P3-ultrasil® 73

Description:

Acid, surfactant-based, liquid cleaner for membrane filtration plants

Product strengths:

- excellent removal of fat and mineral oil as well as inorganic soil
- phosphorus-free
- nitrogen-free

Properties

Concentrate	**Appearance:**	clear, yellowish to yellow liquid
	Storage stability:	0 - 40 °C in original sealed container
	Solubility:	at 20 °C miscible with water in any proportion
	Density:	1.05 - 1.09 g/cm³ *
	P content:	0.0 %
	N content:	0.0 %
	Flash point:	not applicable
Application solution	**pH:**	2.0 - 2.6 * (1 %, 20 °C, 0 °d water)
	Conductivity:	1.00 mS/cm (1 %, 20 °C, deionized water)

* Parameters subject to incoming goods control

Material compatibility: **P3-ultrasil 73** is, under the application conditions described below, compatible with

- **Metals** austenitic CrNi steels (quality at least DIN 1.4301 = AISE 304)

- **Membrane materials** — Polysulphone, cellulose, cellulose acetate, polypropylene, aluminium oxide, zirkonium dioxide, polyacrylonitrile, nylon, polyvinyl difluoride and polyamide membranes

Application

P3-ultrasil 73 is an acid, surfactant-based, liquid cleaner for membrane filtration plants. With this unique combination, **P3-ultrasil 73** has excellent properties for the removal of fat and mineral oil as well as inorganic soil.

Field of application

P3-ultrasil 73 is suitable for cleaning micro-, ultra- and nanofiltration plants as well as reverse osmosis plants in the

- Dairy Industry
- Beverage Industry

Mode of application

Following a suitable pre-rinse with water, concentrations of 0.5 to 1.5 % up to a temperature of 85 °C are recommended.

After use on polyamide composite membranes, it should be cleaned with a low alkaline product like P3-ultrasil 10, to re-establish the complete capacity.

Exceptionally, higher concentrations and temperatures are permitted. After cleaning, all treated surfaces should be rinsed residue-free with water.
As additional control, the measurement of the surface tension in the rinsing water is recommended.

Generally, the manufacturers' limitations, especially regarding pH and temperature stability of membranes and modules should be adhered to.

Specific cleaning recommendations can only be given after intensive technical consultation.

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

- **Titration**

Receiving flask: 50 ml application solution
Titration solution: 1.0 NaOH
Indicator: Phenolphthalein
Titration factor: 0.74
Volume added in ml x 0.74 = % **P3-ultrasil 73**

- **Conductivity**

Specific conductivity of **P3-ultrasil 73**

Concentration control

The dosage of **P3-ultrasil 73** can be performed automatically conductivity-controlled - if desired also volume- or time-proportional (e. g. by means of **P3-Elados EMP**-dosage pumps and inductive conductivity measuring devices **P3-LMI 01** or **P3-LMIT 08**).

