

Laboratory Cleaning Agents For Effective Glassware Cleaning in Critical Applications



System4Lab

Cleaning Agents for the Perfect Reprocessing of Laboratory Glassware & Equipment



Miele Professional has designed a comprehensive and systematic approach to the thorough and effective reprocessing of laboratory glassware and accessories. Alongside laboratory glassware washers and tailored programs, this system also comprises cleaning agents - a critical factor in effective cleaning. Geared meticulously to the requirements of individual program phases, specially formulated detergents and neutralizing agents guarantee thorough, fast and gentle process cycles.

Miele Professional cleaning agents are suited for a multitude of applications, ensuring the trace-free removal of a wide range of soils in lab washers. At the same time, the cleaning process is very gentle on loads. That is why Miele Professional is recommended by leading manufacturers of laboratory glassware.



Effective Cleaning - A Balance of Many Factors

Effective cleaning in critical applications requires the proper balance of many factors. Process chemicals must be selected with many things in mind including the soils to be removed, the material being cleaned, the cleaning method itself and the water quality. Our ProCare Lab and neodisher® cleaning agents ensure critical cleaning results when properly used.



Water Quality

The quality of tap water can affect cleaning results. Hard water contains constituents that may leave mineral deposits or spotting on glassware. Consult your local water authority regarding water quality in your area. If only hard water is available, a water softening system should be utilized to improve cleaning results. High quality laboratory glassware washers include a built-in adjustable water softening system to eliminate this problem. In addition, most lab washers have the ability to rinse with deionized (DI) water for the final rinse(s).

The Cleaning Agent

Even the best detergent cannot provide critical cleaning results if the proper cleaning method is not employed. The most stringent and consistent results can be achieved in an automated washing system that provides hot wash temperatures (as high as 93°C), vigorous washing action (high circulation rate), and multiple rinsing capability with DI water. A typical wash protocol for glassware cleaning which has proven effective for analytically clean results includes:

1. Pre-washing with hot or cold tap water dependent upon the soil
2. Washing with tap water and detergent at high temperature (85°C)
3. Rinsing with tap water and neutralizing agent to remove cleaning agent residues.
4. Rinsing with DI water to remove tap water residues
5. Final rinse with heated DI water (70°C) to ensure residue free results

Defoaming and Emulsifying

In some cases, the residue being removed can cause foaming in a glassware washer. This can be addressed by using a defoaming agent such as neodisher® S. An emulsifying agent such as neodisher® EM can improve the removal of oily residues. These products are normally introduced during the pre-wash and main wash-cycles.

