 0.6}{\text{Sample weight [g]}}$

Hydrogen Peroxide: 25.5 - 28.0 %

Peracetic Acid: 4.5 - 5.2 %

Use solution: 100ml (0.1% solution)

Titration 1: 0.1 n Potassium permanganate
(KMnO₄ = 0.02 mol/l)

Titration 2: 0.1 n Sodiumthiosulfate
(Na₂S₂O₃ = 0.1mol/l)

Indicator: Potassium Iodide / Starch solution
(1%)

% Hydrogen Peroxide = Amount of 0.1 n KMnO₄ * 1.7

% Peracetic Acid = Amount of 0.1 n Na₂S₂O₃ * 3.8

Properties

Concentrate Storage stability:	-20 to 30 °C
Density:	1.10 - 1.14 g/cm ³
P content:	0.18 %
N content:	0.00 %
COD:	not applicable
Flash point:	not applicable
Application solution	pH: 3.0 - 3.4 (1 %, 20 °C, deionized water)
	Foam characteristics: none foaming, suitable for CIP-systems

Material compatibility: **COSA DES** is, under the application described below, compatible with

- **Metals**

aluminium, austenitic CrNi steels (quality at least DIN 1.4301 = AISI 304), galvanized iron Aluminium, austenitic CrNi steels (quality at least DIN 1.4301 = AISI 304), copper and mild steel (St 37/2), show surface losses which remain within acceptable limits, but the stability of the sanitizing solution is impaired. Short-term exposure is possible (see table of losses).

As it is the case with all acidic and/or oxidative disinfectants, static disinfection should not be carried out due to the risk of pitting corrosion. Static solutions, high chloride content in the batch water and high temperatures favor pitting corrosion.

- **Plastics**

(application solution)

PE, PP, rigid PVC, PTFE, PVDF, epoxide coatings

The suitability of higher concentrations and/or other plastic materials should be tested in case of need

- **Seals**

In view of the wide range of different seals, it is advisable to test their suitability in case of need.

Softening agents may slowly oxidize with **COSA DES**. Plastics and seals may age and embrittle earlier, and possibly have to be exchanged more frequently.

Corrosion test			
Surface losses when using COSA DES in g/(m² x h)			
at 20 °C and 16 °d			
Material	0.2 %	0.5 %	1.0%
Aluminium 99.5	0.00	0.00	0.00
Chrome nickel steel 1.4301	0.00	0.00	0.00
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Tinned iron	0.00	0.00	0.00
Galvanized iron	0.05	0.20	0.50
Iron steel St 37/2	0.70	1.10	1.60
Copper *	0.05	0.10	0.50

* Discolorations possible

Microbiology

Bactericidal and fungicidal effect of **COSA DES**:

Efficacy according to EN 1276, EN 1650 and EN 13697

Bactericidal Efficacy at 20°C				
1.: in accordance to DIN EN 1276 (suspension test)				
Test organism	Contact time in minutes	Concentration in %	Log reduction factor	
			Clean conditions	Dirty conditions
Gram-positive bacteria				
Staphylococcus aureus (ATCC6538)	5	0,2	>5	--
	5	0,25	--	>5
	5	0,5	--	--
Enterococcus hirae (ATCC 10541)	5	0,2	>5	--
	5	0,25	--	--
	5	0,5	--	>5
Gram-negative bacteria				
Escherichia coli (ATCC 10536)	5	0,2	>5	>5
	5	0,25	--	--
	5	0,5	--	--
Pseudomonas aeruginosa (ATCC 15442)	5	0,2	>5	>5
	5	0,25	--	--
	5	0,5	--	--

Bactericidal Efficacy at 20°C

1.: in accordance to DIN EN 13697 (surface test)

Test organism	Contact time in minutes	Concentration in %	Log reduction factor	
			Clean conditions	Dirty conditions
Gram-positive bacteria				
Staphylococcus aureus (ATCC6538)	5	0,5	>4	
Enterococcus hirae (ATCC 10541)	5	0,5	>4	
Gram-negative bacteria				
Escherichia coli (ATCC 10536)	5	0,5	>4	
Pseudomonas aeruginosa (ATCC 15442)	5	0,5	>4	

Fungicidal Efficacy at 20°C

1.: in accordance to DIN EN 1650 (suspension test)

Test organism	Contact time in minutes	Concentration in %	Log reduction factor	
			Clean conditions	Dirty conditions
Yeast				
Candida albicans (ATCC 10231)	15	0,5	>4	>4
Mould				
Aspergillus niger (ATCC 16404)	15	3,0	>4	>4