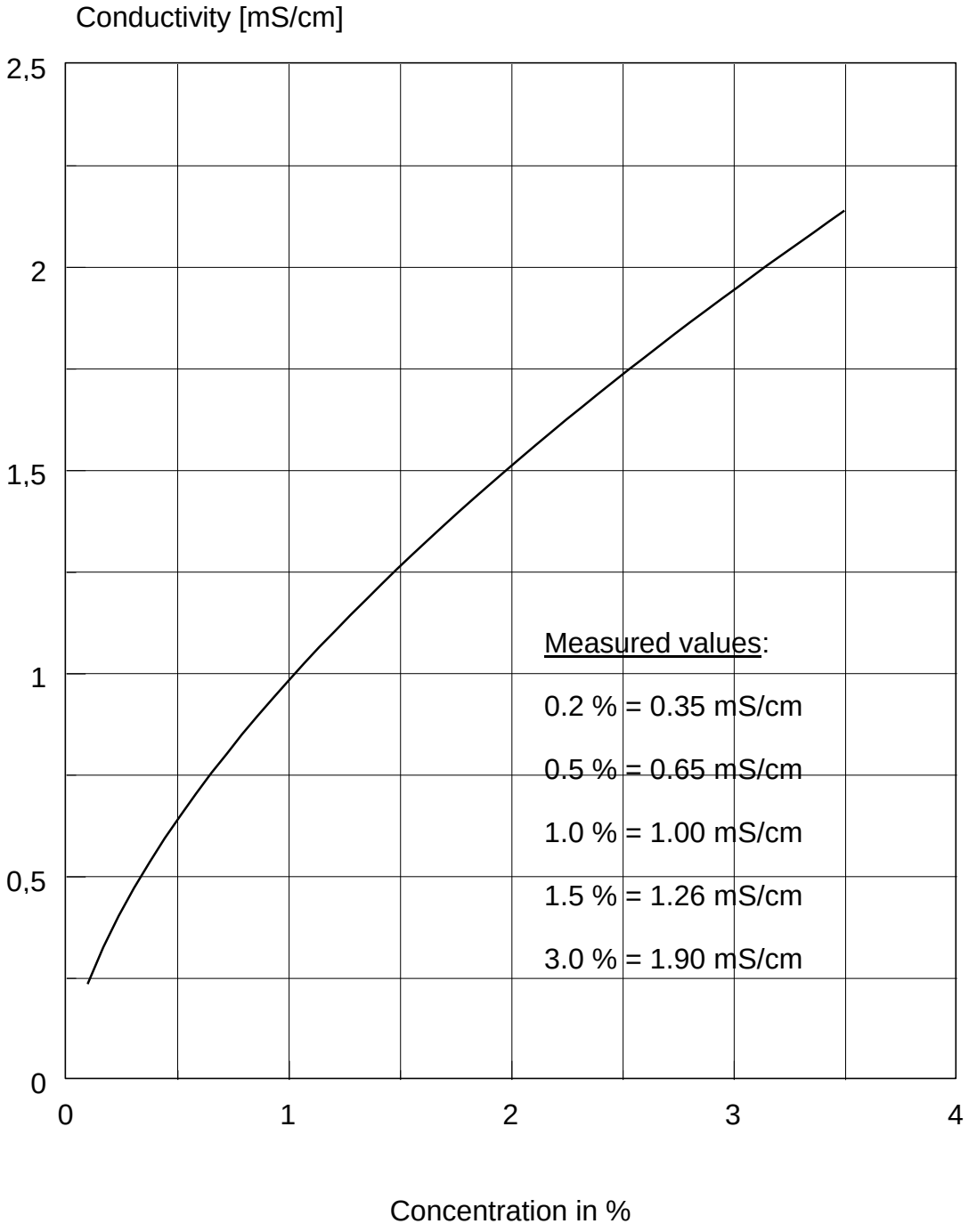
Our P3-System brochures are available on request.

Safety

The relevant hazards identifications of **P3-ultrasil 73** are given in the EC Safety Data Sheet. If any questions arise in this context please contact your Ecolab representative.

