



**bio-chem**<sup>®</sup>  
Surface Technology



Dear business partner

Isn't it great to have a reliable and competent partner for all questions in the field of surface technology?

On the 64 pages of our new full range catalogue you can find our extensive know-how in the field of surface technology: VOC-free water-based cleaners, low-temperature cleaners, protective care products for metals, state-of-the-art parts washer systems, and useful accessories.

For easy handling we have structured our full range of bio-chem products in the following product segments:

→ Cleaning

→ Cleaning systems

→ Protecting

→ Lubricating

→ Welding

→ Air Force

→ Seasonal products



What is also new is our name:

Bio-Circle Surface Technology GmbH is our company name now. This new name and the modified company logo underline our technological advancement in the market.



We're looking forward to the new challenge  
– please join us.

**Ulrich Berens**  
Chairman of the supervisory board



## Think holistically.

## Act sustainably.

Sustainability in our bio-chem products and technologies is our way of fulfilling the needs of the people of today, and of using resources in such a way that future generations will also be able profit from them.

In this context, from 2002 to 2004 we already took part in the be.st project "Co-operative sustainability-oriented benchmarking" by future e.V., together with four other SMEs. It was scientifically accompanied by the Wuppertal Institute for Climate, Environment and Energy. This innovative project established a connection between the demanding requirements of sustainability and its application in SMEs. With the help of this project it was possible to develop the corporate processes at Bio-Circle Surface Technology GmbH following the principles of sustainability, and to compare them with those of other enterprises.



**"For us, sustainability means assuming responsibility, for our entrepreneurial and social actions as well as for all environmental concerns."**

Ulrich Berens, Chairman of the supervisory board

## Environmental protection and quality

Fully aware that we are responsible for our environment, we already implemented a fully integrated environmental management system in 1996, which was certified by LRQA in accordance with the guidelines of the globally applicable norm DIN ISO 14001. As an ecologically oriented enterprise we not only attach the greatest value to optimum product performance but also to maximum environmental compatibility. The certification attests to the fact that we deal with resources responsibly: with raw materials used in production, with energy and water, and also with waste.

**"In our opinion, voluntary participation in this environmental management system is the right way to continuous improvement in environmental protection."** Birgit Große, Managing Director Germany

Please refer to our websites [www.bio-circle.de](http://www.bio-circle.de) and [www.bio-chem.de](http://www.bio-chem.de) for documentations, certificates, application examples and videos. We will be happy to send you the required documents also by post, fax or e-mail.



Nonfood Compounds  
Program Limited (139721)  
(C1)

## The Company

### Cleaning

- |  |   |  |
|--|---|--|
| <p><b>8</b> UNO<br/>UNO P<br/>UNO F<br/>UNO PF</p> <p><b>9</b> UNO S<br/>UNO S F<br/>UNO S PF<br/>UNO S V</p> <p><b>10</b> UNO W</p> <p><b>11</b> FT 100<br/>FT 200</p> <p><b>12</b> Floor Cleaner<br/>Floor Cleaner Strong<br/>Uni-Sorb</p> <p><b>13</b> Power Cleaner 300<br/>Power Cleaner 100<br/>Power Cleaner 200<br/>Power Cleaner DB</p> <p><b>14</b> Disinfectant Cleaner</p> | <p><b>14</b> Limescale Barracuda</p> <p><b>15</b> Phospha-Clean<br/>Stripper Gel<br/>Stripper Liquid</p> <p><b>16</b> SC 100<br/>SC 200<br/>SC 300<br/>SC 400</p> <p><b>17</b> Bio Grease-Ex<br/>Rapid Cleaner<br/>Rapid Cleaner Plus</p> <p><b>18</b> STAR 100<br/>STAR 200<br/>STAR 300</p> <p><b>19</b> ALUSTAR 100<br/>ALUSTAR 200<br/>ALUSTAR 300<br/>Energy STAR</p> <p><b>20</b> Defoamer, with silicone<br/>Defoamer, silicone-free</p> | <p><b>20</b> Corrosion protection for water-based systems</p> <p><b>21</b> Smoke Resin Remover<br/>Smoke Resin Remover foamless<br/>Smoke Resin Remover DB</p> <p><b>22</b> E-NOX Shine<br/>E-NOX Clean<br/>E-NOX Care</p> <p><b>23</b> Die Casting Mould Cleaner<br/>OMNI</p> <p><b>24</b> Multi Clean<br/>Eyeglass Cleaner</p> <p><b>25</b> Hand Cleaning Lotion<br/>Hand Cleaning Paste<br/>Rubbel-Dubbel Damp Cleaning Wipes</p> <p><b>26</b> Coffee Machine Cleaner<br/>New Fresh Air<br/>Clean &amp; Shiny</p> <p><b>27</b> Hair Remover Drain-Free<br/>Urine Attack</p> |
|--|---|--|

### Cleaning systems

- |   |  |   |
|---|--|---|
| <p><b>29</b> Hot-Water Parts Washing Machine</p> <p><b>30</b> Plate Separator</p> <p><b>31</b> Pipe- and Heat Exchanger Cleaning Device</p> | <p><b>32</b> BIO-CIRCLE Maxi<br/>BIO-CIRCLE Compact</p> <p><b>33</b> BIO-CIRCLE Turbo</p> <p><b>34</b> BIO-CIRCLE Mini</p> | <p><b>36</b> BIO-CIRCLE Liquids</p> <p><b>38</b> Ultrasonic Cleaning Devices<br/>Multifrequency devices</p> <p><b>39</b> Surfox</p> |
|---|--|---|

### Protecting

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|--|--|--|
| <p><b>40</b> High-Performance Anti-Rust Oil<br/>High-Performance Anti-Rust Wax</p> | <p><b>41</b> Stainless Steel Spray<br/>Zinc Paste<br/>Zinc Spray</p> | <p><b>41</b> Zinc Paste silver<br/>Zinc Spray silver</p> |
|--|--|--|

### Lubricating

- |  |  |   |
|--|--|---|
| <p><b>43</b> Aqua-Form<br/>Aqua-Form dry</p> | <p><b>43</b> Food Tech Oil</p> <p><b>44</b> Anti-Seize<br/>Metal-free Anti-Seize</p> | <p><b>45</b> High-Performance Cutting Oil<br/>Cutting Coolant transparent<br/>Cutting Coolant milky</p> |
|--|--|---|

### Welding

- |   |  |  |
|---|--|--|
| <p><b>46</b> E-WELD ROB</p> <p><b>47</b> E-WELD 3</p> | <p><b>47</b> E-WELD 4</p> <p><b>48</b> E-WELD<br/>E-WELD 2</p> | <p><b>49</b> E-WELD Gel<br/>E-WELD 5</p> |
|---|--|--|

### Air Force

- |                            |                          |                           |
|----------------------------|--------------------------|---------------------------|
| <p><b>50</b> Air Force</p> | <p><b>51</b> AF-WELD</p> | <p><b>51</b> AF-CLEAN</p> |
|----------------------------|--------------------------|---------------------------|

### Seasonal products

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|--|---|--|
| <p><b>52</b> Windscreen Cleaner -60 °C<br/>Ice-Free -50 °C</p> | <p><b>52</b> Ice-Free -50 °C liquid</p> <p><b>53</b> Algae STOP</p> | <p><b>53</b> Algae STOP Fish<br/>SOFT TECT</p> |
|--|---|--|

### The company

- |   |   |   |
|---|---|---|
| <p><b>54</b> Accessories</p> <p><b>56</b> Occupational safety<br/>and handling hazardous substances</p> | <p><b>58</b> About us</p> <p><b>60</b> BIO-CIRCLE on the road<br/>BIO-CIRCLE service and cleaning</p> | <p><b>61</b> BIO-CIRCLE distinguished</p> <p><b>62</b> Our lab service</p> <p><b>63</b> Our bestsellers</p> |
|---|---|---|

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**Bio-Circle Surface Technology GmbH**  
**Berensweg 200**  
**D-33334 Gütersloh**  
**Telephone: +49 (0)5241 9443-0**  
**Telefax: +49 (0)5241 9443-44**  
**E-mail: [service@bio-circle.de](mailto:service@bio-circle.de)**  
**[www.bio-circle.de](http://www.bio-circle.de)**





## Cleaning:

You can find innovative products for virtually every cleaning- or degreasing requirement on pages 6 to 27. Be it cleaning products for mechanical or manual use, or applications for the industry, in the trade or in the service sector: it is here that you will find the perfect solution to your cleaning requirements.

6-27



## Cleaning systems:

Cleaning machines for the safe and comfortable cleaning and degreasing also of bigger parts, plate separators to extend the lifetime of aqueous process baths as well as the Surfox system for the cleaning of welding seams – all this can be found on pages 28 to 39.

28-39



## Protecting:

From temporary corrosion protection for storage inside a building or long-term corrosion protection for outdoor storage or transport to metallic corrosion protection pastes and sprays. For more information about corrosion protection see pages 40 and 41.

40-41



## Lubricating:

In the part headlined "Lubricating" on pages 42 to 45 you will find mineral oil-free and mineral oil-containing water-miscible cutting coolants and non-water-miscible cooling lubricants, special lubricants for the food- and pharmaceutical industry, and also high performance lubricants.

42-45



## Welding:

Weld spatter sticking to gas nozzles or work piece surfaces is a common problem in welding. On pages 46 to 49 you will find our field-tested products for economic welding – because the bio-chem products dispense with labour-intensive reworking.

46-49



## Air Force:

Finally a breath of fresh air – the environmentally neutral spray system. The new Air Force System replaces spray cans. Refillable cans are automatically filled with an active substance (e.g. welding release agents) and the environmentally neutral blowing agent compressed air. For more information see pages 50 and 51.

50-51



## Seasonal products:

In order to get you through the year safely, we have listed our seasonal products for you on pages 52 and 53. Our field-tested Ice-Free – you can rely on its reliably thawing ice and snow even at extreme minus temperatures. Or our algae products that remove algae effectively and protect from new algae growth.

52-53



## The company:

bio-chem is the brand that stands for innovative chemical-technological products in the field of surface technology. At our company headquarters in Gütersloh we develop and manufacture our products that are distributed by our field staff all over Germany, Austria and Switzerland. To learn more about us see pages 54 to 64.

54-64

# Cleaning

**For any kind of contamination we can offer you the perfect cleaning method.**

Cleaning products are indispensable in all sectors of the industry, in trade, in the leisure time and hobby field, and also in the household. In the metalworking industry cleaning ranges from servicing-, maintenance- or repair works to commercial application fields in automatic cleaning- and degreasing plants. In the trade you have for instance the case of unexpectedly required degreasing of oil-fouled workpieces. In the food industry cleaning is required in order to meet the high quality requirements.



As a rule, cleaning products are divided into water-based cleaners and solvents. Depending on their applications, the aqueous cleaning agents are adjusted to neutral, alkaline or acidic.

There is however some overlapping in the fields of application of the neutral, alkaline and acidic cleaning agents.

## Acidic cleaners:

Cleaners that contain acidic components. They are used to remove rust, moss, algae, limescale, and to dissolve deposits from metallic surfaces.

## Neutral cleaners:

Alkaline- or acid-free cleaning agents that are mainly used where consideration for the human skin or sensitive items to be cleaned is required.

## Alkaline cleaners:

Cleaning agents that contain alkaline components. They are mainly used to remove grease-, oil- and protein residues.

## The right cleaner

pH			
1	<b>Acidic cleaners</b>	Power Cleaner 300 Dissolver US Power Cleaner DB E-NOX Clean Power Cleaner 200 Power Cleaner 100 Disinfectant Cleaner	Battery acid  Gastric acid  Vinegar Cola Coffee Beer, wine Saliva
7	<b>Neutral cleaners</b>	BIO-CIRCLE L ALUSTAR 100 STAR 100 FT 100 E-NOX Shine	Distilled water Seawater
		UNO S  Multi-Clean UNO W Coffee Machine Cleaner	Baking powder
	<b>Alkaline cleaners</b>	ALUSTAR 200 ALUSTAR 300  STAR 200 STAR 300 Smoke Resin Remover  Smoke Resin Remover DB  Hair Remover – Drain-Free	Liquid ammonia  Soapsuds
14			

## How do surfactants work?

Surfactants consist of a hydrophilic (water-friendly) and a hydrophobic (oil-friendly) group. Whereas the hydrophilic part of the surfactant clings to a water particle, the hydrophobic part adheres to an oil- or dirt particle, thus dissolving it from the surface.

**Surfactant**

Hydrophobic

Hydrophilic



## VOC Regulation – Solvent reduction in cleaning processes

VOC stands for Volatile Organic Compounds. VOC are pollutive and may therefore harm human health. The currently effective solvent regulation (Germany: 31. BImSchV [31st Federal Immission Control Regulation], Austria: VOC-Anlagen-Verordnung [VOC Plant Regulation] – VAV) aims at considerably reducing the use of solvents and VOC emissions into the environment, thereby protecting human health. This solvent regulation concerns e.g. activities such as surface cleaning, varnishing and coating, and surface cleaning plants with a solvent consumption of more than one metric ton per year. These plants have to be operated at state-of-the-art level (closed plant factory system) and have to observe diffuse and collected emission limits. These limits do not apply to cleaning agents with a solvent content of under 20%. For your information we have marked the bio-chem cleaning agents for surface cleaning with a solvent content of under 20% in this catalogue as VOC-reduced, and those without solvents as VOC-free. In plenty of applications solvents can be replaced completely by aqueous bio-chem products. For many volatile solvents such as acetone, bio-chem FT 200 and bio-chem Special Cleaners are an alternative for you to meet the requirements of the reduction scheme.



## VOC reduction – Examples from real life



A pump manufacturer had been cleaning the pump parts with cellulose thinner before caulking. The safety officer was looking for alternatives. The condition: “Equivalent or better cleaning performance because the caulking has to be high-strength.” After checking with the aid of test inks, bio-chem FT 200 provided the best cleaning result; at these workplaces the share of solvents could be reduced by 85%.

A coach manufacturer used solvents for cleaning before varnishing. Our alternative suggestion for this case of application was bio-chem UNO S PF (10% solution). After various successful lab tests (cross-cut test, residual pollution, glue [cohesion]) the bio-chem product was cleared for use.

## Cleaning in the foodstuffs industry

In Germany, cleaning in the foodstuffs industry is subject to the LFGB [Foodstuffs, Consumer Goods and Feedstuff Law]. According to Article 2 LFGB, solvents are consumer goods. It is prohibited to put consumer goods in circulation that contain substances that may pass over to foodstuffs or their surfaces. The aqueous bio-chem cleaners are completely miscible with water, and because of their residue-free rinsability they are suitable for applications in the foodstuffs industry according to Article 31 LFGB.





# UNO *Bio General Purpose Cleaner*



Phosphate- and VOC-free **cleaner and degreaser** (highly concentrated, dilutable to 1:40) for removing oil-, grease- and protein residues (flyspeck, blood etc.) from surfaces made of metal, wood, plastic, ceramics and many more.

The cleaner works on the basis of detergent substances (surfactants) that by reducing the surface tension dissolve the residues from the surfaces to be cleaned. As no stable emulsions are formed (demulsifying), greases and oils go to the surface of the rinsing solution where they can be removed. The rinsing solution remains powerful and active for a long time. Heating to 90°C max can increase cleaning performance many times over.

➔ Not subject to the VOC regulation

➔ Compatible with oil separators,  
tested in accordance with ÖNORM B5105

➔ Surfactants are biodegradable in accordance with EU directives

➔ Not subject to mandatory labelling in accordance  
with the EU Directive



Nonfood Compounds  
Program Listed (141943)  
(A1)

## UNO

- A50001** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01001** 10 L jerrycan
- A03001** 30 L jerrycan
- A20001** 200 L drum
- A10001** 1000 L IBC

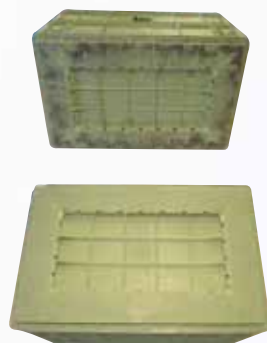
**Please note:**  
Do not use  
the concentrated cleaner  
on aluminium and  
zinc coatings!!

