

# Ferisol

## Description:

Liquid additive and cleaning agent for alkaline cleaning solutions in the brewing and beverage

## Product strengths:

- strong cleaning effect
- surfactant-free
- good removal of mineral residues, rust and salt rings
- compatible with glass and REF-PET-bottles

## Properties

### Concentrate

<b>Appearance:</b>	clear, dark brown liquid *
<b>Storage stability:</b>	0 - 40 °C
<b>Solubility:</b>	at 20 °C miscible with water in any proportion
<b>Density:</b>	1.24 - 1.28 g/cm <sup>3</sup> (20 °C) *
<b>P content:</b>	0.4 %
<b>N content:</b>	1.8 %
<b>COD:</b>	320 - 350 mg O <sub>2</sub> /g
<b>Flash point:</b>	not applicable

### Application solution

<b>pH:</b>	10.2 – 11.2 * (1 %, 20 °C, deionized water)
<b>Foam characteristics:</b>	non foaming, surfactant-free

\* Parameters subject to incoming goods control

### Material compatibility

**Ferisol** is, under the application conditions described below, compatible with all kinds of alkali-resistant surfaces.

# Application

Containing specific complexing agents, **Ferisol** is especially suitable for the surface removal of rust, residues from calcium and magnesium compounds, beer- and winestone, protein, tannin, hop, strong sticking moulds and other organic and inorganic residues in caustic alkaline solutions.

For cleaning, **Ferisol** is used in combination with sodium hydroxide or caustic soda solution. With the right preparation, **Ferisol** prevents water hardness precipitations. Existing scale will be removed. **Ferisol** is especially suitable as additive for the alkaline cleaning of bottles contaminated with mineral residues, rust-rings and stronger moulds.

For the cleaning of material from brass or copper, we recommend using the fancy metal inhibiting Stabicip RN.

**Ferisol** is also suitable for cleaning of KEGs. In this case the product is used in combination with caustic soda. For this application it is also possible to use **Ferisol** without additional dosage of caustic soda

**Ferisol** and caustic soda solution have to be added to the caustic baths separately, as the concentrated solutions are not intended to be intermixed. **Ferisol** can be added undiluted directly from the original container or from a storage vessel made from plastic or steel.

To avoid a precipitation of the water hardness constituents during the preparation of the **Ferisol** solution, first add the required **Ferisol** and in a second step the caustic soda solution.

- **Bottling hall**

## **Bottle washing machine, caustic baths**

Concentration <b>Ferisol</b> :	0.2 - 1.0 %
Concentration NaOH:	1.0 - 3.0 %
Temperature:	50 – 85°C

Due to the different performance of rust- and lime residues in the bottles to be treated, an exact determination of the required **Ferisol** concentration is not possible. The required concentration is depending on water hardness, retention time and temperature. Based on our experience, the following addition is required for the cleaning of rust ring and medicinal water bottles:

For removing of rust rings or stronger Iron residues it is recommended to increase the NaOH concentration up to 2.5-3.5% and use higher temperatures (if suitable for the bottles).

- **KEG-lines**

### **Cleaning of KEGs**

Concentration **Ferisol**: 0.2 - 1.0 %  
 Concentration NaOH: 1.0 - 3.0 %  
 Temperature: 60-85°C

Depending on soil-level it is possible to use **Ferisol** with addition of caustic soda.

All cleaning procedures for the removal of rust-, lime- and scale residues:

Besides the required **Ferisol** quantity for the complexation of the water hardness of the plant water (0.035 % **Ferisol**/°d), an excess of 10 – 50 % for the removal of scale is required. Concentrations of 0.3 – 0.5 % are normally sufficient.

### **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 of the caustic solution**

- **Titration** See determination method
- **Conductivity** See determination method

### **Concentration determination of Ferisol**

- **EDTA**

Receiving flask:	50 ml
Titration solution:	2 n acetic acid 0.01 m copper sulphate
Indicator:	phenolphthalein, pyridylazonaphthol (PAN)
Titration factor:	0.044

Volume added copper sulphate x 0.044 = (by wt.) % **Ferisol**

## Concentration control

We recommend the use of Elados EMP / EcoPro / EcoAdd diaphragm pumps for metering and for control and phase separation the use of LIMIT 09 inductive conductivity meters.

Please visit [www.ecolab-engineering.com](http://www.ecolab-engineering.com) for more information.

## Safety

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

The statements, information and data presented herein are believed to be accurate and reliable. The information describes the characteristic features of **Ferisol** 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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