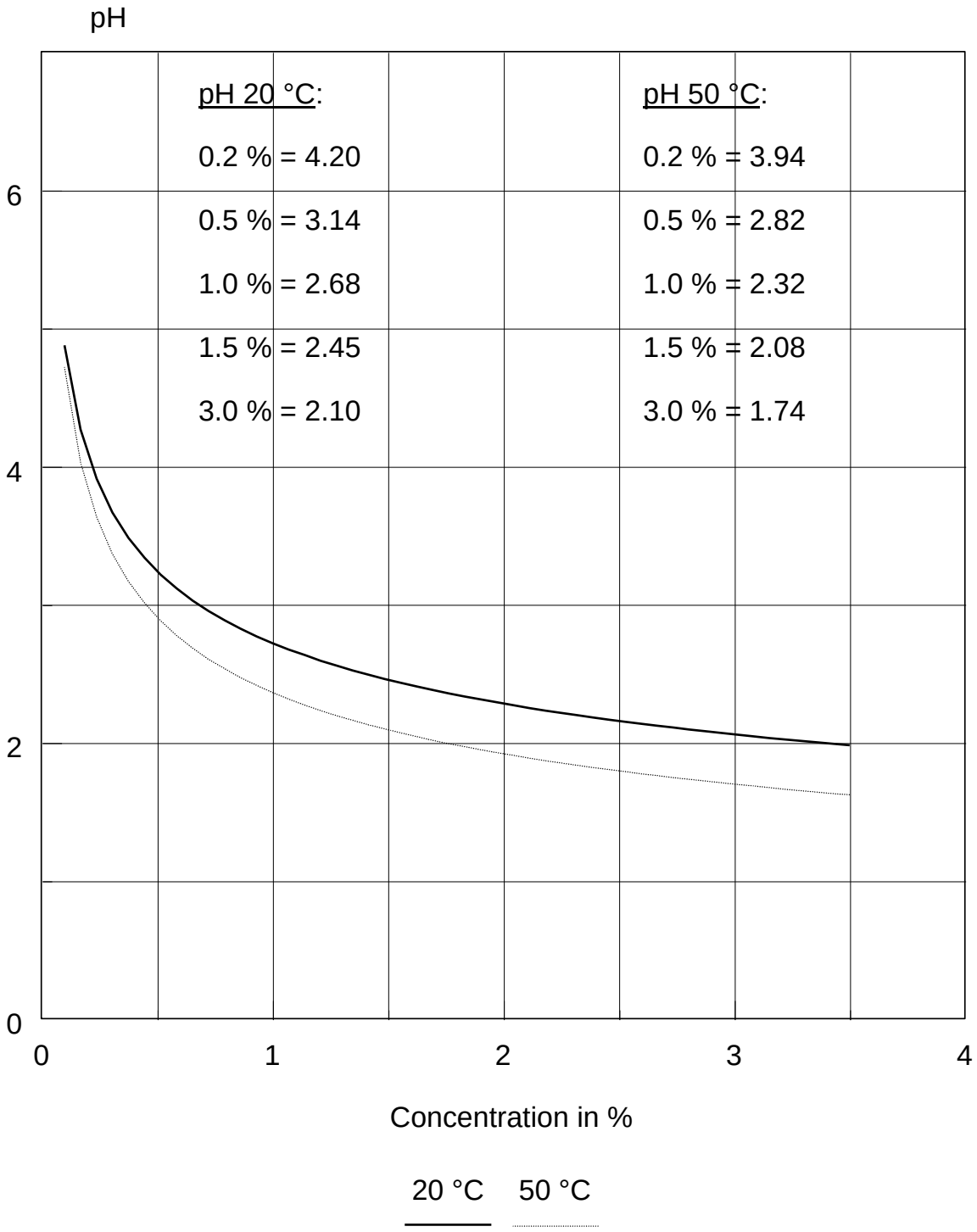
P3-ultrasil 73

Specific conductivity (20 °C, 0 °d)
Temperature coefficient: α: 1.48 % /



P3-ultrasil 73

pH-values (16 °d)



General recommendations for a successful cleaning of membrane filtration equipment

Crossflow-microfiltration

During the first 1 - 3 minutes (depending on the plant size) of the cleaning process the plant should be set to the highest possible feed flow and the lowest possible filtration rate.

Afterwards the filtration capacity should be increased.

Whenever the membranes permit the highly effective back flushing from the permeate side, this procedure should be applied right at the beginning of the cleaning process.

During the disinfection of the filtration plant, the filtration capacity should be set to an average value.

Ultrafiltration

Ultrafiltration plants should be cleaned with applying a high feed flow and a low filtration capacity. Nevertheless, closing of the permeate side as standard procedure should be omitted. Especially when cleaning plants with a large dead volume on the permeate side the permeate volume should be drained before cleaning starts, or the permeate side should be cleaned using an individual cleaning circuit with a small, separate circulation pump.

Indication!

The pressure on the permeate side should never exceed the pressure on the concentrate side!

As suggested for crossflow-microfiltration, during the disinfection process an average filtration capacity should be established.

Nanofiltration, Reverse Osmosis

For cleaning nanofiltration and reverse osmosis plants, the highest feed flow and the lowest possible pressure and filtration rate should be chosen. Plants with a large dead volume on the permeate side should be cleaned as described above.

During disinfection, the pressure should be adjusted to obtain about half the nominal flux capacity of the membranes.

For recommendations of cleaning and sanitising agents, suitable for the type of membranes and filtration process please consult our technical P3-ultrasil data sheets.

This leaflet only describes general standard procedures. Regarding a specific plant inconsistent recommendations may be found. In case of any contradiction the plant and membrane manufacturers directions must be strictly followed.

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