**Fields of use** • Manually and mechanically (e.g. in pressure washers and ultra-sound cleaning devices)

• Universally for the cleaning of industrial and mechanical facilities in the entire industry, especially in the metalworking industry, and in the range of home and hobby



**For corrosion-sensitive parts.**



**For mechanical application and  
where foam would interfere.**



**For mechanical application and  
corrosion-sensitive parts.**

## UNO P Bio General Purpose Cleaner + corrosion protection

- A50033** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01033** 10 L jerrycan
- A03033** 30 L jerrycan
- A20033** 200 L drum

## UNO F Bio General Purpose Cleaner Foamless

- A50031** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01031** 10 L jerrycan
- A03031** 30 L jerrycan
- A20031** 200 L drum
- A10031** 1000 L IBC

## UNO PF Bio General Purpose Cleaner Foamless + corrosion protection

- A50030** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01030** 10 L jerrycan
- A03030** 30 L jerrycan
- A12030** 120 L drum
- A20030** 200 L drum
- A10030** 1000 L IBC



# UNO S Bio General Purpose Cleaner „S“

Phosphate-free water-based **intensive cleaner** (highly concentrated, dilutable with water to 1:40) for removing resinous oils and greases, pigment coatings and other residues. Its excellent dissolving performance already achieves optimal cleaning results at ambient temperature.

- ➔ Surfactants are biodegradable in accordance with EU directives
- ➔ Replaces CHC and other solvents
- ➔ Material-friendly yet strong cleaning power
- ➔ Good wetting properties, acts fast and in depth
- ➔ Not subject to mandatory labelling in accordance with the EU Directive



Norford Compounds  
Program Listed (141942)  
(A1)



## UNO S

- A50043** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01043** 10 L jerrycan
- A03043** 30 L jerrycan
- A12043** 120 L drum
- A20043** 200 L drum
- A10043** 1000 L IBC

**Fields of use** • Manual and mechanical cleaning and degreasing in the metalworking industry

- Cleaning of canteen kitchens, especially removing of heavy pollution around the exhaust air units and on ceilings and walls around the cooking area
- Plastics industry – removing of release agent- and plastics residues from tools and moulds
- Printing industry – cleaning of flat screen and rotary printing machines, screens and templates
- Cleaning before varnishing as an alternative to solvents
- Maintenance of engines and gearboxes
- Sawmills – removing of resin, sawdust and dust from chains and conveyor belts

### Please note:

Do not use  
the concentrated cleaner on  
aluminium and zinc coatings!



**For mechanical application and where foam would interfere.**

**For mechanical application and corrosion-sensitive parts.**

**For application on perpendicular and other vertical surfaces.**

## UNO S F Bio General Purpose Cleaner „S“ Foamless

- A50035** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01035** 10 L jerrycan
- A03035** 30 L jerrycan
- A12035** 120 L drum
- A20035** 200 L drum
- A10035** 1000 L IBC

## UNO S PF Bio General Purpose Cleaner „S“ Foamless + corrosion protection

- A50050** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01050** 10 L jerrycan
- A03050** 30 L jerrycan
- A12050** 120 L drum
- A20050** 200 L drum
- A10050** 1000 L IBC

## UNO S V Bio General Purpose Cleaner „S“ Viscous

- A00134** 1000 mL plastic bottle with trigger  
Trading unit: 10 x 1000 mL (1 box)
- A01034** 10 L jerrycan
- A03034** 30 L jerrycan
- A12034** 120 L drum



# UNO W *clean@work*



Aqueous phosphate-free **alkaline cleaner** with selected foam-free surfactants (highly concentrated, can be diluted with water up to 1:40) for the cleaning and degreasing of machines, tools, workshop equipment, vehicles etc. (corrosion inhibitors guarantee temporary corrosion protection). Dissolves vigorously oils, greases, resins, waxes, nicotine, insect speck, food residues, soot, bitumen- and tar spatter etc. from metal, plastics, tiles, wood, rubber etc. (material-conserving and non-abrasive).

- ➔ Biodegradable in accordance with EU directives
- ➔ Non-combustible, can be heated to 90°C max, which accelerates the cleaning process
- ➔ Compatible with oil separators, tested in accordance with ÖNORM B5105
- ➔ Not subject to mandatory labelling in accordance with the EU Directive

## UNO W

- SAP 816 650 (DB AG)
- A00189** 1000 mL plastic bottle with trigger
- Trading unit: 10 x 1000 mL (1 box)
- A01089** 10 L jerrycan
- A03089** 30 L jerrycan
- A20089** 200 L drum
- A10089** 1000 L IBC

**Fields of use** • In addition to manual cleaning it can also be used in floor cleaning devices, pressure washers, spray extraction devices, and hot-water parts washers.

Recommended application concentration	1:40	1:30	1:20	1:10	Concentrated
Aluminium parts	●				
Bitumen spatter				●	
Busses				●	
Car roof lining					●
Chrome		●			
Diesel residues		●			
Floor dewaxing				●	
Floors in general		●			
Flyspeck					●
Fork lift trucks				●	
Gates		●			
Grease					●
Hard floors		●			
Machine tools				●	
Machines		●			
Nicotine		●			
Oil				●	
Oil residues				●	
Oil-polluted engines				●	
Plastic floors				●	
Plastic parts				●	
Repair parts				●	
Soot				●	
Stainless steel degreasing	●	●	●	●	●
Steel degreasing					●
Tar spatter			●		
Tent tarpaulins					●
Tools		●	●	●	
Truck tarpaulins		●			
Trucks		●	●	●	
Workshop equipment		●			
Workshop pits	●				

Floor cleaning machines	3 – 10 %
Hot-water parts washers	3 – 10 %
Pressure washers	3 – 5 %



## FT 100 *Final Touch*

Surfactant-free **fast-drying cleaning agent** for residue-, streak- and stain-free removal of light oil- and dust pollution, fingerprints, felt pen and pencil residues from lacquered surfaces, plastics, glass, mirrors, metals and all high-polished glossy surfaces.

- ➔ VOC content under 20%  
– not subject to the VOC Regulation (31st BImSchV)



Nonfood Compounds  
Program Listed (142389)  
(A1)

- ➔ Not subject to mandatory labelling in accordance with the EU Directive

- ➔ Ready for use – just spray it on and wipe it off



**Fields of use** • Before varnishing, gluing, labelling (e.g. booth building) or prior to other coating processes

- Also removes light melamine resin residues in chipboard manufacturing and processing
- Removes parting compound- and glue residues after attaching overlapping edge bands in wood processing
- Can also be applied to remove stains from carpets, upholstery, textiles etc.
- Can also be used as a residue-free coolant when sawing and drilling aluminium



### FT 100

- A50057** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A00557** 5 L jerry can
- A01057** 10 L jerry can
- A03057** 30 L jerry can
- A20057** 200 L drum

## FT 200 *Final Touch Coating*



Phosphate-free **fast-drying cleaning agent** (dries faster than conventional water-based cleaners) for cleaning and degreasing prior to varnishing with conventional or water-based varnishes and powder coatings. Removes residues caused by processing oils, anti-corrosion oils, light waxes and similar that affect paint adhesion negatively.

- ➔ VOC content under 20% – not subject to the VOC Regulation (31st BImSchV)
- ➔ Not subject to mandatory labelling in accordance with the EU Directive
- ➔ Ready for use – just spray it on and wipe it off
- ➔ Contains corrosion inhibitors that guarantee temporary corrosion protection
- ➔ The surfactants therein comply with the detergents regulation regarding biodegradability

**Fields of use** • Cleaning before varnishing and degreasing prior to welding

- Removal of processing oils and swarf from antifriction bearings prior to varnishing
- Replacement for solvents, cellulose thinners, cold cleaners, etc.



### FT 200

- A50057-98** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01057-98** 10 L jerry can
- A03057-98** 30 L jerry can
- A20057-98** 200 L drum



# Floor Cleaner



High-performance, water-based, low-foaming cleaner for everyday mechanical and manual floor cleaning. Stands out for its fast and thorough dirt removal properties. Its excellent wetting properties release dirt even from small crannies and depressions. Powerfully releases oils, greases, resins, waxes, insect dirt, food debris, and soot. Cleans all water-resistant flooring materials such as tiles, timber, linoleum, PVC, rubber, matt natural stone (e.g. marble, granite) in a material-protecting and non-abrasive manner.

- ➔ Environment-consciously designed; the surfactants contained therein are biodegradable in accordance with EU Directives, phosphate- and chelating-agent-free, contains no AOX compounds
- ➔ Not subject to mandatory labelling in accordance with the EU Directives
- ➔ Highly concentrated, can be diluted up to 1:1000, which saves warehousing costs
- ➔ Incombustible, pleasantly fresh scent

## Floor Cleaner

- **A01015** 10 L jerrycan
- **A03015** 30 L jerrycan
- **A20015** 200 L plastic drum



**Fields of use** • For the cleaning of industrial surfaces, shop floors and workshop floors, production sites and warehouses. Can be used manually and mechanically in pressure washers, floor cleaning machines, etc. By heating to a maximum of 90 °C cleaning performance can be increased many times over.

Optimally suited for the removal of persistent contaminations from shop floors, such as rubber marks, colour pigments, resins and waxes. Can also be applied as a basic cleaner.



## Floor Cleaner STRONG

- **A01096** 10 L jerrycan
- **A03096** 30 L jerrycan
- **A20096** 200 L plastic drum



# Uni-Sorb



Odourless, **dust-free fine granulate**. Absorbs any type of liquid fast and safely. Reduces the number of accidents due to its excellent grip that quickly removes any possible danger of slipping.

- ➔ Effective sorbent
- ➔ Excellent absorbing properties also on porous surfaces
- ➔ Purely mineral

## Uni-Sorb

- **E01010** 10 L pail
- **E03010** 30 L pail
- **E12010** 120 L drum

**Fields of use** • Acts fast and can be applied throughout the entire industrial sector, wherever oils, greases, benzenes, acids, chemicals and other liquids are stored and processed

- For floors, streets and spaces that are contaminated by oil or other liquids



## Power Cleaner 300 *Power Cleaner Special*

Highly efficient phosphate- and VOC-free detergent-based intensive **cleaning concentrate** (highly concentrated, can be diluted with water up to 1:40) with special penetration paired with disinfection. Also in a cold state it removes fast and reliably even the strongest residues, such as limescale- and boiler scale residues, rust and corrosion, cement residues, wall rot and sodium nitrate, salt scum and oxide stains, urine scale, moss and algae as well as grease and protein residues, oil- and grease incrustations from exposed-aggregate flagstone, reinforced concrete, buildings, tombstones and natural stone, interlocking stone, tiles. Glass remains unaffected.

- ➔ **Surfactants are biodegradable in accordance with EU directives**
- ➔ **Disinfectant effect**
- ➔ **Developed in line with eco-consciousness, no phosphates or hydrofluoric acid**

**Fields of use** • For acid-resistant surfaces

- For the entire sanitary area
- Outdoor areas such as terraces, garden paths, pleasure grounds/parks and cemeteries, car parks and petrol stations
- Well-suited for the cleaning of alloy wheels



**Please note:**  
When using it in confined spaces, make sure that the room is well ventilated!

### Power Cleaner 300

- A50014** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01014** 10 L jerrycan
- A03014** 30 L jerrycan
- A20014** 200 L drum

## Power Cleaner 100 *Power Cleaner H&M*

Phosphate- and hydrochloric acid-free water-based **intensive cleaner** (highly concentrated, can be diluted with water up to 1:40). In a cold state it removes cement- and limescale residues, urine scale, moss and algae, rust as well as brass and copper tarnishing, oil-, grease- and protein residues, water stains and black fungus stains, with simultaneous germ reduction and disinfection, from

- exposed-aggregate flagstone, reinforced concrete, buildings, tombstones and natural stone
- brass and copper, aluminium or stainless steel

Can be heated to 90 °C max.

- ➔ **Surfactants are biodegradable in accordance with EU directives**
- ➔ **Hygienic cleaning, developed in line with eco-consciousness**
- ➔ **Not subject to mandatory labelling in accordance with the EU Directive**

**Fields of use** • For the entire sanitary area

- Outdoor areas such as terraces and garden paths, pleasure grounds/parks and cemeteries

**Please note:**  
Not suitable for marble or limestone!



Nonfood Compounds  
Program Listed (141944)  
(A3)



### Power Cleaner 100

SAP 699 559 (DB AG)

- A50008** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01008** 10 L jerrycan
- A03008** 30 L jerrycan
- A12008** 120 L drum
- A20008** 200 L drum

**For very strong limescale residues, rust stains and beer scale.**

**For mechanical application. Authorized by DB AG. SAP 729 794**

### Power Cleaner 200 *Power Cleaner H&M „Plus“*

- A50010** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01010** 10 L jerrycan
- A03010** 30 L jerrycan
- A20010** 200 L drum

### Power Cleaner DB *Power Cleaner DB*

- SAP 729 794 (DB AG)
- A01028** 10 L jerrycan
  - A03028** 30 L jerrycan
  - A20028** 200 L drum





# Disinfectant Cleaner



Combined water-based **surface disinfection- and cleaning agent** without hydrochloric acid, with an acidic pH value (highly concentrated, dilutable with water to 1:40) to remove limescale- and cement residues, urine scale, moss and algae, grease, oil, rust and metal tarnishing, disinfecting the cleaned surfaces at the same time already in a cold state (cleaning effect may be enhanced by increasing the temperature).

**Please note:**  
Not suitable for marble or limestone!

- ➔ Cleans, disinfects and deodorizes in one process
- ➔ Removes limescale and boiler scale
- ➔ Not subject to mandatory labelling in accordance with the EU Directive
- ➔ Optimal bactericidal, fungicidal and algicidal effect due to quaternary ammonium compounds
- ➔ Surfactants are biodegradable in accordance with EU directives

## Disinfectant Cleaner

- A50003** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01003** 10 L jerrycan
- A03003** 30 L jerrycan
- A20003** 200 L drum

**Fields of use** • Cleaning and disinfection of surfaces, plants and devices in the foodstuffs industry and canteen kitchens

- In agriculture
- In public swimming pools and sanitary facilities in the public as well as the private sector

# Limescale Barracuda



This powerful **cleaner with activated foam** acts strongly upon limescale, urine scale, rust, water stains, fungi, soap residues and metal tarnishing – light oils and fats are also removed.

- ➔ Surface-conserving cleaning in bathrooms and wet rooms (also acts inside water closets and urinals)
- ➔ Antibacterial, well-adhering activated foam
- ➔ Eco-sensitive concept, the surfactants contained therein are biodegradable as specified in the EU directives
- ➔ Not subject to mandatory labelling in accordance with the EU Directive
- ➔ Non-phosphatic and free from chelating agents, contains no AOX compounds and no hydrochloric acid
- ➔ Pleasant fresh smell

**Please note:**  
Not suitable for marble or limestone!



## Limescale Barracuda

- A50002** PET-500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01002** 10 L jerrycan
- A03002** 30 L jerrycan
- A20002** 200 L plastic drum

**Fields of use** • Universally applicable for the cleaning of acid-resistant surfaces in sanitary facilities, saunas and public swimming pools

- In the exterior on glass, stones, terracotta and stoneware

# Phospha-Clean

Liquid combined **iron-phosphating- and degreasing agent** for the pre-treatment of iron- and steel parts prior to varnishing.

- ➔ **Degreases and phosphatizes in one single operational step**
- ➔ **Liquid, foam-free, ready-to-use, and directly dosable**
- ➔ **No indissoluble residues because 100% water-soluble**
- ➔ **Surfactants are biodegradable in accordance with EU directives**

**Fields of use** • Prior to wet painting- and powder coating procedures in order to improve corrosion protection and paint adhesion



## Phospha-Clean

- A03048** 30 L jerrycan
- A12048** 120 L drum
- A20048** 200 L drum

# Stripper Gel

Highly efficient **graffiti- and coating remover** with excellent dissolving power. Removes graffiti, adhesive residues, resins, varnishes, bitumen, rubber residues and abrasions, wax, felt pen, ballpoint pen ink, burnt-in soot particles as well as old sealings and coatings from surfaces made from metal, wood, stone, concrete, glass, plastics, tiles and clinker bricks. Contains select thickening agents and adhesion promoters that guarantee good product adhesion even on perpendicular surfaces. Thus the dissolving power of the bio-chem Stripper Gel can fully develop.

