

DIRUNEUTRA LIQ / P Derouging system at neutral pH value Technical datasheet

Rapidly and effectively removes rouge deposits from stainless steel water systems and process vessels.

APPLICATION

The DIRUNEUTRA system rapidly and effectively removes rouge from the surfaces of AISI 316L, AISI 316 TI and AISI 904L stainless steel.

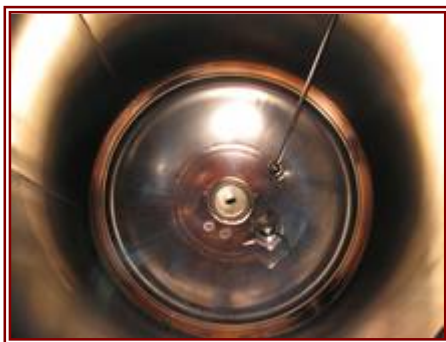
The new process works in neutral pH conditions and therefore meets the ever more stringent requirements for plant maintenance and environmental protection.

The DIRUNEUTRA system is a controlled process and is therefore suitable for derouging production equipment in the following manufacturing sectors:

- Pharmaceuticals
- Biotechnology
- Cosmetics
- Purified water production for medical uses

The DIRUNEUTRA system is especially suited to the derouging of

- Water for Injection (WFI) systems (loops and storage tanks)
- Clean steam systems
- Process vessels (e.g. in vaccine production)
- Autoclaves



before treatment



after treatment

PROPERTIES

As the natural passivated layer on stainless steel surfaces ages it can form a rust-red deposit known as rouging. Rouging is generally considered to be unacceptable because there is the risk that particles of the deposit will detach and enter circulation.

Rouge deposits also make it difficult to control the process parameters of systems where a specified surface state must be maintained.

Your solution for removing rouge: the DIRUNEUTRA system (patent applied for) is an innovative, neutral pH derouging method which achieves excellent and rapid results.

The system consists of DIRUNEUTRA LIQ liquid and DIRUNEUTRA P powder. These two components are mixed shortly before use.

The advantages of using the DIRUNEUTRA system are:



| Advantages | Benefits to you |
|----------------------------------|--|
| Short process times | Shorter downtimes, longer duty cycles for production equipment |
| Neutral pH process | Solutions and rinsing water do not require neutralising. Waste disposal is simple and cost-effective. |
| Safer to use | High concentrations of aggressive acids are not required. |
| Simple in-process control | Monitoring of derouging solution effectiveness does not require expensive analytical equipment. |
| Rapid results | Short derouging cycle times. Improved efficiency. |
| Tried-and-tested process | Safer to use thanks to our process descriptions. This permits easy documenting of derouging operations. |
| Highly effective | The lower concentrations required mean that it is more cost-effective to use. |
| Excellent material compatibility | Longer life cycles for process plant and equipment. |
| Does not contain halogenides | No chemical attack of surfaces. |
| Analytical methods | Allows a residue-free process. A well established analytical procedure enables rapid transfer of the derouging process. |

Passivation is recommended after derouging to build a protective layer on derouged surfaces. We recommend passivation with DIRUPASS AP. Contact us for more information about passivation with DIRUPASS AP.

INGREDIENTS

Active substances:

DIRUNEUTRA LIQ: complexing agent

DIRUNEUTRA P: reducing agent

DOSAGE

| | |
|---|---|
| <u>Process parameters for derouging</u> | |
| Temperature: | > 70 °C |
| Atmosphere: | anaerobic (residual oxygen < 0.5 %) |
| Duration: | 0.5 h to 4 h depending on type and characteristics of deposit |
| DIRUNEUTRA LIQ | 2.0 % (V/V) |
| DIRUNEUTRA P | 0.6 % (W/V) |
| DIRUCLEAN NS | 0.3 % to 0.5 % (V/V) |

INFORMATION ON USE

The DIRUNEUTRA system is ideal for flooding processes or for derouging operations on transfer pipes.

Contact us for detailed work instructions about the following:



- Flooding processes (preparation tanks, piping, etc.)
- Spraying in closed systems (CIP spray process, automatic cleaning systems)
- Testing the activity of derouging solutions
- Monitoring the effectiveness of the derouging process
- Testing for traces of residues from the derouging

Rinsing process

The addition of DIRUCLEAN NS at the end of the derouging process improves rinsing characteristics.

Neutralization

Neutralization is not necessary. Process and rinsing water can be disposed of without the need for further treatment. Dispose of process and rinsing water in accordance with your local waste water regulations.

Residue analysis/cleaning validation

Analysis methods for testing for the presence of process chemical residues are available.

MATERIAL COMPTIBILITY

Suitable for: Stainless steel 1.4301, 1.4401, 1.4404, 1.4435, 1.4571, 1.4539
PP, PVC, PE, PTFE, PVDF, EPDM, silicone, PEEK, glass

For materials not mentioned please make your own specific compatibility tests or consult Ateco Services AG.

Chemical/physical data

| | | |
|----------------|------------|---------------------------------------|
| DIRUNEUTRA LIQ | pH value | 4.5 (1 %) |
| | density | 1.08 |
| | appearance | clear, transparent to light yellowish |
| DIRUNEUTRA P | pH value | 8.0 (1 %) |
| | appearance | white powder |

AVAILABILITY

The DIRUNEUTRA system is available as a practical set.

| 1 set for 250 l solution consisting of: | | 1 set for 1'000 l solution consisting of: | |
|---|--------|---|--------|
| DIRUNEUTRA LIQ | 5.0 l | DIRUNEUTRA LIQ | 20.0 l |
| DIRUNEUTRA P | 1.5 kg | DIRUNEUTRA P | 6.0 kg |
| DIRUCLEAN NS | 1.0 kg | DIRUCLEAN NS | 6.0 kg |

Please ask your local representative about current container sizes. Dosing aids such as pumps, dispenser, measuring jugs, etc. are available. Please ask for corresponding documents.

Containers, screw caps and labels are made of recyclable polyethylene.



ADDITIONAL INFORMATION

For information concerning safety at work, storage and waste disposal/effluent, please consult the corresponding safety data sheet.

Take advantage of our vast know-how! Please, contact us for further information regarding your specific application.

DIRUNEUTRA for the highest standards of quality

DIRUNEUTRA products have been developed specially for validated cleaning.

Our products and services allow individual, optimally adapted and efficient cleaning processes to be used. You can obtain further information on this directly from Ateco Services AG.

PROCESS CONTROL – ACTIVITY TEST

Check the activity of the derouging solution at regular intervals. The quick and easy way to do this is by adding an ACDS tablet to 200 ml of solution.

Simply order:

| Item no. | Name |
|----------|---|
| ACDS-015 | ACDS Activity Check for Derouging System 1 box with 15 individually packed tablets |

Detailed instructions on how to use ACDS can be obtained from Ateco Services AG.

All information provided is based on our current knowledge and it does not constitute a legally binding assurance of specific product properties.

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