

# P3-hypochloran®

**Description:** Liquid, available chlorine containing disinfectant for the food industry

**Product strengths:**

- reliable microbiological efficacy
- suitable for CIP- and spraying systems
- surfactant-free

## Properties

<b>Concentrate</b>	<b>Appearance:</b>	yellowish liquid *	
	<b>Storage stability:</b>	-5 to 35 °C	
	<b>Solubility:</b>	at 20 °C miscible with water in any proportion	
	<b>Density:</b>	1.15 - 1.19 g/cm <sup>3</sup> *	
	<b>P content:</b>	0.03 %	
	<b>N content:</b>	0.00 %	
	<b>COD:</b>	not applicable	
	<b>Flash point:</b>	not applicable	
	<b>Application solution</b>	<b>pH:</b>	11.4 - 11.8 * (1 %, 20 °C, deionized water)
		<b>Foam characteristics:</b>	non foaming, suitable for CIP-systems

\* Parameters subject to incoming goods control

**Material compatibility:** **P3-hypochloran** is, under the application conditions described below, compatible with

- **Metals**

austenitic CrNi steels (quality at least DIN 1.4301 = AISI 304), tinned iron

Due to the risk of pitting corrosion, pH values < 9 and static disinfections of more than 2 hours at 20 °C should be avoided.

For the storage of **P3-hypochloran**, concentrate containers and -pipelines of metallic material are not suitable.

- **Plastics** PE, PP, rigid PVC, PTFE, PVDF, PS, epoxide coatings
- **Seals** In view of the wide range of different seals, it is advisable to test their suitability in case of need

## Microbiology

Bactericidal and fungicidal effect of **P3-hypochloran**:

Sterilization time in minutes using the modified DVG suspension test method

Sterilization time in minutes at 20 °C					
Test organisms	Organism conc./ml inoculum	without loading		with protein loading <sup>*)</sup>	
		0.1 %	0.25 %	0.1 %	0.25 %
<b>Gram-positive bacteria</b>					
Staphylococcus aureus ATCC 6538	2.0 x 10 <sup>8</sup>	5	5	>60	60
Enterococcus faecium ATCC 10541	2.1 x 10 <sup>8</sup>	5	5	>60	>60
Listeria monocytogenes ATCC 20600T	1.0 x 10 <sup>8</sup>	5	5	>60	30
<b>Gram-negative bacteria</b>					
Pseudomonas aeruginosa ATCC 15442	2.2 x 10 <sup>8</sup>	30	5	>60	>60
Proteus mirabilis ATCC 14153	3.4 x 10 <sup>8</sup>	15	5	>60	>60
Escherichia coli ATCC 10536	2.6 x 10 <sup>8</sup>	5	5	>60	30
Salmonella typhimurium ATCC 13311	1.0 x 10 <sup>8</sup>	15	5	>60	>60
<b>Yeasts</b>					
Candida albicans ATCC 10231	9.3 x 10 <sup>7</sup>	5	5	30	5
Kluyveromycea lactis DSM 4394	1.0 x 10 <sup>7</sup>	5	5	5	5
<b>Moulds</b>					
Geotrichum candidum DSM 1240	9.0 x 10 <sup>7</sup>	5	5	30	5
Aspergillus niger ATCC 16404	3.0 x 10 <sup>7</sup>	15	15	>60	15

\* DVG-protein loading = 10 % beef serum

Especially considering major harmful germs in the food industry

## Ecology

With the application of **P3-hypochloran**, the AOX-limits in the waste water have to be considered. Alternatively, disinfectants as chlorine dioxide (P3-oxocid/P3-oxonet) or peracetic acid (P3-oxonia active) should be used for the described application.

## Application

**P3-hypochloran** is a quick-acting, non foaming disinfectant, based on available chlorine.

- **CIP-systems**

Concentration: 0.1 - 0.25 %  
Temperature: 20 - 60 °C  
Contact time: 10 - 20 minutes

- **Dipping of fittings, taps, small pieces**

Concentration: 0.1 - 0.25 %  
Temperature: cold  
Contact time: 10 - 20 minutes

- **Bottling hall**

### **Bottle washing machine, rinsing section**

To prevent a reinfection of cleaned bottles, **P3-hypochloran** is added to the rinsing section in the bottle washing machine.

Concentration: 0.003 - 0.005 %  
□ 3 - 5 ppm available chlorine  
Temperature: 30 - 50 °C  
Contact time: 10 - 20 seconds

Final rinse with water of drinking water quality, ensuring all soil and product residues are completely removed.

The application indications are assumed values to our experiences and may be corrected, depending on specific application conditions.

### **Important indications !**

- Effluent, containing chemicals, must only be discharged according to the local regulations
- Chemicals containing effluent must only be discharged into the biological treatment station after passing the neutralization- and buffer tank
- When discharging chemically polluted effluent, it is essential to pay specific attention to the bacteria toxicity of this water. This is especially important when dealing with biocide containing effluents and anaerobic sewage plants
- In case of doubt please seek advice from our technical service

# Monitoring

## Concentration determination

• <b>Titration</b>	Receiving flask:	100 ml application solution
	Titration solution:	0.1 n sodium thiosulphate solution
	Indicator:	potassium- or sodium iodide, 1 % starch solution
	Titration factor:	35.5

Add potassium- or sodium iodide and acidify with sulphuric acid.

Volume added sodium thiosulphate in ml x 35.5 =  
concentration available chlorine in mg/l (= ppm)

## Concentration control

The **P3-hypochloran** concentrate can be added directly to the rinsing water. We recommend the use of **P3-Elados EMP** diaphragm pumps for metering.

Our P3-System brochures are available on request.

## Safety

**P3-hypochloran** is labelled as "corrosive" (symbol "C"); it contains sodium hypochlorite solution

### Important indications:

1. Do not apply in concentrate
2. Do not store in containers of stainless steel
3. Storage only in delivery containers or transfusion to suitable concentrate tanks (PE, PTFE); dosage to be regulated directly from the storage vessel
4. Avoid any concentrate contact with organic substances (grease, oil, rubber, paper, straw, wood, cork, common soils) and other concentrated cleaning and disinfecting agents, especially acids (formation of chlorine gas!)
5. Cold storage - not exceeding 40 °C
6. Avoid direct exposure to sunlight
7. Small spilled amounts can be reduced with sodium thiosulphate solution; larger amounts with P3-oxonia

The relevant risk and safety phrases are given in the EC Safety Data Sheet. We recommend our safety concept "P3 - immer auf Nr. Sicher" (P3 - safety first) as an aid to training your employees in how to handle cleaning agents and disinfectants safely. We will be glad to answer any questions you may have in this context.

The statements, information and data presented herein are believed to be accurate and reliable. The information describes the characteristic features of **P3-hypochloran** in ordinary use but can not 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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