- ➔ **Surfactants are biodegradable in accordance with EU directives**
- ➔ **No CFC, no CHC, no benzines, no nitro compounds**
- ➔ **Optimal adherence to perpendicular surfaces**

**Please note:**  
Carry out compatibility  
test in a small spot!

**Fields of use** • Universally applicable throughout the entire industry, in the trade and with the authorities (i.a. removal of graffiti from facades and walls, telephone booths or bus shelters, means of public transport, traffic signs, train stations and underground stations etc.)

## Stripper Gel

- A00156** 1000 g wide neck bottle  
Trading unit: 12 x 1000 g (1 box)
- A00556** 5 kg wide neck container
- A01056** 10 kg jerrycan
- A03056** 30 kg jerrycan

## Stripper Liquid

- A00127** 1000 mL plastic bottle  
Trading unit: 12 x 1000 mL (1 box)
- A01027** 10 L jerrycan
- A03027** 30 L jerrycan

**For mechanical applications (dipping basins, ultrasound cleaning plants, cleaning of paint spray guns and paint accessories).**







# SC 100 *Special Cleaner*



Citrus peel-based pH-adjusted **intensive cleaner** for fast and effective removal of adhesive residues, bitumen, lubricants, graffiti, resin, oils and greases, rubber residues and abrasions from metals, stone, concrete, marble, tiles, wood and glass. (At ambient temperature and at temperatures of down to -30 °C.)

- ➔ Fast drying, waiting times between the single work processes are reduced to a minimum
- ➔ No CHC, no CFC
- ➔ Pleasant citrus odour

**Please note:**  
Carry out a compatibility test on varnished surfaces and plastic- and rubber components!

**Fields of use** • Universally applicable in the metalworking-, plastics-, woodworking-, rubber-, printing- and textile industry

## SC 100

- A40037** 400 mL aerosol spray can  
Trading unit: 12 x 400 mL (1 box)
- A50037** 500 mL tin bottle  
Trading unit: 20 x 500 mL (1 box)
- A01037** 10 L jerrycan
- A03037** 30 L jerrycan
- A20037** 200 L drum

With attenuated citrus scent and for even faster drying.



Cleans virtually residue-free, hence suitable for cleaning prior to varnishing and for surface cleaning in the woodworking industry.



Especially for removing paint, sealing compounds, layout stain, Sharpie® stains, etc. Dries more slowly on the surfaces and has a higher flash point.

## SC 200 *Special Cleaner Light*

- A50042** 500 mL tin bottle  
Trading unit: 20 x 500 mL (1 box)
- A01042** 10 L jerrycan
- A03042** 30 L jerrycan
- A20042** 200 L drum

## SC 300 *Special Cleaner Nr. 1*

- A50064** 500 mL tin bottle  
Trading unit: 20 x 500 mL (1 box)
- A01064** 10 L jerrycan
- A03064** 30 L jerrycan
- A20064** 200 L drum

## SC 400 *Special Cleaner Ultra*

- A50016** 500 mL tin bottle  
Trading unit: 20 x 500 mL (1 box)
- A01016** 10 L jerrycan
- A03016** 30 L jerrycan
- A20016** 200 L drum

# Rapid Cleaner

**Please note:**  
Carry out a compatibility test on varnished surfaces and plastic- and rubber components!

## Rapid Cleaner

- A40055** 400 mL aerosol spray can  
Trading unit: 12 x 400 mL (1 box)
- A50055** 500 mL tin bottle  
Trading unit: 20 x 500 mL (1 box)
- A01055** 10 L jerrycan
- A03055** 30 L jerrycan
- A20055** 200 L drum

**Ready-to-use cleaning agent** for the removal of adhesive- and rubber residues, bitumen, resins, varnish residues as well as greases and oils from metals, stone, concrete, tiles, wood and glass, aluminium and its alloys, and non-ferrous metals, without pitting the material. (Optimal cleaning performance at ambient temperature but also down to -35 °C.)

- ➔ Absolutely residue-free and fast evaporation, hence optimal adhesion of varnishes, adhesive tapes, adhesive film
- ➔ Environmentally compatible, no CHC, no CFC, no aromatic compounds

**Fields of use** • Universally applicable in the entire industry for absolutely residue-free cleaning and drying within seconds

- Can also be used in immersion processes



# Bio Grease-Ex

**Residue-free cleaner** with high dissolving power removes most extreme pollutions such as oils and greases, glue residues, tar, lubricants, resins, rubber residues and abrasion, and paint, from metal, tiles, concrete, marble, wood and glass and all other resistant surfaces, also at temperatures down to  $-35^{\circ}\text{C}$ . Ideal for the cleaning and degreasing of complex geometries made of steel and stainless steel prior to further processing.

- ➔ **Natural double effect guarantees excellent cleaning performance**
  - The alcoholic component dissolves water-soluble residues
  - The aliphatic component dissolves oil-soluble residues
- ➔ **Excellent wetting performance** – once dissolved, the residue is kept in the solution and does not deposit again on the surfaces before being wiped or rinsed off
- ➔ **Selected additives guarantee fast drying** – waiting times between processes are reduced to a minimum
- ➔ **Environmentally compatible** – easily biodegradable  
Biodegradability > 90 % (OECD 301E method)
- ➔ **Not subject to mandatory labelling in accordance with the EU Directive**

**Please note:**  
Carry out a compatibility test on rubber- and plastic components!

**Fields of use** • Can be applied prior to varnishing, gluing, labelling (e.g. booth building, advertising and lighting technology) or prior to other coating procedures

- Universally applicable in the metalworking-, plastics-, woodworking-, rubber-, printing-, and textile industry



## Bio Grease-Ex

- A50097** 500 mL tin bottle  
Trading unit: 20 x 500 mL (1 box)
- A01097** 10 L jerrycan
- A03097** 30 L jerrycan
- A20097** 200 L metal drum



# Rapid Cleaner Plus

**Highly efficient fast- and brake cleaner** with high dissolving and penetration power.

- ➔ **Residue-free evaporation within seconds**  
– no time-consuming drying process
- ➔ **Contains no CHC, no CFC, no aromatic compounds**

**Please note:**  
Carry out a compatibility test on varnished surfaces and plastic- and rubber components!

**Fields of use** • Removes oil, grease, dirt, brake fluid and brake pad attrition especially from drum- and disc brakes, brake pads, brake blocks and clutch components.

- Universally applicable, indispensable in workshops and installation work (also in immersion processes)



## Rapid Cleaner Plus

- E50002** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- E01002** 10 L jerrycan
- E03002** 30 L jerrycan
- E20002** 200 L drum

# STARS

Professional liquid highly concentrated **cleaners and degreasers for mechanical parts washing and degreasing**. Can be applied as **pre- and intermediate cleaners** in the metalworking and metal processing industry and as **VOC substitutes**.

- ➔ Low-foaming
- ➔ Optimal cleaning temperature at 60 °C
- ➔ Demulsifying – oil and grease input can be removed by means of mechanical methods (e.g. plate separator)
- ➔ Very low application concentration (from 0.5%)

**VOC**  
free!

**Fields of use** • Universal – can be applied manually and **mechanically** (e.g. in pressure washers and ultrasound cleaning devices)

**Please note:**  
We'll be happy to provide you with titration regulations and curves for determining the concentration!



**Cleans aluminium, non-ferrous metals, galvanized metals, high gloss polished brass without pitting the material. Silicate- and salt-free. Developed for simple cleaning- and degreasing jobs.**

## STAR 100 Metal STAR

- A03032** 30 L jerrycan
- A20032** 200 L drum
- A10032** 1000 L IBC



**Alkaline fine-tuned for the cleaning of steel, iron, casting and plastics. High dissolving power for oil and oil residues, grease- and soot residues.**

## STAR 200 Long STAR

- A03078** 30 L jerrycan
- A20078** 200 L drum
- A10078** 1000 L IBC

**Highly alkaline cleaner for the removal of most persistent pollution such as oil incrustations, resin formations, anti-friction- and roller bearings, wheel sets or single varnish layers.**

## STAR 300 Power STAR

- A03079** 30 L jerrycan
- A20079** 200 L drum
- A10079** 1000 L IBC







STAR-Cleaning	Aluminium	Galvanized surfaces	Non-ferrous metals	Brass, high gloss polished	High gloss polished surfaces	Steel/stainless steel	Plastics	Alkaline-resistant surfaces	Spray cleaning	Immersion cleaning	Ultrasound cleaning
STAR 100	X	X	X	X	X	X	X	X	X	X	X
Energy-STAR	-	-	-	-	-	X	X	X	X	X	X
STAR 200	-	-	-	-	-	X	X	X	X	X	X
STAR 300	-	-	-	-	-	X	X	X	X	X	X
ALUSTAR 100	X	X	X	-	-	X	X	X	X	X	X
ALUSTAR 200	X	X	X	-	-	X	X	X	X	X	X
ALUSTAR 300	X	-	-	-	-	X	X	X	X	X	X

## STAR-Cleaning

The bio-chem STAR cleaners have been developed especially for the bio-chem cleaning systems. (Look out for the STAR).

In combination with ultrasound devices or hot-water parts washers with plate separators they form complete and well-adjusted systems for your cleaning requirements.

**Mildly alkaline cleaner for the cleaning of aluminium, aluminium casting, non-ferrous and galvanized metals. Silicate-free. Developed for simple cleaning- and degreasing jobs.**

### ALUSTAR 100 Alu-STAR

- A03077** 30 L jerrycan
- A20077** 200 L drum
- A10077** 1000 L IBC

**Alkaline cleaner for the surface pre-treatment of aluminium. Developed for grease- and oil residues that are difficult to remove, and for pigment protection.**

### ALUSTAR 200 Alu-STAR Extra

- A03084** 30 L jerrycan
- A20084** 200 L drum
- A10084** 1000 L IBC

**Cleans and degreases heavily polluted components made from most diverse materials. Developed for most persistent pollution. Excellent penetration properties even with very rough surfaces.**

### ALUSTAR 300 Alu-STAR Turbo

- SAP 799 125 (DB AG)
- A03029** 30 L jerrycan
- A20029** 200 L drum
- A10029** 1000 L IBC

## Energy-STAR

**Alkaline cleaner for state-of-the-art mechanical parts cleaning.** Developed especially for low-temperature cleaning. The cleaner already works efficiently at ambient temperature, which saves energy costs. Thus increased salinity in the cleaning bath is avoided, which means extended lifetimes for the cleaning baths. Cleans steel, iron, casting, stainless steel, plastic and other alkaline-resistant surfaces. High dissolving power with oil and combustion residues, grease and soot pollution, machining- and anti-corrosion oils.

- ➔ The perfect solution for parts with which thermal expansion is not desirable, and for parts that are measured after cleaning
- ➔ Fewer evaporation losses, which saves cleaner, freshwater and energy used for maintaining the cleaning bath temperature

**Fields of use** • Can be used in spray-, flooding- and immersion cleaning plants, ultrasound systems and pressure washers



## Energy-STAR

- A03078-40** 30 L jerrycan
- A20078-40** 200 L drum
- A10078-40** 1000 L IBC



# Defoamer

## Defoamer with silicone

- A01087-01** 10 L jerrycan
- A03087-01** 30 L jerrycan

To ensure that subsequent processes such as varnishing or gluing will not be disrupted.

## Defoamer silicone-free

- A01087** 10 L jerrycan
- A03087** 30 L jerrycan

**Defoamer** to be used in hot-water parts washers and wherever foam would have a disruptive effect. Specifically developed for the aqueous bio-chem cleaning agents.

- ➔ Fast and permanent foam destruction
- ➔ Good dispersability and easy spreading
- ➔ Very economical – low application concentration



# Corrosion protection for water-based systems

## Corrosion protection for aqueous systems

- SAP 699 606 (DB AG)
- A00111** 1000 mL plastic bottle  
Trading unit: 12 x 1000 mL (1 box)
  - A01011** 10 L jerrycan
  - A03011** 30 L jerrycan
  - A12011** 120 L drum

**Low-foaming corrosion inhibitor** for the neutral and alkaline bio-chem cleaning agents, the bio-chem welding protection sprays, and for passivation baths and water treatment media. Contains 100 % active ingredients and provides temporary corrosion protection for steel-, iron- and casting materials.

- ➔ Free from mineral oil, nitrite, PTBB, and from secondary amines and phosphor compounds
- ➔ Very economical – low application concentration
- ➔ Also suited for application in BIO-CIRCLE parts washers

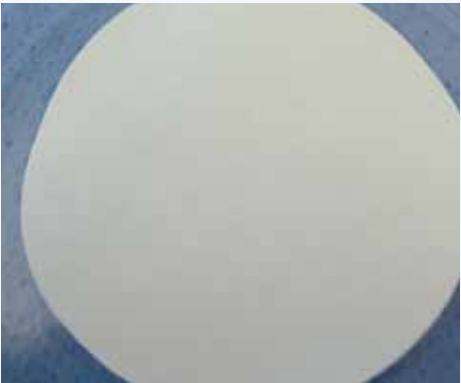
**Fields of use** • Particularly suited to substitute nitrite-containing anti-corrosion formulations in neutral and alkaline solutions.

**Grey iron shavings test in accordance with DIN 51 360 Part 2:**  
Grey iron shavings are placed on a white filter and wetted with the liquid to be examined. After 2 hours the shavings are removed, and the corrosion deposits on the filter are evaluated.

**Without corrosion protection:**  
Degree of corrosion = 4



**With 2.5% corrosion protection for aqueous systems:**  
Degree of corrosion = 0



**Tip:**  
You're not sure about the corrosion protection of your bio-chem cleaning bath? We'll be happy to carry out a free corrosion test for you!



# Smoke Resin Remover

Phosphate- and VOC-free **intensive cleaner** with germ-reducing effect and activated foam for cleaning and degreasing (highly concentrated, can be diluted with water to 1:100). For the removal of most persistent pollutions, such as smoke resin residues, resinous greases, oils and protein residues, and manufacturing residues. Increasing the cleaning temperature will shorten the cleaning time. Regular cleaning extends the operational life span of the curing plants, which guarantees a constantly high quality of the smoked sausage products.

- ➔ **Fire- and explosion-proof**
- ➔ **Residue-free rinsability, no adverse effects on the smell or taste of food-stuffs in accordance with Article 31 LFBG**
- ➔ **Surfactants are biodegradable in accordance with EU directives**

**Fields of use** • Universal applicability throughout the entire foodstuffs industry for the removal of persistent residues and pollution

- For the cleaning of smokehouses, cooking facilities, filters, escapes and exhaust hoods, ovens etc.
- Optimal for the cleaning of escapes and flues in canteen kitchens, restaurant kitchens and canteens, vent pipe residues, and burnt-in residues on grills, baking- and pizza ovens. Very good at removing smoke resin residues in smokehouses. Also suitable for the cleaning of the air circulation system in the smokehouses.



## Smoke Resin Remover

- A50038** 500 mL plastic bottle with trigger with foam nozzle  
Trading unit: 20 x 500 mL (1 box)
- A00138** 1000 mL plastic bottle  
Trading unit: 12 x 1000 mL (1 box)
- A01038** 10 L jerrycan
- A03038** 30 L jerrycan
- A20038** 200 L drum

**Please note:**  
Do not employ concentrated cleaner on aluminium and zinc coatings!



**For mechanical applications.**

### Smoke Resin Remover Foamless

- A00145** 1000 mL plastic bottle  
Trading unit: 12 x 1000 mL (1 box)
- A01045** 10 L jerrycan
- A03045** 30 L jerrycan
- A20045** 200 L drum



**For mechanical removal of most persistent residues such as anti-friction- and roller bearing greases. Authorized by Deutsche Bahn AG.**

### Smoke Resin Remover DB

SAP 667 836 (DB AG)

- A01058** 10 L jerrycan
- A03058** 30 L jerrycan
- A20058** 200 L drum
- A10058** 1000 L IBC

# E-NOX Shine *INOX-TOP*



New, highly efficient **special water-based product** for the **cleaning and servicing of matt and polished stainless steel**. Removes dust, fingerprints, oil and light limescale and flash rust residues from matt and polished stainless steel, and also services aluminium, chrome, ceramics, wood, non-ferrous metals, glass and plastics. Dries fast on processed surfaces – leaves a glossy protective film with good film strength. Protects from fresh pollution and has an antistatic effect. Printed or etched labelling (e.g. on kitchen appliances and elevators) will not be macerated.