Fungicidal Efficacy at 20°C

1.: in accordance to DIN EN 13697 (surface test)

Test organism	Contact time in minutes	Concentration in %	Log reduction factor	
			Clean conditions	Dirty conditions
Yeast				
Candida albicans (ATCC 10231)	30	2,0	>3	
Mould				
Aspergillus niger (ATCC 16404)	30	2,0	>3	

Sporicidal effect of **COSA DES**:

Efficacy against *Bacillus cereus* according to EN 13704

Sporicidal Efficacy at 35°C				
1.: in accordance to DIN EN 13704 (suspension test)				
Test organism	Contact time in minutes	Concentration in %	Log reduction factor	
			Clean conditions	Dirty conditions
<i>Bacillus cereus</i> (ATCC 12826)	5	2,0	>3	

Application

COSA DES is used for the rapid surface disinfection in the pharmaceutical and cosmetic industry.

Mode of application

The contact time of **COSA DES** solutions is preferably determined by the applied concentration, temperature and micro-organisms to be killed. Guide values according to the European standards at **20 °C** are included in the respective tables.

Lower temperatures down to **12° C** require a longer contact time.

Higher temperatures up to **40 °C** increase the disinfecting effect of **COSA DES** and shorten the required contact time, especially with bacterial spores.

Final rinse of all treated surfaces with water of minimum drinking water quality (preferably aseptic water), ensuring all soil and product residues are removed.

Monitoring

Concentration determination

- Titration

Chemicals required:

potassium iodide (solid)
sulphuric acid, 25 %
ammonium molybdate solution, 3 %
starch solution, 1 %
sodium thiosulphate solution n/10

Determination:

Add 10 ml of the cooled down **COSA DES** solution to a 300 ml Erlenmeyer flask and acidify it with 20 ml sulphuric acid (25 %). Add a spatula tip of potassium iodide and 1 ml ammonium molybdate solution (3 %) and leave the solution in its place for 1 - 2 minutes.

Then titrate with a solution of n/10 sodium thiosulphate until the colour changes to light yellow.

After the addition of approx. 1 ml 1 % starch solution the test solution colour changes to dark blue.

Then titrate with n/10 sodium thiosulphate solution until the blue colouring disappears.

Calculation:

Volume added (n/10 sodium thiosulphate solution) in ml
 $\times 0.064 =$ concentration of **COSA DES** in %.

Concentration control

Following the indicated titration specification, the amount of hydrogen peroxide/peracetic acid is determined.

A rapid semi-quantitative determination can be carried out by means of "Merckoquant peracetic-test" paper strips (company Merck, order-no. 10084). This method detects 0 - 50 ppm peracetic acid. A 0.1 % **COSA DES** solution contains approx. 45 ppm peracetic acid.

The dosage of **COSA DES** can be performed volume- or time-proportional (e. g. by means of **Ecolab Elados EMP-**dosage pumps).

Safety

The relevant hazards identifications of **COSA DES** are given in the EC Safety Data Sheet. If any questions arise in this context please contact your Ecolab representative.

contains peracetic acid, hydrogen peroxide and acetic acid

Use biocides safely. Always read the label and the information given in the safety data sheet before use.

Important indications:

1. Oxygen bleaching agent
2. Do not apply as a concentrate
3. Store preferably in original containers and dose from there; if the product is transferred to another container, it should be pumped to a suitable plastic vessel (e.g. teflon, polystyrene, polyethylene) which has been cleaned with an acid solution beforehand.
4. The concentrate vessel should be provided with a ventilation device, which prevents the penetration of soils
5. Avoid any concentrate contact with organic substances (grease, oil, rubber, paper, straw, wood, cork, common soils) and other concentrated cleaning and disinfecting agents, especially alkalis
6. Do not use rubber hoses when transfusing or pumping the product and always take care of clean vessels
7. Do not use or store in closed systems (e. g. spray equipment for concentrates)
8. Cold storage
9. Avoid direct exposure to sunlight
10. Do not spill
11. Wear protective equipment
12. Avoid any contact with skin and eyes
13. After contact with skin, immediately rinse with plenty of water

The statements, information and data presented herein are believed to be accurate and reliable. The information describes the characteristic features of **COSA DES** in ordinary use but cannot be taken as a guarantee, express warranty or implied warranty for the suitability for a particular purpose and shall not extend mandatory warranty rights (if any). The specifications and performance may vary subject to the operational conditions. Since numerous parameters will influence product performance and applicability, this information does not exonerate the user from liability with respect to the suitability of the product and the appropriate safety measures to be taken. Moreover, a possible infringement of patent rights must be avoided at all times.

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