Laboratory Cleaning Agents - Overview

VWR Cat. No.	Type	Size	Properties	Ingredients	PH Range
Main Wash					
ProCare Lab 11 MA (75832-006)	Powder	10 kg	Mildly alkaline Foam-retardant action Free from: Oxidative agents	Phosphates Silicates Tensides	11.7-11.9 ¹
ProCare Lab 11 AP (75832-004)	Powder	10 kg	Alkaline Oxidative Free from: Phosphates	Oxygen bleach, Tensides	11.5-11.7 ¹
neodisher® A8 (62111-836)	Powder	10 kg	Alkaline Free from surfactants	Phosphates, Chlorine based bleach	12.0 - 12.6 ²
neodisher® F (62111-683)	Powder	4 x 3 kg	Highly alkaline Free of phosphates and surfactants	Polycarboxylates	12.6 - 13.0 ²
neodisher® GK (62111-838)	Powder	10 kg	Mildly alkaline Free of surfactants	Phosphates, Chlorine based bleach, Silicates, Sulfates	10.8 - 11.9 ²
neodisher® LA (62111-844)	Powder	4 x 3 kg	Highly alkaline	Sodium hydroxide, Polycarboxylates, Non-ionic surfactants, Phosphates Silicates, Carbonates	12.0 - 12.8 ²
ProCare Lab 10 MA (75832-220, 75832-218)	Liquid	5 l, 10 l	Alkaline Free from: Tensides and oxidative agents	Alkali hydroxide, Phosphates Silicates	11.6-11.8 ³
ProCare Lab 10 AP (75832-212, 75832-210)	Liquid	5 l, 10 l	Alkaline, Free from: Tensides, phosphates and oxidative agents	Alkali hydroxide, Polycarboxylates	12.5-12.7 ³
ProCare Lab 10 AT (75832-216, 75832-214)	Liquid	5 l, 10 l	Alkaline, contains tensides Free from: Phosphates, silicates and oxidative agents	Alkali hydroxide, Polycarboxylates, Tensides	12.2-12.5 ³
neodisher® MediClean Forte (available upon request)	Liquid	5 l	Alkaline	Alkali, Enzymes, Surfactants	10.4 - 10.8 ⁴
neodisher® FT (62111-852)	Liquid	9 l	Alkaline Free from surfactants	Chlorine based bleach Phosphates	11.8 - 12.2 ⁵
Neutralization					
ProCare Lab 30 C (75831-998, 75832-008)	Liquid	5 l, 10 l	Acidic (based on citric acid) Free from: Tensides and phosphates	Citric acid	2.9 - 2.5 ⁶
ProCare Lab 30 P (75832-002, 75832-000)	Liquid	5 l, 12 kg	Acidic (based on phosphoric acid) Free from: Tensides	Phosphoric acid	2.2-1.9 ⁷
Reactivation					
ProCare Universal 61 (89497-268)	Coarse Salt	6 kg	Coarse special salt for reactivation of built-in water softener		
Other					
neodisher® EM (available upon request)	Liquid	5 l	Additive for emulsification or dispersion as well as foam suppression	Emulsifiers	ph-neutral
neodisher® S (available upon request)	Liquid	1 l	Component with anti-foaming action	Non-ionic surfactants, Preservation agents (benzyl hemiformal)	ph-neutral

¹ pH range in fully demineralized water, 20°C, 2-4 g/l ² pH range in fully demineralized water, 20°C, 2-5 g/l ³ pH range in fully demineralized water, 20°C, 2-4 ml/l ⁴ pH range in fully demineralized water, 20°C, 2-10 ml/l

⁵ pH range in fully demineralized water, 20°C, 3-4 ml/l ⁶ pH range in fully demineralized water, 20°C, 1-4 ml/l ⁷ pH range in fully demineralized water, 20°C, 1-3 ml/l