## E-NOX Shine

- A50070** 500 mL aerosol can  
Trading unit: 12x500 mL (1 box)
- A50170** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01070** 10 L jerrycan
- A03070** 30 L jerrycan
- A20070** 200 L drum

- ➔ **Silicone-free, VOC-free**
- ➔ **Can be used in the foodstuffs industry, NSF authorization**
- ➔ **The jerrycan goods are not subject to mandatory labelling in accordance with the Ordinance on Hazardous Substances and EU directives**
- ➔ **Ready for use – just spray it on and wipe it off – no cleaning streaks**



Nonfood Compounds  
Program Listed (130578 • 130843)  
(A7, C1)

# E-NOX Clean *INOX-CLEAN*



Highly efficient ready-to-use **cleaning gel** (can be diluted with water up to 1:40; the geliform texture of the cleaner diminishes if water is added, though) to remove mineral residues, such as limescale- and cement residues, foreign corrosion as well as light grease- and oil pollution. Lightens stainless steel, aluminium and non-ferrous metals without affecting the basic metal. The cleaning gel adheres very well to perpendicular surfaces, screens, rollers, etc. In this way the active ingredients can develop optimally and dissolve the residues.



## E-NOX Clean

- A00141** 1000 mL plastic bottle  
Trading unit: 12 x 1000 mL (1 box)
- A01041** 10 L jerrycan
- A03041** 30 L jerrycan
- A20041** 200 L drum

- ➔ **Surfactants are biodegradable in accordance with EU directives**
- ➔ **Contains neither hydrofluoric nor nitric nor hydrochloric acid**
- ➔ **Water-based cleaning gel, non-combustible**



**Tip:**  
E-NOX Clean for bikers: effortless and fast cleaning of stainless steel rims and spokes. Brush it on, rub it in with a brush if necessary, and rinse it off after 10 min application time. Finished!

# E-NOX Care *INOX-CARE*



Ready-to-use highly refined pure **protection- and care oil** for stainless steel, aluminium and non-ferrous metals. It leaves on the surfaces a slightly gleaming film that protects them from fresh pollution. Subsequent fingerprints won't remain visible or can easily be removed with a cloth.

## E-NOX Care

- B50019** 500 mL plastic bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- B00519** 5 L jerrycan
- B01019** 10 L jerrycan
- B03019** 30 L jerrycan

- ➔ **Eliminates moisture and protects from weather effects**
- ➔ **Long-term protection for stainless steel inside and outside of buildings**





# Die Casting Mould Cleaner

Non-combustible **die casting mould cleaner** for the removal of separating agent residues during the regular intermediate cleaning of aluminium die casting moulds. Regular intermediate cleaning alleviates and shortens the final cleaning. Preserves the moulds simultaneously and tolerates commercially available separating agents well.

- ➔ **Very economical – low consumption**
- ➔ **Can be applied at maximum process temperature**
- ➔ **Staff will not be bothered by fumes**

**Fields of use** • Aluminium die casting foundries



## Die Casting Mould Cleaner

- E01017** 10 L jerrycan
- E03017** 30 L jerrycan
- E20017** 200 L drum
- E10017** 1000 L IBC

# OMNI *All-in-one*

Economical **multifunctional spray** with excellent capillarity. Forms a lubricating, non-resinifying anti-corrosion film. **Dissolves** rust and graphite, **removes** resinified greases and oils, **greases** everything from hinges to bike pedals, **protects** from rust and creep current.

- ➔ **Contains no hydrocarbon solvents (e.g. petroleum)**
- ➔ **No acid, no silicone, no Teflon**
- ➔ **Excellent penetration properties, even in very tight spaces**
- ➔ **Not subject to mandatory labelling in accordance with the EU directives**

**Fields of use** • Indispensable in everyday use in production, maintenance, craft, workshops, agriculture, gardening, forestry, building industry, and home and hobby

- Can also be used in dipping baths as a dehydrogenating agent
- For the efficient pre-cleaning in case of persistent resin-, grease- and oil pollutions in BIO-CIRCLE parts washers



### Tip:

Also protects welding tables from spatter and corrosion!

## OMNI

SAP 687 107 (DB AG)

- E10016** 100 mL aerosol can  
Trading unit: 12 x 100 mL (1 box)
- E40016** 400 mL aerosol spray can  
Trading unit: 12 x 400 mL (1 box)
- E50016** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- E01016** 10 L jerrycan
- E03016** 30 L jerrycan
- E20016** 200 L drum
- E10116** 1000 L IBC







# Multi Clean



Phosphate-free water-based **cleaner** (highly concentrated, can be diluted with water to 1:40) for the removal of grease, oil, resin, wax, nicotine, pencil, ballpoint pen, felt pen, ink, algae, mould, soot, insects, blood, bitumen- and tar spatter, coffee- and tea stains, shoe polish etc. from all kinds of surfaces, such as metal, plastics, wood, rubber, stone, ceramics and china, glass, varnish, textiles, carpets, upholstery etc. Heating to 90°C max can increase the cleaning power many times over.

➔ Surfactants are biodegradable in accordance with EU directives

➔ Non-combustible and non-abrasive

➔ Not subject to mandatory labelling in accordance with the EU directives

**Please note:**  
Carry out a compatibility test on sensitive surfaces and on textiles, carpets and upholstery!!

## Multi Clean

- A10124** 1000 mL plastic bottle with trigger  
Trading unit: 10 x 1000 mL (1 box)
- A00524** 5 L jerrycan
- A01024** 10 L jerrycan
- A03024** 30 L jerrycan
- A20024** 200 L drum

**Fields of use** • Can be used universally in manual and mechanical applications

• Also in wet extraction devices for carpets



# Eyeglass Cleaner



High-yield **spectacles cleaner** for the residue- and streak-free removal of fingerprints, dust, dirt, and light oil- and grease residues

➔ Ready to use – just spray it on and wipe dry with a cloth

➔ Anti-mist, anti-static, silicone-free

➔ Gentle cleaning – non-abrasive

➔ No alcohol – will not attack anti-reflection glasses

## Eyeglass Cleaner

- A05057-20** 50 mL pump-action bottle
- A25057-20** 250 mL pump-action bottle

**Fields of use** • Spectacles and safety goggles made from glass or plastics, safety masks, welding goggles, gas- and smoke goggles, visors

• Visual display units, optical devices

# Hand Cleaning Lotion Hand Cleaning Paste

Soft-on-the-skin **pH-adjusted hand cleaning lotion and hand cleaning paste** based on natural citrus peel with a pleasantly fresh scent. Even if applied sparingly (3-5 mL), residues such as oil- and grease residues, tar- and bitumen residues, most paints and varnishes and other persistent pollutions are removed from the hands in a deep-pore cleaning process that is kind to the hands.

- ➔ Cleans and disinfects gently without dehydrating the skin
- ➔ Free from benzines, aromatic compounds, bases or soaps
- ➔ Surfactants are biodegradable in accordance with EU directives
- ➔ Lotion without sand, wood- or plastic flour or other abrasive agents, hence gentle, non-abrasive skin cleaning; at the same time no danger of choked-up drainpipes
- ➔ Paste contains plastic abrasive grains for the removal of even the coarsest residues

**Fields of use** • Very dirty hands in all sectors of the trade and the industry, workshops as well as home and hobby



## Hand Cleaning Lotion

- A50007** 500 mL PET bottle  
Trading unit: 20 x 500 mL (1 box)
- A01007** 10 L jerrycan
- A03007** 30 L jerrycan

## Hand Cleaning Paste

- A00107-04** 1000 mL pail  
Trading unit: 6 x 1000 mL (1 box)
- A01007-04** 10 L pail
- A03007-04** 30 L pail

# Rubbel Dubbel Damp cleaning wipes

Damp perforated **cleaning wipes** for fast and thorough cleaning without water. Gently remove greases and oils, fresh paint- and varnish residues, adhesives, bitumen, felt pen, ballpoint pen, ink, stamping ink, food debris, shoe polish, grass stains and much more from the hands in a deep-pore cleaning process. After use, the cleaning agents dry fast on the hands, leaving a pleasant citrus scent.

- ➔ Very sturdy heavy-duty special wipe with an anti-skidding side (deep-pore cleaning of even the most persistent residues) and a gentle smooth side for wiping dry
- ➔ Lint-free, leaves no fibrous residues

**Fields of use** • Universally applicable in the industry, in the trade, in leisure time as well as home and hobby

- Also very well suited for removing stains from textiles, carpets and upholstery, and for cleaning tools and machine parts



In a  
convenient  
reusable  
dispenser pail!



## Rubbel Dubbel Damp cleaning wipes

- A00186** Dispenser pail with 90 wipes  
Wipes: 250 x 320 mm



# Coffee Machine Cleaner



## Coffee Machine Cleaner

- A50051** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A01051** 10 L jerrycan
- A03051** 30 L jerrycan

Phosphate-free **intensive cleaner** (highly concentrated, dilutable with water to 1:40) for the efficient removal of coffee- or tea stains and residues, as well as nicotine, mould, food residues, milk deposits, oil, grease, insect speck etc. from coffee machines and automated coffee vending machines, and from any surface made from stainless steel, metal, plastics, ceramics, china, glass, wood etc..

- ➔ Surfactants are biodegradable in accordance with EU directives
- ➔ Not subject to mandatory labelling in accordance with the EU directives
- ➔ Fire- and explosion-proof



Nonfood Compounds  
Program Listed (142309)  
(A1)

**Fields of use** • Cleans hoses, pipes, filters and other device- and machine parts of the coffee machines

**Please note:**  
Do not employ concentrated cleaner on aluminium!

# New Fresh Air



## New Fresh Air

- A50071** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A00571** 5 L jerrycan
- A01071** 10 L jerrycan
- A03071** 30 L jerrycan

pH-adjusted ready-to-use **odour remover** with long-term effect due to a two-step combination of active ingredients:  
Step 1: immediate effect due to a highly efficient odour absorber that quickly absorbs and neutralizes unpleasant odour molecules  
Step 2: long-term effect by means of micro-organisms that degrade the transmitting components of malodorous compounds  
For the elimination of unpleasant smells in rubbish bins and at rubbish collecting points, of flooding-, burnt-, mould-, nicotine- and restroom smells, cooking smells, pet smells etc..

- ➔ Only contains naturally occurring micro-organisms
- ➔ Also acts pre-emptively – stench formation is already avoided beforehand

**Fields of use** • Hospitals, old peoples' homes and nursing homes, supermarkets and department stores, the catering trade, hotels and pubs and restaurants, car- and truck interiors, animal cages and baskets, industrial and private areas

# Clean & Shiny



## Clean & Shiny

- A50069** 500 ml spray bottle  
Trading unit: 20 x 500 mL (1 box)
- A00569** 5 L jerrycan
- A01069** 10 L jerrycan

Solvent-free, ready-to-use **special product** for car cleaning and care. Seals and preserves the car paint. Also suitable for the cleaning and touching up of rims, plastics, chrome, varnished surfaces, and rubber.

- ➔ No additional water consumption
- ➔ Incombustible
- ➔ Cleaning, care, and protection in a single operation
- ➔ Not subject to mandatory labelling in accordance with the EU Directive

**Fields of use** • Car cleaning and household



# Hair Remover – Drain-Free

Highly concentrated fast-acting liquid **drain cleaner** for the removal of hairs, soap residues, greases, blood residues and other organic components from siphons, pipes and drains.

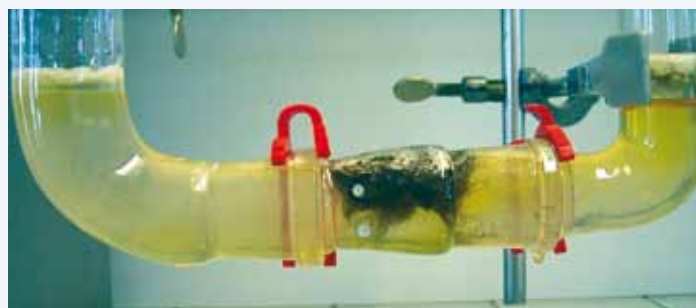
- ➔ No chlorinated ingredients – no vapours during the application
- ➔ Deodorizing effect, if applied regularly it will eliminate unpleasant putrid smells
- ➔ Antiseptic effect – prevents growth of putrefactive germs

**Fields of use** • Universally applicable in the foodstuffs- and beverage industry, in the catering trade, in hotels, old peoples' homes and nursing homes, in hospitals as well as in sanitary facilities of public and private institutions



## Hair Remover – Drain-Free

- A00106** 1000 mL plastic bottle  
Trading unit: 12 x 1000 mL (1 box)
- A01006** 10 L jerrycan
- A03006** 30 L jerrycan
- A20006** 200 L drum



# Urine Attack

pH-adjusted **cleaner** especially for the controlled elimination of urine smell in restrooms (highly concentrated, dilutable with water to 1:40). The typical causes of smells in sanitary facilities (amines, ammonia, hydrogen sulphides, mercaptans et al.) are not just masked but eliminated by means of a two-step method.

- S 1 Instant effect:** by means of odour absorbers – smells are chemically absorbed and neutralized.
- S 2 Long-term effect:** by means of micro-organisms – the transmitting components of annoying urine- and faecal smells are degraded

- ➔ Very economical, immediate and long-lasting effect without pitting chrome fittings
- ➔ Not subject to mandatory labelling in accordance with EU directives

**Fields of use** • Public restrooms and private bathrooms

- Besides urinals and toilet bowls, very often joints are the source of the smell. They absorb urine and cannot be cleaned perfectly with conventional cleaning agents and disinfectants. bio-chem Urine Attack penetrates the joints and reliably degrades urine there without pitting or eroding the joints.



## Urine Attack

- A50039** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- A00139** 1000 mL plastic bottle  
Trading unit: 12 x 1000 mL (1 box)
- A01039** 10 L jerrycan
- A03039** 30 L jerrycan



Micro-organisms  
are working for  
you here!

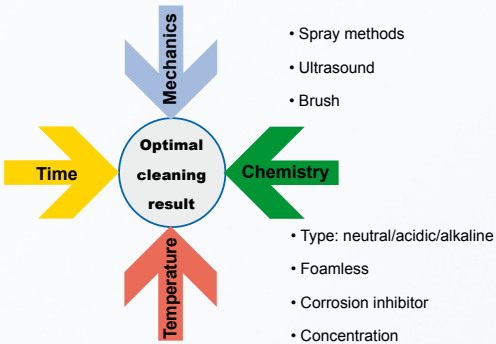


# Cleaning systems

The bio-chem cleaning systems offer a wide range of water-based cleaning machines for the safe and convenient cleaning and degreasing also of bigger parts. Fields of application range from the entire maintenance sector to manufacturing, mechanical and plant engineering and construction.

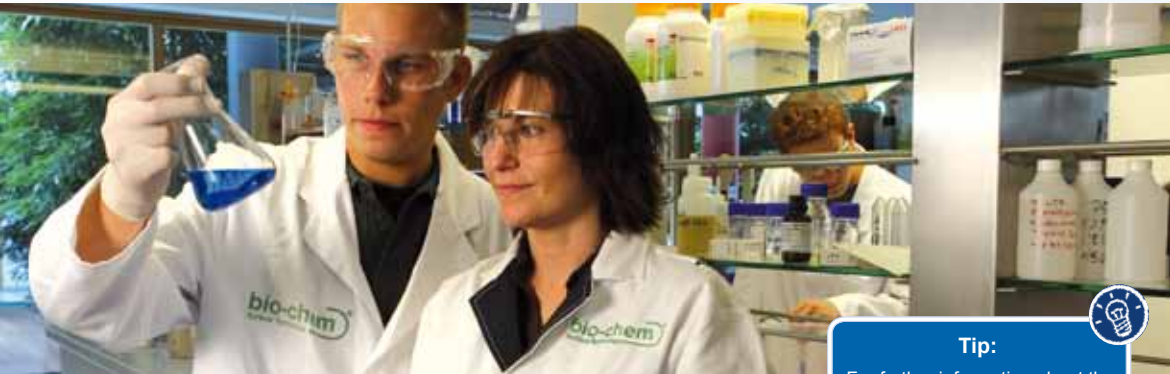
The starting point for choosing a particular cleaning- and degreasing system is the type, size and condition of the parts to be cleaned, and the requirements on the degree of cleanliness and performance.

Frequently test washings are required in addition in order to determine the right combination of plant- and process technology, as only the right “mixture” of the four factors will lead to optimal results.



**Take no risk!**  
Use our technical facilities for cleaning tests.

We support you in optimizing your cleaning tasks, from selecting the cleaning chemistry to cleaning technology – with a practical orientation and with expertise. Together with your experts we analyze your cleaning requirements and develop solutions that meet your demands and expectations. In our technical facilities in Gütersloh we carry out cleaning tests for you – and, if you like, with you. Then we support you in your plant with the practical implementation of these results – from installing the plant to integrating it in your manufacturing process. Moreover you are welcome to attend select trainings at our bio-chem Academy to learn about testing procedures for cleaning baths, tips and tricks from users’ everyday practice, and on request also general cleaning basics. This forum also serves as an opportunity for the exchange of information with other users. **Test our mettle!**



**Tip:**  
For further information about the application of our products please call us on +49 (0) 5241 9443 0.



## STAR cleaning

The bio-chem STAR cleaners have been specifically developed for the use in cleaning machines. The bio-chem STARS contain demulsifying surfactants, i.e. oil and grease residues are not emulsified and can be removed reliably from the cleaning- and degreasing baths by means of the plate separator. This means extended bath lifetimes, reduced disposal costs, reduced cleaner consumption and reduced downtimes due to preparation of new baths.

# Hot-water parts washer

## Sturdy, fully automatic cleaning device for one-step cleaning and degreasing of small parts

A maintenance-friendly **high-pressure spray system**, equipped with a special nozzle system, provides for thorough cleaning and degreasing of tools and other parts. Due to the powered rotating rack and the spray pressure the bio-chem cleaners in the hot-water parts washer have an optimal effect on the items to be cleaned.

- ➔ Tank with an inclined bottom for fast emptying of the basin
- ➔ Adjustable thermostat (up to 90 °C)
- ➔ Machine body, rack element, filter and spray system, and wiring cabinet made from stainless steel
- ➔ Power-actuated rotating rack
- ➔ Timer-controlled cleaning time
- ➔ A protect switch prevents the pump motor from working when the lid is open

**Fields of use** • Water-based parts cleaning in maintenance, production, manufacturing, and the service industry



### Please note:

- On demand we can provide customer- and process-oriented solutions.  
This includes:
- Insulated machines
  - Automatic level regulation
  - Cover plate with filter insert racks
  - Vapour suction
  - Plate separator (external) for the separation of non-emulsified oils
  - Increased spray pressure (up to 7 bar)



	HTW II – 800	HTW II – 1000	HTW II – 1200
Diameter rotating rack	800 mm	1000 mm	1200 mm
Max height of items to be cleaned	450 mm	500 mm	700 mm
Payload	100 kg	250 kg	350 kg
Operating temperature	Up to 90 °C	Up to 90 °C	Up to 90 °C
Heating	4,5 kW	6 kW	9 kW
Pump	2,5 bar, 4,8 m³/h	4 bar, 12,0 m³/h	4 bar, 12,0 m³/h
Tank capacity	120 L	300 L	430 L
Material	Stainless steel	Stainless steel	Stainless steel
Power supply	400 V, 50 Hz	400 V, 50 Hz	400 V, 50 Hz
Dimensions (D x W x H)	900 x 1050 x 1050 mm	1330 x 1280 x 1200 mm	1530 x 1480 x 1400 mm
Order number	<b>G12630B</b>	<b>G12640B</b>	<b>G12650B</b>





# Plate Separator

High-performance cost-efficient device for the care and treatment of contaminated process baths



**Please note:**  
We develop and manufacture customized solutions on demand.  
This includes i.a. gullies and grease scraper chains.

Lifetimes of cleaning- and degreasing baths and cooling lubricant emulsions are extended with the aid of the plate separator. Disturbing substances such as oil, grease, solvents and solids are removed from the process baths, keeping the process baths within the production cycle for the long term.

The plate separator works on a physical basis. It benefits from the effect of gravitation (attracting force) and coalescence (droplets flowing together) for the separation of impurities from the process baths. All substances with a specific gravity that differs from that of water by 5% are separated. The contaminated bathing fluid flows through the angle profiles arranged behind one another, the lightweight droplets merge and rise to the surface, the heavier substances sink to the bottom.

- Constant good quality of process baths
- Cost savings due to reduced cleaner- and cooling lubricant consumption
- Reduction of disposal costs
- Reduced unit costs
- Reduced downtimes due to longer lifetimes
- Meets the requirements of the German Circular Economy Act (KrW)
- Reduction of labour costs for cleaning jobs
- Sturdy, mobile and low-maintenance



## Suction devices



Thuringia design



Hilti design



Trade fair design



HTW design

	PPT Mini	PPT Kompakt	PPT 001	PPT 002	PPT 003
Overall dimensions L x W x H (mm)	295 x 125 x 275	495 x 145 x 400	745 x 245 x 445	1100 x 450 x 550	1400 x 450 x 550
Flow rate (L/h)	100	200	800	1500	2500
Capacity	Up to approx 2,5 m3/h	Up to approx 2,5 m3/h	Up to approx 2,5 m3/h	Up to approx 2,5 m3/h	Up to approx 2,5 m3/h
Operating temperature	Up to 90 °C	Up to 90 °C	Up to 90 °C	Up to 90 °C	Up to 90 °C
Operating pressure	Any desired	Any desired	Any desired	Any desired	Any desired
Material	Stainless steel 1.4301	Stainless steel 1.4301	Stainless steel 1.4301	Stainless steel 1.4301	Stainless steel 1.4301
Order number	G11900	G11940	G11910	G11920	G11930

# Pipe- and Heat Exchanger Cleaning Device

## Cleaning system for pipes, heat exchangers and coolers

Made completely from stainless steel, the bio-chem **Pipe- and Heat Exchanger Cleaning Device** has been specifically designed for the cleaning and rinsing of contaminated pipes, heat exchangers and coolers. If the cleaning medium bio-chem **Power Cleaner DB** is employed, contaminations such as urine scale, limescale, and corrosion are effectively removed with simultaneous anti-bacterial effects. With the cleaning medium bio-chem **Smoke Resin Remover foamless** or **DB**, greases, oils and oil residues can be eliminated reliably.

- ➔ Cool and warm mode (thermostat adjustable up to 90 °C  
– factory-set to an optimal 60 °C)
- ➔ SS flow switch prevents the pump and heating from running dry
- ➔ Stainless steel filter protects the pump from solids
- ➔ Catch basin for hoses with a drain for easy emptying
- ➔ Easy handling – no dismantling of device components required
- ➔ Mobile – the device is mounted on a trolley and can thus be taken directly to the application



### Tip:

This device is also available for the cleaning of cooling systems of plastic injection moulding tools.



### Please note:

We also provide devices for the rinsing and cleaning of tubes and receptacles on trains (RWR 500 DB)!



	RWR 80 I	RWR 500 DB
Dimensions (L x W x H)	720 x 1200 x 940 mm	2300 x 980 mm
Media tank capacity	80 L with a drain for easy emptying	500 L with a drain for easy emptying
Dimensions (mm)	600 x 400 x 600	
SS pump supply	Up to max. 2,5 m³/h (cont. adjustable via ball valve)	Up to max. 15 m³/h (cont. adjustable via ball valve)
Discharge	–	Up to max. 15 m³/h (cont. adjustable wheel gear with digital rev indicator)
Vogelsang pump		
Power supply	380 V, 16 A	400V, 32A, 22kW/heating 2 x 9kW
SS heating	Adjustable up to 90 °C, factory-set to an optimal 60 °C	Adjustable up to 90 °C, factory-set to an optimal 60 °C
Hose connections	Inlet: 1" Escape: 1½"	Inlet: 1" Return pipe: 1½"
Total weight	110 kg	440 kg
Order number	<b>G29000</b>	<b>G29001</b>





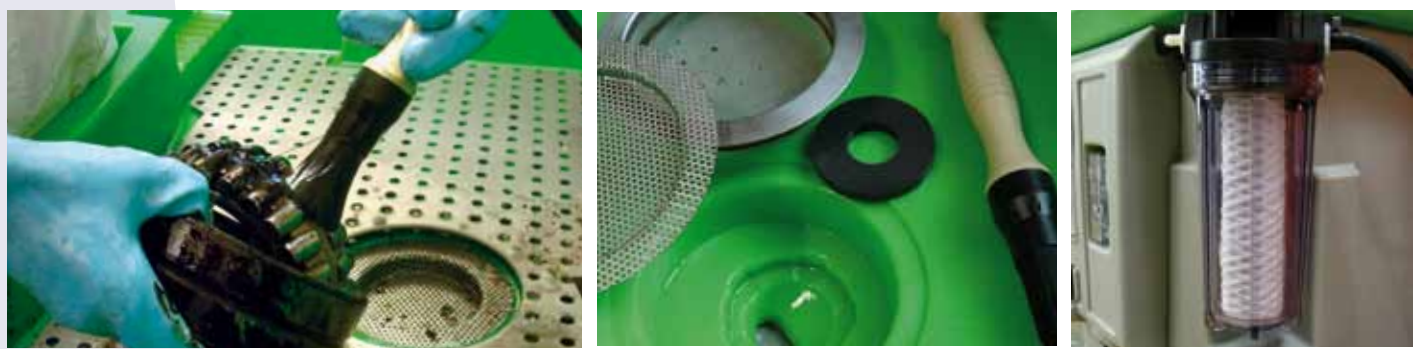


# BIO-CIRCLE®

## The trendsetting parts washing system

BIO-CIRCLE systems are comfortable to use, environmentally friendly, and they offer optimal solutions to any requirement you may have in parts washing.

Its easy handling, its fast, safe and environmentally friendly cleaning also of extremely soiled parts, and the long service life of the VOC-free liquids make the BIO-CIRCLE system matchless in its economic efficiency.



## BIO-CIRCLE Maxi



### The sturdy one

The BIO-CIRCLE Maxi is a high-performance, sturdy and durable parts washer. It scores with its ease of use and high payload.

- Large effective surface, plenty of space even for cumbersome parts that can be cleaned perfectly with the long hose on the brush
- Easy handling of the liquid pump by means of a push-button switch
- The hinged upper section with its pneumatic spring guarantees easy servicing, maintenance, and repair
- A lid (optional feature) protects from contamination



# BIO-CIRCLE Compact

## The compact one

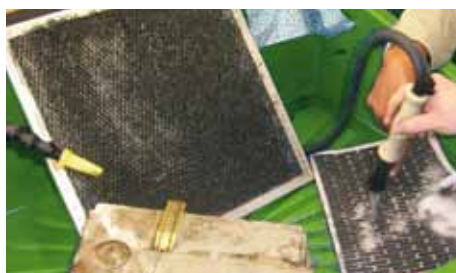


The BIO-CIRCLE Compact impresses with its high-performance functions, and its compact design saves space in the plant.

- ➔ Ideally suited for small rooms or confined spaces
- ➔ Integrated drain device for easy exchange of BIO-CIRCLE Liquid
- ➔ Maintenance-friendly due to its hinged upper section
- ➔ The three-filter system and an additional fine mesh filter increase the effectiveness of the BIO-CIRCLE cleaning media.



We have been conferred the 2007 Innovation Award "Environmental Technology" by the Initiative Mittelstand.



# BIO-CIRCLE Mini

## The flexible one



The BIO-CIRCLE Mini makes you mobile and flexible, and you can work comfortably in changing locations.

- ➔ The tried and tested reliable parts washing system in a flexible design
- ➔ Integrated trolley with two stationary and two steering castors
- ➔ Manoeuvrable and easy to push, can be utilized quickly in changing locations
- ➔ Maximum filling capacity of 80 L



	BIO-CIRCLE Mini	BIO-CIRCLE Compact	BIO-CIRCLE Maxi
Work surface (W x D)	610 x 500 mm	740 x 540 mm	880 x 580 mm
Payload	90 kg	100 kg	220 kg
Working height	1010/820 mm	1040/900 mm	960/820 mm
Operating temperature	15 – 48 °C, factory-set at approx. 41 °C	15 – 48 °C, factory-set at approx. 41 °C	15 – 48 °C, werks. factory-set at approx. 41 °C
Heating	Approx. 700 W	Approx. 750 W	Approx. 750 W
Pump	40 W	40 W	40 W
Optimum filling quantity	80 litres	90 litres	100 litres
Material	LDPE	LDPE	LDPE
Empty weight	Approx. 40 kg	Approx. 45 kg	Approx. 60 kg
Power supply	230 V, 50 Hz	230 V, 50 Hz	230 V, 50 Hz
Order number	<b>G70026</b>	<b>G50026</b>	<b>G60026</b>



# BIO-CIRCLE® Turbo

## 2 in 1

### – automatic and manual cleaning

**The BIO-CIRCLE Turbo Stainless Steel**

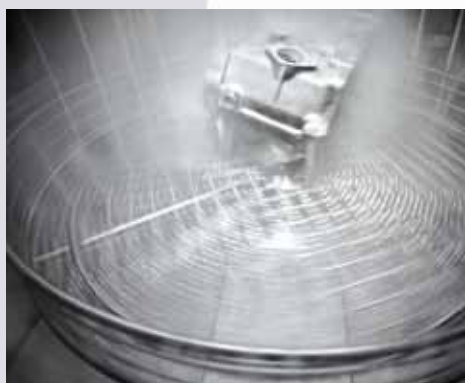
**– the efficient combination of fully automated and manual cleaning**

An easy-to-maintain high-pressure spray system conjoint with the biological cleansing medium BIO-CIRCLE L Turbo cleans and degreases workpieces thoroughly. Due to its powered rotating rack and the high spray pressure of 4 bars, BIO-CIRCLE L Turbo has optimal impact on the items to be cleaned. For a fast and precise manual cleaning the flow brush or the nozzle can be used instead of automatic cleaning.

- ➔ **Stable 1.4301 steel design with a weight-bearing capacity of 350 kg**
- ➔ **Sturdy stainless steel rack with mechanical spinning, touch button to spin the rack in idle mode for easy loading and unloading and for manual cleaning**
- ➔ **Protect switch prevents the pump motor from running with the lid open – safe handling is guaranteed**
- ➔ **Ergonomic hand spray gun with quick release fastener for cleaning brush and variable cleaning nozzle (generates a point jet that removes contaminations from inaccessible spots, or a fan-shaped jet that cleans smooth surfaces); fast drying possible by means of a pneumatic spray gun**
- ➔ **Interior lighting – provides optimum visibility during manual cleaning**
- ➔ **Tank with slightly tilted bottom for faster emptying, tank cover with filter elements beneath the rack, with dry running protection**
- ➔ **A time switch controls the duration of the automatic cleaning and provides optimal ease of use**



BIO-CIRCLE Turbo: 2 in 1 – automatic and manual cleaning



	BC Turbo 800	BC Turbo 1000	BC Turbo 1200
Overall width (mm)	1060	1250	1470
Overall depth (mm)	1140	1340	1575
Height, lid closed (mm)	1560	1560	1800
Height, lid open (mm)	1965	1965	2300
Opening angle for loading	60 – 65°	60 – 65°	60 – 65°
Inner working diameter of the rack (mm)	800	1000	1200
Rack height (mm)	115	115	115
Useful height max (mm)	470	470	650
Payload max (kg)	160	250	350
Total kerb weight (kg)	250	300	350
Power supply (kW)	5,5	8,5	12
Voltage (V)/frequency (Hz)	400/50	400/50	400/50
Spraying pressure (bar)	2,5 (4 optional)	4	4
Output (m <sup>3</sup> /h)	12	12	12
Heating output (kW)	4,5	6	9
Tank capacity (L)	140	220	380
Air supply (bar)	Max. 8	Max. 8	Max. 8
Tested according to	CE	CE	CE
Order number	<b>G40027</b>	<b>G42027</b>	<b>G43027</b>

## Stainless steel top piece for BIO-CIRCLE

The convincing features of the stainless steel top piece for the BIO-CIRCLE are its large work surface and high payload (up to 500 kg). It is ideally suited for the cleaning of big and heavy parts.

- ➔ Particularly large work surface (1500 x 950 mm) that can be used by two operators at the same time
- ➔ Conical drain with a 600 µm sieve filter and optional add. filter bag (25 – 200 µm)
- ➔ Easy loading possible by means of a crane
- ➔ PE grids (optional) for protection
- ➔ Maximum load without base frame 250 kg, maximum load with base frame (square tube frame) 500 kg







# BIO-CIRCLE<sup>®</sup> Liquid

**NEW:**

**Four high-performance BIO-CIRCLE Liquids guarantee optimum results in parts washing.**



*Dermatologically tested!*

## The new BIO-CIRCLE Liquid range – the right solution for any application!

The BIO-CIRCLE Liquids are specialists in clean solutions. They stand out for their fast and thorough cleaning performance. The natural micro-organisms they contain degrade the oil ingressed and guarantee long durability and a long serviceable life with a constantly high cleaning performance. The aqueous BIO-CIRCLE Liquids do not contain any solvents, thus avoiding VOC emissions, and meet the requirements of the solvent directive. They do not require placarding/labelling under the Ordinance on Hazardous Substances and EU Directive, and are therefore easy and safe to use, store, and transport.