Main Application	Soil Type	Material Compatibility
Medical, biological and chemical laboratories	Blood, protein, food residue	Suitable for: Stainless-steel, laboratory glassware, ceramics, plastics* (PE, PP, PVDF, PTFE) Conditionally suitable for: Non-anodized aluminum and non-ferrous metals (preliminary checks required) Not suitable for: Anodized aluminum
Analytical testing laboratories, water laboratories, serological institutes, laboratories in phosphate industry	Inorganic and organic soils	Suitable for: Stainless-steel, laboratory glassware, ceramics, plastics* (PE, PP, PVDF, PTFE) Not suitable for: Light alloys and non-ferrous metals, aluminum, anodized aluminum
General purpose cleaner for medical, biological and chemical laboratories as well as laboratories in the food industry.	General chemical residues	Suitable for: Laboratory glassware, ceramics, stainless steel Not suitable for: Aluminum, anodized aluminum, light metal alloys
For cleaning items with high levels of visible contamination or debris. Laboratories of the cosmetics industry, the mineral oil industry and in laboratories of the food industry and industrial laboratories.	Grease, oil, paraffin, resin, organic dyes and felt pen residues. Used as an alternative to neodisher® LaboClean A8 when phosphates cannot be used.	Suitable for: Stainless steel, precious metals, laboratory glassware. Not suitable for: Non-ferrous and light metals, aluminum, anodized aluminum
Microbiological, virological and bacteriological laboratories.	Residues of nutrient media, cell cultures and tissues and organic dye and pigment impurities.	Suitable for: Laboratory glassware, ceramics, quartz and plastics
Food processing industry, the cosmetics, pharmaceutical and mineral oil industries, and also in other industrial laboratories. At temperatures over 30 °C neodisher® LaboClean LA exhibits a de-foaming action. Also good emulsifying properties.	Oils, fats, resins, paraffins and organic dyes.	Suitable for: Stainless steel, precious metals, laboratory glassware. Not suitable for: Aluminum, anodized aluminum, light metal alloys
Medical, biological and chemical laboratories	Blood, protein, Nutrient residues	Suitable for: Stainless-steel, laboratory glassware, ceramics, plastics* (PE, PP, PVDF, PTFE) Conditionally suitable for: Non-anodized aluminum and non-ferrous metals (preliminary checks required) Not suitable for: Anodized aluminum
Analytical testing, medical, biological, microbiological and chemical laboratories, water laboratories, phosphate industry, laboratories in food processing, cosmetics, pharmaceutical, mineral oil and other industries	Stubborn or dried-on residues	Suitable for: Stainless-steel, laboratory glassware, ceramics, plastics* (PE, PP, PVDF, PTFE) Not suitable for: Light alloys and non-ferrous metals, aluminum, anodized aluminum
Laboratories in food, cosmetics, pharmaceutical, mineral oils and other industries	Stubborn residues such as oils, resins, greases, paraffins, organic dyes	Suitable for: Stainless-steel, laboratory glassware, ceramics, plastics* (PE, PP, PVDF, PTFE) Not suitable for: Light alloys and non-ferrous metals, aluminum, anodized aluminum
Cleaning of surgical instruments	Blood and protein residues	Suitable for: Stainless-steel, instrument steel, optics, conventional plastics and material of anesthesia equipment* Not suitable for: Anodized aluminum must be tested for compatibility first
Microbiology, virology, fish tanks, food industry and paint industry as well as bottles and equipment made of glass in pharmacies.	Nutrient mediums, blood, proteins, aquarium residues and residues of tissue cultures	Suitable for: Laboratory glassware, ceramics, quartz, plastics and fish tanks Not suitable for: Non-ferrous and light metals
Neutralization and removal of main wash residues	Residues soluble in acids	Suitable for: Laboratory glassware
Neutralization and removal of main wash residues	Removes lime scale and other soils soluble in acids	Suitable for: Stainless-steel items
Prevents scaling and protects loads		
neodisher® EM, in combination with alkaline and acid cleaners, emulsifies or disperses undissolved impurities; cosmetics industry, research, pharmaceutical industry and chemical industry	Fats, oils, paraffins and solid matter in aqueous solutions	
Prevents the development of foam during the removal of foam generating residues such as surfactants, proteins, or soaps; food industry, the cosmetics industry, and industrial laboratories		

* Plastics suitable for alkaline machine-based wash according to manufacturer.



System4Lab: A Guaranteed Solution

System4Lab is Miele Professional's complete solution for reprocessing analytically clean glassware. As part of the System4Lab program, Miele Professional provides System4Lab customers a five year limited warranty*. Here's what makes our approach special:

Glassware Washers Built to Last

Miele manufactures the highest quality and most advanced glassware reprocessing washers in the industry. Factory rated to last at least 15,000 operating hours, Miele washers are in it for the long run.



Unmatched Application Expertise

Whether if it's a tailored wash program, inhibitor residue test results, a customized test in our own application laboratory or any other cleaning challenge - our team of application experts is here to help and just a phone call away.

*The limited warranty includes Miele's standard one year manufacturer's warranty and an extended limited warranty for the remaining four years covering wash chamber construction, control electronics and pumps when neodisher® and/or Miele ProCare lab detergents are used during the warranty period.

Cleaning Agents for Any Application

Our wide range of powder and liquid cleaning agents is suitable for various applications and can conquer even the most stubborn soil types. Furthermore the Miele cleaning agent product line was developed to act as a perfect match for our glassware washers.



Pro Tip: a canister key simplifies the opening of firmly tightened safety caps!

Dedicated Service Network

Miele's nationwide service network is comparable to none. We offer Free Call Center Support for the lifetime of the product and replacement parts are stocked in the USA.





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