We will be happy to advise you on which BIO-CIRCLE Liquid is the right one for you. We give competent advice and valuable tips on technically correct parts washing.



Nonfood Compounds  
Program Listed (139721)  
(C1)



## Natural

The BIO-CIRCLE Liquids benefit from the powers of Nature in order to provide for user-friendly, eco-friendly, and economical parts washing. They clean without any solvents or cold cleaners, thus protecting the employee and the environment from highly volatile vapours. The ph-adjusted BIO-CIRCLE Liquid cleaning agents dissolve processing oils, cutting coolants, anti-corrosion products, light greases and similar contaminations as well as particle contaminations from the parts. The easy-to-clean filter system separates coarse and fine contaminations, and the natural micro-organisms biodegrade the greases and oils, thus maintaining the cleaning performance.

## Simple

The BIO-CIRCLE Liquids are ready for use, which eliminates the risk of incorrect dilution and variations in quality, and the necessity of regular bath analyses. The aqueous BIO-CIRCLE Liquids do not pit the surfaces; all materials from plastics to steel can be cleaned.

## Profitable

BIO-CIRCLE Liquids feature a bath lifetime that is up to four times as long as with cold cleaners. Even with a higher contamination input a constantly good cleaning result is achieved. BIO-CIRCLE Liquid means: no hazard to humans and the environment, paired with high efficiency and cost effectiveness.



## BIO-CIRCLE Liquid


Optimized formula!

- ➔ Optimally adjusted to everyday soiling
- ➔ Compatible with oil separators – tested in accordance with ÖNORM B5105
- ➔ Fresh scent – also neutralizes unpleasant smells caused by ingress of soiling
- ➔ Special corrosion inhibitors guarantee temporary protection after cleaning
- ➔ NSF certified
- ➔ Improved skin protection through panthenol
- ➔ Skin-friendliness has been dermatologically tested
- ➔ Surfactants on the basis of renewable resources

	<b>A02026</b> 20 L jerrycan
	<b>A20026</b> 200 L drum
	<b>A10026</b> 1000 L IBC

## BIO-CIRCLE Liquid Turbo

- ➔ Low foaming for mechanical cleaning in the BIO-CIRCLE Turbo
- ➔ For temperatures of up to 50 °C
- ➔ With corrosion protection

	<b>A02082</b> 20 L jerrycan
	<b>A20082</b> 200 L drum
	<b>A10082</b> 1000 L IBC

## BIO-CIRCLE Liquid Heavy Duty



- ➔ Removes even heavy oils and greases
- ➔ Improved cleaning performance especially for tenacious soiling
- ➔ Also suited for removing bitumen and corrosion-preventive waxes
- ➔ Fresh scent – also neutralizes unpleasant smells caused by ingress of soiling
- ➔ Special corrosion inhibitors guarantee temporary protection after cleaning

Optimized formula!





	<b>A02098</b> 20 L jerrycan
	<b>A20098</b> 200 L drum
	<b>A10098</b> 1000 L IBC

## BIO-CIRCLE Liquid Alu

- ➔ For the cleaning of sensitive materials, such as aluminium
- ➔ Virtually residue-free
- ➔ Without scent – can be added as required
- ➔ NSF certification pending
- ➔ Surfactants on the basis of renewable resources

	<b>A02099</b> 20 L jerrycan
	<b>A20099</b> 200 L drum
	<b>A10099</b> 1000 L IBC

### Comparison between a conventional parts cleaner with cold cleaner and BIO-CIRCLE

	Parts cleaner with cold cleaner	BIO-CIRCLE BIO-CIRCLE L
What happens in case of increased pollution input?	Saturation of the rinsing solution Deterioration of cleaning performance	Results remain the same over the entire period 😊
What contaminations can be removed? Organic, unpolar (greases, oils) Inorganic, polar (salts) Inorganic, unpolar (chippings, dust)	Excellent Modest Modest	Excellent Excellent Good 😊
What materials can be cleaned? Stainless steel Steel Aluminium Non-ferrous metals	Excellent Excellent Excellent Excellent	Excellent Excellent Excellent Excellent 😊
Occupational safety and health	  	

Impairments to health <small>(Source: Gefahrstoffe Kaltreiner, M043, 02/2007, BIG Chemie)</small>	Parts cleaner with cold cleaner	BIO-CIRCLE BIO-CIRCLE L
Nerve damage	Toluene, xylene, trichloroethylene, n-hexane, petroleum ethers (hexanal isomers, pentane, heptane, octane)	None 😊
Skin damage	Yes	None 😊
Liver damage	Methylene chloride, trichloroethylene, toluene, xylene, methanol, ethanol	None 😊
Kidney damage	Trichloroethylene, petroleum, fuel mixtures, hexane, heptane, toluene, xylene, alcohols	None 😊
Blood cell damage	Toluene, benzene	None 😊
Mutagenic and fecundity-endangering effects	Organic solvents	None 😊
Carcinogenic effects	Benzene	None 😊



# Ultrasound Cleaning Devices

Ultrasound cleaning is a gentle, efficient and fast cleaning method. In ultrasound cleaning standard surface cleaning is paired with the removal of contaminations from the finest pores and indentations.

- Housing and basin made from stainless steel – hygienic, low-maintenance and durable
- Drain with a drain cock for easy emptying
- Timer adjustable to 1–15 min or continuous operation
- Powerful and sturdy large-scale surface vibration systems



**Please note:**  
Stainless steel racks are equipped with thermally insulated handles. Noise-reducing lids made from plastics or stainless steel (G13930 and G13940) available!

	Sonic S2,75	Sonic S5,75	Sonic S9,5	Sonic S12,75	Sonic S18	Sonic S28	Sonic S45	Sonic S90
Basin capacity (L)	2,75	5,75	9,5	12,75	18	28	45	90
Rack dimensions L x W x H (mm)	198 x 106 x 55	255 x 115 x 75	255 x 200 x 75	250 x 190 x 115	280 x 250 x 115	455 x 250 x 115	455 x 270 x 194	545 x 450 x 250
Overall dimensions L x W x H (mm)	300 x 179 x 214	365 x 186 x 264	365 x 278 x 264	365 x 278 x 321	390 x 340 x 321	568 x 340 x 321	615 x 370 x 467	715 x 570 x 467
Weight (kg)	3,3	5,1	5,9	7,5	8,5	11	25	38
Power consumption (W)	280	550	550	1000	1000	1500	2000	2800
Order number	G13915	G13925	G13935	G13945	G13910	G13920	G13930	G13940

# Multifrequency Devices

With multifrequency devices one can choose between strong intensive cleaning (25 kHz) and gentle delicate cleaning (45 kHz). All functions can be set via the easy-view operator control panel. In addition the generator features a power adjustment (10–100 %) with an integrated power control.

- Ideally suited for continuous operation in the industrial sector
- Sturdy welded basin made from special purpose stainless steel 1.4435
- DEGAS function for fast degassing of the fluid
- Sweep function for more uniform cleaning effect (the base frequency is constantly varied within a narrow frequency band)
- Emptying via a control button on the side of the device

**Please note:**  
Noise-reducing stainless steel lids available!

	Sonic X22	Sonic X45	Sonic X70	Sonic X97	Sonic X133	Sonic X215
Basin capacity (L)	22	45	70	97	133	215
Rack dims. L x W x H (mm)	255 x 230 x 165	415 x 255 x 210	400 x 255 x 360	490 x 525 x 200	480 x 525 x 300	630 x 575 x 365
Overall dims. L x W x H (mm)	405 x 449 x 800	575 x 479 x 800	575 x 479 x 800	676 x 750 x 800	676 x 750 x 800	826 x 800 x 800
Weight (kg)	42	51	55	78	85	97
Power consumption (W)	2310	3910	6810	7620	9520	9520
Order number	G14010	G14020	G14030	G14040	G14050	G14060



# SURFOX<sup>TM</sup>

## Cleaning system for welding seams

Patented cleaning system for stainless steel for the removal of heat tinting from welding seams. Restores the original gloss of the welded points. The SurfoxT cleaning agent works by means of electrolysis. This means fewer risks for the user than in working with corrosive fluid, hydrofluoric acid or nitric acid.



- ➔ Fast cleaning and passivation
- ➔ Automatic or manual pump system for the precise dosing of the electrolytic fluid SurfoxT
- ➔ Vapours are condensed by means of compressed air
- ➔ No neutralization required – the processed points are wiped with bio-chem FT 100 or rinsed with water
- ➔ For the permanent marking (black etching) of stainless steel a marking kit is available as an accessory

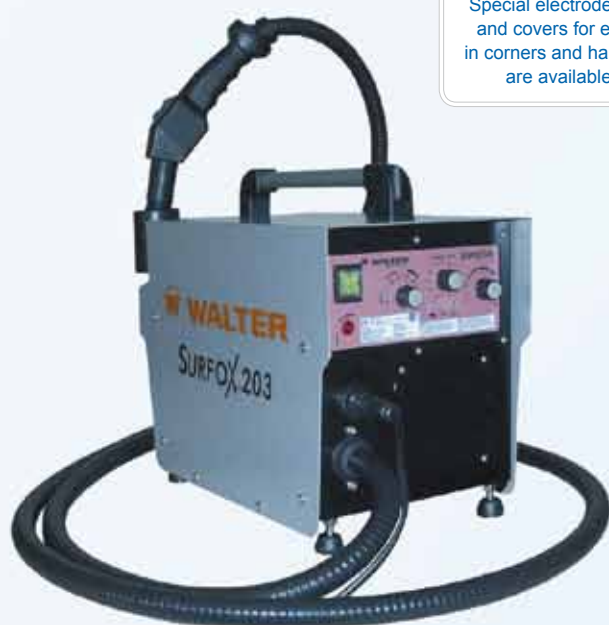
**Fields of use** • Stainless steel manufacturers and secondary industry, chemical and pharmaceutical industry, foodstuffs industry and refrigeration technology

**Please note:**

Special electrodes, cleaning pads and covers for efficient cleaning in corners and hard-to-reach areas are available on request!

**Please note:**

A little handle for Surfox 103/203 is available as an optional feature!

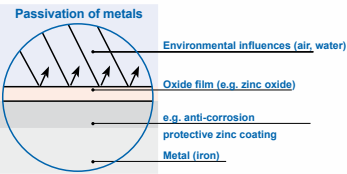


### Surfox accessories

- G10091** Surfox T 100 ml tube  
For Surfox Mini only
- G00591** Surfox T 5 L jerrycan
- H02391** Marking kit

	Surfox Mini	Surfox 103	Surfox 203
Power supply	230 V AC or DC 50/60 Hz	230 V AC 50/60 Hz	230 V AC or DC, 50/60 Hz
Dimensions (mm)	200 x 210 x 85	470 x 200 x 250	470 x 200 x 250
Weight (kg)	4,3	20,0	16,8
Order number	<b>G30091</b>	<b>G10391</b>	<b>G20391</b>

# Protecting



When people talk of corrosion (Latin for “gnawing away”), they mostly mean rust. Rust develops from iron or steel through oxidation with oxygen in the presence of humid air or water. The metal is coated with an oxide film, the properties of which vary depending on the metal. The oxide film of iron is porous and can splinter off in scales. Iron metal that has not yet corroded is exposed, and the rusting process proceeds. This causes worldwide damage running into millions every year.

bio-chem anti-corrosion products prevent or inhibit corrosion on items during their use. The temporary corrosion protection by means of oil or wax serves to guarantee the functionality of the protected parts until their employment.

## High-Performance Anti-Rust Oil



This liquid brown **anti-corrosion oil** protects metals and machine parts before, during and after processing as well as during storage inside and outside of buildings. Special additives provide for an exceptionally high neutralizing capacity, which guarantees reliable long-term protection even in the presence of aggressive media.

- Corrosion tests:**
- Test in the humidity chamber
  - Seawater immersion test
  - Hydrobromic acid immersion test

- ➔ **Contains no chlorine components and no PCBs**
- ➔ **Water-dispersing, excellent penetrating properties**

**Fields of use** • Protects semi-finished products and finished products until further processing and assembly, seasonally operated devices and machines in the building sector and agriculture and forestry, and municipal vehicles efficiently and reliably from corrosion

### High-Performance Anti-Rust Oil

- 🔧 **B50013** 500 mL plastic bottle  
Trading unit: 20 x 500 mL (1 box)
- 🗑️ **B01013** 10 L jerrycan
- 🗑️ **B03013** 30 L jerrycan

## High-Performance Anti-Rust Wax



This transparent **long-term corrosion protection** protects all metals from corrosion during open-air storage and transport. The highly flexible and dynamic protective film has excellent metal adherence properties, it is water-dispersing and seawater-resistant.

- Corrosion tests:** 240 h salt spray test on a bright steel plate  
Film thickness approx. 10 g/m² (one single application)

- ➔ **Transparent protective film, non-adhesive, non-dust-laying**
- ➔ **Water-dispersing with excellent wetting properties**
- ➔ **Fast-drying protective film**

### High-Performance Anti-Rust Wax

- 🔧 **B40011** 400 mL aerosol can
- 🗑️ **B50011** 500 mL tin bottle  
Trading unit: 20 x 500 mL (1 box)
- 🗑️ **B01011** 10 L jerrycan
- 🗑️ **B03011** 30 L jerrycan
- 🗑️ **B20011** 200 L drum

**Fields of use** • Transport- and storage conservation for machines and machine parts, tools and devices of any kind

- Protects components from corrosion in wire EDM
- Can be applied in an immersion bath at 20 to 25 °C for the treatment of hollow bodies

# Stainless Steel Spray

Fast-drying **anti-corrosion spray** made from micro-fine stainless steel powder in combination with an innovative resin, provides a matt glow effect and durable corrosion protection on all steel parts. Easy to apply even to points that are difficult to access.

- ➔ Heat-resistant protection from corrosion and weather effects up to 240°C
- ➔ Water-repellent and structural elastic for preservation and retouching
- ➔ Scratch-resistant, resistant to bending and impact-proof, highly resistant to acids, liquors and other aggressive environmental influences

**Fields of use** • Universally applicable in the private, commercial and industrial sector for all corrosion protection works in the industry, workshops and the building sector, garden and hobby



## Stainless Steel Spray

- 🔗 **B40004** 400 mL aerosol can  
Trading unit: 12 x 400 mL (1 box)

# Zinc and Zinc Silver Paste + spray

Aluminium- and zinc pigments guarantee high-tech corrosion protection. By covering the surface in a roof-tile-like manner they achieve excellent protection and also make the pigment and epoxy resin unite perfectly.

- ➔ Fast-drying durable corrosion protection and elastic abrasion-resistant protective layer, highly resistant to aggressive environmental influences
- ➔ Ideal for spot-welding
- ➔ Zinc paste may be employed on drinking water-carrying systems (upon examination by the DVGW [German Association of the Gas- and Water Sector])

**Fields of use** • Repair work on damaged zinc coats and coatings in the industry

- Basic coating for water- and weather-exposed plants as well as all corrosion protection works. In the foodstuffs industry, in the automobile trade, in vehicle construction, agriculture, public businesses, in the building sector and in the sphere of home and hobby.



**Colour: metallic glow**  
(Identical to the hue of the hot-dip galvanized zinc coating)  
**Zinc purity in the dry coating: 98.5–99.7%**

**Colour: zinc grey**  
**Zinc content in the dry coating: 95%**  
**Zinc purity: 98.5–99.7%**



## Zinc Paste Silver

- 🔗 **B50015** 500 g tin  
Trading unit: 12 x 500 g (1 box)
- B00115** 1 kg tin  
Trading unit: 12 x 1000 g (1 box)
- 🔗 **B01015** 10 kg tin pail

## Zinc Spray Silver

- 🔗 **B40008** 400 mL aerosol can  
Trading unit: 12 x 400 mL (1 box)

## Zinc Paste

- 🔗 **B50003** 500 g tin  
Trading unit: 12 x 500 g (1 box)
- B00103** 1 kg tin  
Trading unit: 12 x 1000 g (1 box)
- 🔗 **B01003** 10 kg tin pail

## Zinc Spray

- 🔗 **B40007** 400 mL aerosol can  
Trading unit: 12 x 400 mL (1 box)



# Lubricating

## Lubricants

Lubricants prevent friction between parts moving against or on one another. They can be classified according to their state (liquid – solid).



### 1. Lubricating oils

Lubricating oils are employed if dynamic properties are required, e.g. for gearboxes, sleeve bearings etc. Oils can be changed easily, and they have a cleaning- and cooling effect as an additional feature.

### 2. Greases

Lubricating oils are not suitable for all lubricating purposes because they drip off and do not remain at the friction point over a longer period of time. If in these applications greases are used, the grease can be held in position at the friction point, especially if the point to be lubricated is in a slanting or perpendicular position. Greases have the additional advantage over lubricating oils that they provide additional sealing for the friction point, thus protecting the friction point from contaminations, humidity or water.

### 3. Solid lubricants

Solid lubricants (graphite, MoS<sub>2</sub> [molybdenum disulfide] and metals are counted among them) deposit on the stressed surfaces and alter them in a way that no fusing of the surfaces sliding on one another can occur. With the aid of lubricating oils the solid lubricants are turned into a paste-like state, which guarantees easy dosing and better adherence to the surfaces.

## Cooling lubricants

Cooling lubricants are indispensable in metal cutting, except for the occasional machining of brittle cast iron for instance.



Cooling lubricants are distinguished into:

⌚ **non-water-miscible**  
bio-chem High-Performance Cutting Oil

⌚ **water-miscible**  
bio-chem Cutting Coolant milky and transparent

The main task of the cooling lubricants, besides rinsing off the cuttings and providing temporary corrosion protection, is keeping the cutting temperature low in order to prevent glossy streaks on the workpiece surface caused by blunt tools. This is achieved by “cooling” and “lubricating”: cooling in order to discharge the resulting heat, lubricating in order to keep the resulting heat low from the outset by reducing the friction.

Thus the non-water-miscible cooling lubricants, i.e. the bio-chem cutting oils, are generally employed where in slow heavy-duty machine operations, such as drilling, thread cutting, and hobbing, the focus is on lubrication and friction reduction.

Water-miscible cooling lubricants, bio-chem Cutting Coolant milky and transparent, are used if very high amounts of heat, as e.g. with high cutting speeds, have to be discharged.

## Aqua-Form

Water-based non-combustible **deforming wax** with a high heat transfer coefficient, which provides excellent tool cooling and hence optimal tool lifetimes. Temporary corrosion inhibitors protect workpiece and tool. Odourless and kind to the skin; renewable raw materials account for approx. 40 % of the solids contained therein. Can be applied moist and dry for light to medium deformation strains.

➡ Free from mineral oils and synthetic oils

➡ Contains no chlorinated paraffins

➡ Odourless and kind to the skin

**Fields of use** • Deformation processes

- Bending, calibrating, dilating, and crimping of most diverse materials such as steel, stainless steel, non-ferrous- and light metals, and other high-quality metal alloys

• Sheet metal forming and pan production

• Due to its good protective function against spatter also suitable as a separating agent in welding

- Does not have to be removed before welding

• Pipe bending



### Aqua-Form

🗑️ **C01018** 10 L jerrycan

🗑️ **C03018** 30 L jerrycan

🗑️ **C20018** 200 L drum

**For heavy and very heavy deformation strains.  
Can be applied dry. Sulphur-free.**

### Aqua-Form dry

🗑️ **C01017** 10 L jerrycan

🗑️ **C03017** 30 L jerrycan

🗑️ **C20017** 200 L drum

## Food Tech Oil

Colour-, odour- and tasteless **hydraulic and lubricating oil** based on highly purified oils. For the greasing and servicing of items used in the production, treatment or putting in circulation of foodstuffs that may act on such foodstuffs in the process. Excellent lubrication properties, good corrosion- and abrasion protection (high temperature resistance – can be applied to approx. 150 °C)

➡ May get in touch with foodstuffs if technically unavoidable in accordance with the German Foodstuffs and Consumer Goods Law (LMGB)

➡ No resin formation or agglutination even in case of long-term use

➡ High ageing resistance without quality loss

**Fields of use** • Universally applicable in the foodstuffs-, beverage- and pharmaceutical industry, in the catering trade, in hospitals etc.



Norfoast Compounds  
Program Listed (143544)  
(H1)



### Food Tech Oil

🗑️ **C40001** 400 mL aerosol spray can

Trading unit: 12 x 400 mL (1 box)

🗑️ **C50001** 500 mL PET bottle with trigger

Trading unit: 20 x 500 mL (1 box)

🗑️ **C01001** 10 L jerrycan




**C03001** 30 L jerrycan






## Anti-Seize



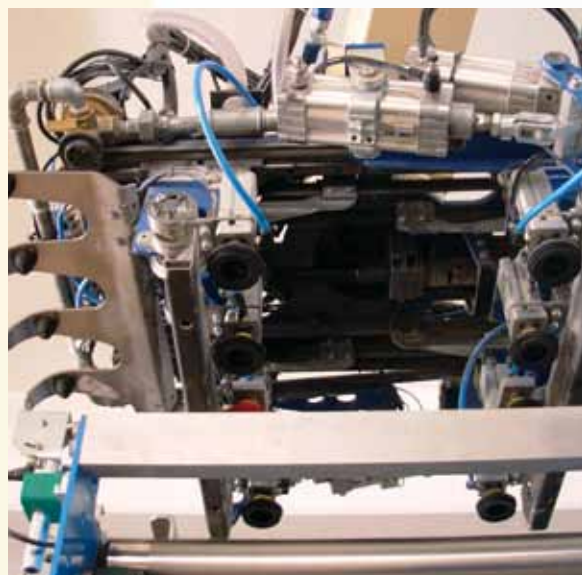
### Anti-Seize

-  **C25002** 250 g brush tin  
Trading unit: 12 x 250 g (1 box)
-  **C40002** 400 mL aerosol spray can  
Trading unit: 12 x 400 mL (1 box)
-  **C00102** 1 kg tin

Micro-fine **high-performance solid lubricant paste** that deposits in fissured and porous sliding surfaces, thus protecting from corrosion, heat freeze and abrasion at temperatures of up to 1200°C. The select inorganic solid lubricant combination, embedded in special synthetic oil, is resistant to cold and hot water, oil, benzene, and most acids and liquors. Abrasion-, flash-, and rinsing-proof, free from abrasives. Prevents friction corrosion, protects against fretting corrosion, avoids electrochemical corrosion. For more precise torques.

-  **Low coefficient of friction and excellent oxidation stability**
-  **Protection even at 1200°C and at extreme pressures of up to 200 N/mm<sup>2</sup>**
-  **Contains no copper, nickel, lead, sulphur, halogens or silicone oil**

**Fields of use** • Prevents bolts, hinges and bolted connections from metal-to-metal contact, and greases slow-running bearings on eccentric action machines, curved disks, chains and antifriction bearings



- Makes unfastening hot screws easier and in addition makes them reusable
- Protects welding nozzles from weld spatter
- Lubricates slow-running bearings and prevents surface abrasion on slow-running shafts





## Metal-free Anti-Seize





**Please note:**  
Do not use on oxygen systems  
and in the presence of acetylene!

### Metal-free Anti-Seize

-  **C25010** 250 g brush tin  
Trading unit: 12 x 250 g (1 box)
-  **C00110** 1 kg tin

This metal-free, white **high-performance lubricant** prevents heat freeze and metal-to-metal contact at temperatures of up to 1400°C. Clean handling, suitable for applications where conventional metallic dark anti-seize pastes cannot be used. Resistant to hot and cold water, oil, benzene, and most acids and alkalis. Abrasion-, flash-, and rinsing-proof, prevents electrochemical corrosion. Sealant for the correction of inaccuracies on flanges and flat gaskets, for more precise torques. Makes unfastening hot screws easier and in addition makes them reusable.

-  **Protection from striae and seizures even at 1400°C and at extreme pressures of up to 200 N/mm<sup>2</sup>**
-  **Prevents electrolytic corrosion (galling)**

**Fields of use** • In petrochemistry, heating- and exhaust plants, thermal power stations, bolt connections, sealings, welding sleeves, flange- and bolted pipe connections, bolts, valves, bushes, thermally strained sliding surfaces, stainless steel etc.



# High-Performance Cutting Oil

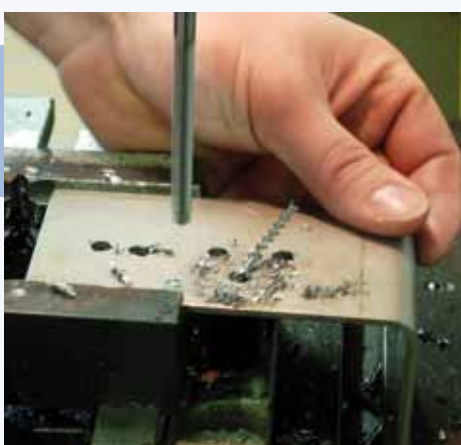
**Cutting oil** for machining processes on metals and plastics with excellent cooling-, lubricating- and cutting properties. Prevents the formation of built-up edges.

- ➔ Improves the surface quality of the workpieces
- ➔ Extends tool lifetimes and hence cutting performance
- ➔ Reliable corrosion protection – odour-free – high-tensile

	Density at 15 °C	Viscosity at 40 °C	Flash point	Pour point
High-Performance Cutting Oil	0,89 g/mL	35 mm <sup>2</sup> /s	>100 °C	-30 °C



**For simple to demanding machining tasks on all kinds of steels, casting materials and non-ferrous metals. Can be rinsed with water. Can be applied in the proximity of foodstuffs. Aerosol spray can with cutting gel.**



## High-Performance Cutting Oil

- 📦 **C40004** 400 mL aerosol spray can  
Trading unit: 12 x 400 mL (1 box)
- 📦 **C50004** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- 📦 **C01004** 10 L jerrycan
- 📦 **C03004** 30 L jerrycan

# Cutting Coolants

Water-miscible **cutting coolants**, no labelling required, with high cooling effect, excellent lubrication performance, good corrosion protection, and a wide range of applications (can also be applied in CNC centres). Extremely low-foam – also in soft waters. In compliance with TRGS 611 [Use restrictions for water-miscible and water-mixed cooling lubricants, during the application of which N-nitrosamines may occur].

- ➔ Good skin-friendliness – dermatological test reports available
- ➔ Boron- and amine-free – in line with state-of-the-art occupational health requirements
- ➔ Excellent compatibility and surface quality with aluminium



	Cutting Coolant Milky	Cutting Coolant Transparent
Density at 20 °C	0,93 g/mL	1,10 g/mL
Viscosity at 20 °C	250 mm <sup>2</sup> /s	17 mm <sup>2</sup> /s
pH value (5% solution)	9,3	9,3
Corrosion protection	3% solution Corrosion level grade 0	5% solution Corrosion level grade 0
Refractive index	1,0	1,9
Dosage	As an oil-in-water emulsion, mostly 3 – 15%ig	As an aqueous solution, mostly 2 – 7%ig
Range of application	High- and highest-level machining, coarse machining	Low- to medium-level machining, grinding applications

**Clear water-soluble fully synthetic cooling lubricant for the grinding and milling of steel and non-ferrous metals.**

## Cutting Coolant Transparent

- 📦 **C01011** 10 L jerrycan
- 📦 **C03011** 30 L jerrycan
- 📦 **C20011** 200 L drum

**Mineral oil-containing cooling lubricant for general to heavy-duty machining processes with iron, steel, non-ferrous metals, aluminium and alloys.**

## Cutting Coolant Milky

- 📦 **C01008** 10 L jerrycan
- 📦 **C03008** 30 L jerrycan
- 📦 **C20008** 200 L drum

# Welding



The bio-chem welding protection sprays are water-based and prevent weld spatter from burning in during MIG/MAG welding and laser cutting.




Our welding protection sprays are **stable one-phase emulsions**. In storage the active ingredients will not separate, so one does not have to shake the bottles and jerrycans. They **remain stable** for their **entire shelf life** of at least one year (frost-proof storage) and require no stirring. Therefore they are also available in **cost-effective 200 L drums** or 1000 L IBCs. The bio-chem welding protection sprays are **ready for use**. Just take the spray bottle, **spray it on, weld, and wipe it off – finished!** No time-consuming mixing of a separating agent from concentrate, and no variations in quality due to too much or too little concentrate.

Our products are applied by means of a handheld spray bottle. The spray heads are sturdy and have been selected on purpose for welding because they guarantee **finest atomization**. The spray bottles are **refillable** and can easily be refilled from the jerrycans (10 L and 30 L) or drums (200 L) by means of a drain cock. For the bio-chem welding protection sprays we have obtained several approvals for trouble-free galvanizing and varnishing after welding, e.g. the approvals issued by Her-ning Zinc Coating, Volkswagen AG, SLT Laser Technology, and the Dresden Institute for Corrosion Protection, to name but a few.



## E-WELD ROB



### E-WELD ROB

-  **D01014** 10 L jerrycan
-  **D03014** 30 L jerrycan
-  **D20014** 200 L drum

**Cost-effective robotic welding** requires uninterrupted operation. By applying bio-chem **E-WELD ROB** in the automatic cleaning units of the welding robots, the welding nozzle is protected from weld spatter by a thin protective film, even at high amperes and high temperatures. This **extends the service life of the welding nozzles**, and the cost-intensive replacement of nozzles is reduced to a minimum. The **efficiency of the welding process** is increased.

-  **No sticking on the nozzles**
-  **Based on renewable raw materials**



## E-WELD 3 *fun@welding*

Odourless blue **welding separating agent** with **temporary corrosion protection** and simultaneous **cleaning effect** in a functional refillable handheld bottle with trigger. Prevents sticking of weld spatter in dry and wet state, thus protecting work pieces, welding nozzles and welding equipment.

- ➔ Non-combustible, silicone- and solvent-free
- ➔ Galvanizing and varnishing possible after welding without any problems
- ➔ Economical in use – a thin protective film is sufficient
- ➔ Surface-active substances contained herein are biodegradable

**Fields of use** • When welding stainless steel or other metals

- Also applicable in laser cutting
- Vehicle construction, extraordinary construction, steelwork, container- and boiler construction, crane construction, automotive- and supply industry and other metalworking enterprises

**Please note:**

When used in processes check possible effects on subsequent process stages!



### E-WELD 3

	<b>D50008</b> 500 mL PET bottle with trigger Trading unit: 20 x 500 mL (1 box)
	<b>D01008</b> 10 L jerrycan
	<b>D03008</b> 30 L jerrycan
	<b>D20008</b> 200 L drum
	<b>D10008</b> 1000 L IBC

## E-WELD 4 *relax@welding*

This state-of-the-art **separating lotion** with its safety guarantee contributes to optimum welding. Free from solvents, mineral oil and silicone. No adverse effects on downstream processes such as varnishing or galvanizing. Pleasant citrus scent. No unpleasant odours or smoke nuisance for the user during welding.

- ➔ Guaranteed safety during welding – pore-free weld seams are guaranteed even in case of excessive separating lotion
- ➔ Excellent spatter protection guarantee, even high-energy spatter won't stick
- ➔ Protective film guarantees temporary corrosion protection
- ➔ On the basis of natural rapeseed components – using renewable raw materials means saving resources

**Fields of use** • For welding steel, metals, austenitic materials

- For the protection of tools, appliances and welding nozzle
- Vehicle construction, extraordinary construction, steelwork, container- and boiler construction, crane construction, automotive- and supply industry and other metalworking enterprises



### E-WELD 4

	<b>D50012</b> 500 mL PET bottle with trigger Trading unit: 20 x 500 mL (1 box)
	<b>D01012</b> 10 L jerrycan
	<b>D03012</b> 30 L jerrycan
	<b>D20012</b> 200 L drum
	<b>D10012</b> 1000 L IBC





# E-WELD *Welding protection spray*



**Welding protection spray** on the basis of nature-identical ingredients. Hazelnut- and sunflower extracts prevent weld splatter from sticking to the surfaces and guarantee optimum welding. Features good temporary corrosion protection, effective in dry and wet state and features a good cleaning effect.

- ➔ **Odourless**
- ➔ **Solvent- and silicone-free**
- ➔ **Galvanizing and varnishing possible after welding without any problems**  
– Clearance by zinc coaters HERNING Varmforzinkning A/S
- ➔ **Excellent wetting properties – a thin coating features excellent separation properties**

**Fields of use** • For welding austenitic materials, steel and other metals

- For the protection of the welding nozzles and the welding equipment
- Vehicle construction, extraordinary construction, steelwork, container- and boiler construction, crane construction, automotive- and supply industry and other metalworking enterprises



**Tip:**

bio-chem E-WELD 2 for laser cutting: prevents the development of skimmings at the laser penetration point, powder burns on the inside can be removed more easily. The cutting edges are clean and don't need reworking.

**Especially for multilayer welding. Facilitates welding of thin and/or preheated metal sheets.**



**E-WELD**

- D50001** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- D01001** 10 L jerrycan
- D03001** 30 L jerrycan
- D12001** 120 L drum
- D20001** 200 L drum
- D10001** 1000 L IBC

**E-WELD 2  
(High temperature)**

- D50002** 500 mL PET bottle with trigger  
Trading unit: 20 x 500 mL (1 box)
- D01002** 10 L jerrycan
- D03002** 30 L jerrycan
- D12002** 120 L drum
- D20002** 200 L drum
- D10002** 1000 L IBC



**Quality and safety as the basis of the perfect symbiosis of economy, ecology and performance**



LOOS relies on bio-chem E-WELD 4  
LOOS INTERNATIONAL with over 140 years of specialization in industrial boiler construction offers extensive know-how and experience advantage. Innovation and responsibility, quality-consciousness and creativity are the benchmarks for the product range and the services. “We have found the solution for our welding: bio-chem E-WELD 4,” says graduate engineer Ferdinand Smola, SFI production manager boilers W2.



KBA builds on bio-chem E-WELD 3 and E-WELD 2  
The KOENIG & BAUER consortium offers the widest product range of the trade and is one of the biggest printing machine manufacturers in the world. Andreas Hernich, head of manufacturing technology: “After various tests we have decided for the bio-chem products E-WELD 3 and E-WELD 2, with E-WELD 2 being used successfully on our welding robots.”

## E-WELD Gel *Nozzle lub*

Odourless, economical **nozzle lubricant** made of highly pure, light-coloured fats that guarantee maximum cleanliness and a pleasant working atmosphere. Builds a protective film on the flow and gas nozzles, thus preventing the burning-in of weld spatter. This means prophylactic protection against short circuits and gas shortages due to burnt-in weld spatter.

- ➔ **Silicone-free**
- ➔ **Does not contain solvents and is free from abrasive substances**
- ➔ **Lengthens the life span of the welding nozzles – saves costs**
- ➔ **Economical in use – high yield**

**Fields of use** • Highly versatile for the protection of nozzles when welding, e.g. in vehicle construction, extraordinary construction, steelwork, container- and boiler construction, crane construction, automotive- and supply industry and other metalworking enterprises



### E-WELD Gel

- D20006** 200 g tin  
Trading unit: 12 x 200 g (1 box)
- D01006** 10 L pail



#### Tip:

bio-chem E-WELD Gel also protects the welder's apron and gloves as well as the safety boots from weld spatter.

## E-WELD 5

Fast and easy **nozzle protection**. Just spray E-WELD 5 into the welding nozzle and start welding. No pore formation even with excessive separating agent. Also excellent application properties in impulse welding and with special welding gases.



### E-WELD 5

- D25013** 250 mL pump spray bottle  
Trading unit: 12 x 250 mL (1 box)
- D01013** 10 L jerry can
- D03013** 30 L jerry can



The surface-active substances contained herein are biodegradable.

Safety data sheets in accordance with the new EU chemical regulations (REACH) available upon request.

**KONECRANES**  
Lifting Businesses™

#### bio-chem E-WELD 3 at KONECRANES

“KONECRANES is a global group of dynamic hoist companies that claims for itself not only to hoist loads but also to increase our customers' business – lifting businesses. We support the production- and process industries, shipyards and ports with productivity-increasing hoisting solutions and services on plants of all manufacturers,” reports Norma Rosemeier, Marketing. For the manufacturing of large cranes for ports, shipyards and shipping companies Robert Mahler, director Production Line, banks on bio-chem E-WELD 3.



#### KINKELE and bio-chem E-WELD 4

As a partner in terms of welding Josef Weber, production manager of KINKELE GmbH & Co. KG, relies on the bio-chem products. KINKELE offers customized solutions in mechanical engineering, apparatus engineering and constructional steelwork and has evolved into one of the most important enterprises of its kind. In mechanical engineering the versatile and tradition-steeped enterprise takes on the manufacturing, assembly and running-in tests of special machines, complete apparatuses and plants.

# Air Force

COMING  
SOON!

Finally a breath of fresh air!

The environmentally neutral spray system.

Refillable. Comfortable. Safe.

The new Air Force System replaces aerosol spray cans.

With the Air Force System refillable cans are automatically filled with the **AF-WELD** welding release agent or **AF-CLEAN** water-based surface cleaner and with the environmentally neutral blowing agent **compressed air**. The advantage over conventional systems is its fast and easy application.

The use of highly flammable aerosol spray cans in welding can cause deflagrations due to explosive mixtures that may build up on the ground or in hollow spaces. The VMBG (Union of German metalworking trade associations) says that spray cans, irrespective of the different ingredients, pose a danger because of their being filled with a propellant. They may only be used in a safe environment, and in compliance with legal- and safety requirements. Moreover, aerosol cans cannot be refilled and have to be disposed of after use (partially emptied spray cans even have to be treated as hazardous waste).



And here are the extraordinary performance characteristics of the new Air Force Systems:

- ➡ Can be used with the AF-WELD welding release agent or with the water-based AF-CLEAN cleaner
- ➡ Space-saving and ergonomic compact system
- ➡ Compressed air as an absolutely environmentally neutral blowing agent
- ➡ Reduces waste, no disposal of empty aerosol spray cans
- ➡ Easy handling
- ➡ Extremely economical in use





## AF-WELD

In the development of the **AF-WELD welding release agent** value was placed both on top performance and on environmental compatibility. The product is incombustible and also contains no flammable ingredients. The active ingredients contained therein are based on renewable raw materials. This saves fossil resources and makes the natural AF-WELD welding release agent, in combination with the Air Force device, a perfect aid in industrial welding technology.

- ➔ **Safety guaranteed during welding – even with an excess of separating lotion a pore-free weld seam is ensured**
- ➔ **Excellent spatter protection guarantee, even high-energy spatter will not stick**
- ➔ **Protective film guarantees temporary corrosion protection**
- ➔ **Based on renewable raw materials – conserves resources**

**Fields of use** • For the welding of steel, metals, and SS materials

- For the protection of tools, appliances and welding nozzles
- For vehicle construction, extraordinary construction, steelwork, container- and boiler construction, crane construction, automotive- and supply industry and other metalworking enterprises



**VOC**  
free!

### Air Force WELD System Welding

- G10050** Air Force Station, red
- 🔴 **G10060** 400 mL spray can (empty), red, refillable
- 🔵 **D01015** 10 L AF-WELD bag-in-box



## AF-CLEAN

**AF-CLEAN** is a **water-based surface cleaner**. It removes machining oils, separating agents, and traces of smoke as well as light waxes, and fresh adhesive- and paint residues. Select ingredients ensure fast evaporation of the product, and the surfaces will dry faster than with traditional water-based cleaners. In combination with the Air Force device AF-CLEAN makes an efficient and effective substitute for solvent cleaners in spray cans.

- ➔ **Fast drying, temporary corrosion protection**
- ➔ **Easy to use**
- ➔ **Not subject to mandatory labelling in accordance with the Ordinance on Hazardous Substances and the EU Directive**
- ➔ **Biodegradable in accordance with EU directives**

**Fields of use** • Substitute for solvents, cellulose thinner, etc.

- For cleaning in the plastic injection moulding industry
- For degreasing/cleaning prior to varnishing

**VOC**  
reduced!

### Air Force CLEAN System Cleaning

- G10051** Air Force Station, blue
- 🔵 **G10061** AF-CLEAN 400 mL spray can (empty), blue, refillable
- 🔵 **D01063** 10 L AF-CLEAN bag-in-box



# Seasonal products

Windscreens freezing over, and ice and snow in winter or green coating in summer turning pavements into slides – the bio-chem seasonal products are the solution.

## Windscreen Cleaner –60 °C







Mixing chart	
Concentrate : water	
2:1	down to –30 °C
1:1	down to –20 °C
1:2	down to –10 °C

Frost-proof penetrating **windscreen cleaner** with excellent cleaning properties, well-suited for use on most surfaces. Prevents the windscreen washer system and the headlamp wash/wipe system from freezing. Effortlessly removes residues in wintry road traffic and provides clear sight. Highly concentrated, can be diluted with water depending on the temperature. Does not evaporate immediately on frozen windscreens but acts on the surface until the windscreen wipers have removed the dissolved layer. The penetration effect delays refreezing and prevents nozzle freezing. The full spray water jet from the windscreen washer system is guaranteed, also for use in fan nozzles (fan-shaped spray water jet guaranteed down to –15 °C).

- ➔ No ice formation during windscreen wiping
- ➔ Icing on the windscreen is penetrated and thawed fast
- ➔ Varnishes, polycarbonate, rubber- and plastic parts of the car body are not pitted

### Windscreen Cleaner –60 °C




	<b>F00101</b> 1000 mL plastic bottle
	Trading unit: 20 x 1000 mL (1 box)
	<b>F00501</b> 5 L jerrycan
	<b>F03001</b> 30 L jerrycan
	<b>F20001</b> 200 L drum

**Fields of use** • For the frost-free cleaning of windscreens and all plastic surfaces, inner motor parts and pipes of the vehicle

## Ice-Free –50 °C



### Ice-Free –50 °C

	<b>F01002</b> 10 kg pail
	<b>F02502</b> 25 kg pail
	<b>F10002</b> 100 kg drum




Long-term effect active granules that eliminate snow and ice fast and safely down to a temperature of –50 °C. With normal ice formation without new snowfall the thawing effect lasts up to three days. Due to its good adhering properties, the removal of ice and snow from ramps with inclination angles of up to 45° poses no problem whatsoever. Its slight acidity counteracts rust formation on metals and “acid rain” in the soil. With steel reinforcements laid in accordance with the rules (at least 2 cm deep in the concrete), adverse effects on concrete could not be ascertained.

Its 100% solubility in water prevents clogging in manhole covers, in the sewer system and sewage plants. It contains no urea, and according to an expert opinion rendered by Bielefeld University it is better compatible with plant growth than conventional gritting and salting media.

- ➔ Extremely efficient in the cold
- ➔ Especially rounded big granules prevent injuries to animal paws
- ➔ Gentle on marble and synthetic floors

For the thawing of thick coats of ice on perpendicular surfaces (e.g. refrigerated vehicles)

### Ice-Free –50 °C liquid

	<b>F01003</b> 10 L jerrycan
	<b>F03003</b> 30 L jerrycan
	<b>F12003</b> 120 L drum

**Fields of use** • Perfect for the removal of ice and snow on pavements and driveways of public and municipal facilities such as hospitals, old people's homes, public baths and agencies. Further fields of application are pubs, restaurants, and hotels as well as the entry areas and loading ramps of all industry sectors.

- Can also be used for the drying of damp rooms and caravans because the active granules absorb humidity from the air

## Algae STOP

Effective and economical **remover** of algae and green coating on concrete, earthenware, ceramics, tiles, timber, asphalt, and natural stone (recommended dilution: 200 ml in 10 litres of water) with disinfecting long-term effect.

- ➔ Not subject to mandatory labelling in accordance with the EU Directive
- ➔ Effectively eliminates the danger of slipping caused by slippery green coating

**Fields of use** • On roofing made from glass, plastics, bitumen, clay roof tiles, concrete roof tiles, sheet metal, and thatched roofs

- On walls made from clinker bricks, fine plaster, timber, plastics and sheet metal coating
- On pavements/footpaths, terraces, and pool edges



### Algae STOP

- ➔ **A90191** 1000 mL plastic bottle  
Trading unit: 12 x 1000 mL (1 box)
- ➔ **A91091** 10 L jerrycan
- ➔ **A93091** 30 L jerrycan
- ➔ **A20091** 200 L plastic drum

**Please note:**  
Use biocide products safely!

**Please note:**  
On marble please perform a compatibility test!

## Algae STOP Fish

For the **preventive treatment** of ponds and lakes with intense algae growth. **Natural micro-organisms** reduce the organic load by means of biodegradation and increase the self-healing power of the pond. Organic substances are decomposed and are thus no longer available as a basis for algae growth.

- ➔ Not subject to mandatory labelling in accordance with the EU Directive
- ➔ Inhibits algae growth – reduces sludge deposits
- ➔ Free from biocides – non-hazardous to aquatic animals and plants



**Fields of use** • Wherever animals and humans get in contact with the water



### Algae STOP Fish

- ➔ **A00115** 1000 mL plastic bottle  
Trading unit: 12 x 1000 mL (1 box)
- ➔ **A01015** 10 L jerrycan
- ➔ **A03015** 30 L jerrycan
- ➔ **A20015** 200 L plastic drum

## SOFT TEXT

**Ready-to-use, water-based protective solution** for the preventive treatment of textiles (e.g. fabrics and awnings) as protection against moss- and green coatings. Prevents water from penetrating and adhering to tissues, thus effectively inhibiting growth of algae and moss. At the same time, grime and dirt cannot adhere and are rinsed by run-off water.

- ➔ Water- and dirt-repellent, fast-drying
- ➔ Not subject to mandatory labelling in accordance with the EU Directive

**Fields of use** • For tents, awnings, tarpaulins, sunshades, woven chairs and tables, etc.



### SOFT TEXT

- ➔ **B20017** 200 L plastic drum

**Tip:**  
We recommend bio-chem HARD TEXT for protecting mineral surfaces.  
We would like to send you further informations on request!

**Tip:**  
Repeat treatment after heavy rainfall!





# Accessories

We also offer the following accessories for easy use of the bio-chem products:



So as not to lose one single drop – taps for the containers guarantee fast and easy refilling of the hand-held spray bottles. The 200 L drum can also be drained by means of a tap or a drum pump.

## Tap



- H00003** for 5 l and 10 L jerrycans
- H00004** for 30 L jerrycans
- H00015** for 200 L drums

## Stainless steel hand-operated pump



- H00006** for 200 L drums  
(discharge 0.6 l hoist)  
Standard drum thread 2"

## Plastic hand-operated pump

- H00007** for 200 L drums  
(discharge 0.3 l hoist)  
Standard drum thread 2"

## Thread adapter for hand-operated pump

- H00008** for thread equalization with plastic drum



**Spray nozzles:**  
The spray nozzles guarantee an evenly spread fine distribution of the bio-chem products.

## Pump spray nozzle

- H25012** for 250 mL plastic bottle

## Spray nozzle

- H00014** with 0.4 mm brass nozzle  
for 500 mL plastic bottle
- H50012** with 0.4 mm plastic nozzle  
for 500 mL PET bottle
- H00005** with 0.4 mm brass nozzle  
for 600 mL aluminium bottle
- H00112** with 0.6 mm plastic nozzle  
for 1000 mL plastic bottle

## Big Blaster spray nozzle

- H50212** for 500 mL PET bottle



We'll be pleased to provide you with information about further accessories, such as jerrycans, drums, IBCs.



**Hand-held bottles with triggers for an efficient application of the bio-chem products are available in the following versions:**

**For the determination of the concentration of the cleaning bath and to check the surface cleanliness we recommend:**



### Bottle with trigger

- H00001** 500 mL  
Sprayer with 0.4 mm brass nozzle
- H00101** 1000 mL  
Sprayer with 0.6 mm nozzle

### PET bottle with trigger

- H00033** 500 mL  
Sprayer with 0.4 mm nozzle



### Pressure pump-action spray bottle

- H10001** 1.5 L

### Aluminium bottle with trigger

- H00002** 600 mL  
Sprayer with 0.4 mm brass nozzle



### Titration Kit small

- H00107** consists of:
- burette
  - 100 mL measuring cylinder
  - indicator solution (20 mL dropper bottle)
  - Erlenmeyer flask
  - 1 N hydrochloric acid (to determine alkaline media) or 1 N sodium hydroxide solution (to determine acidic media)

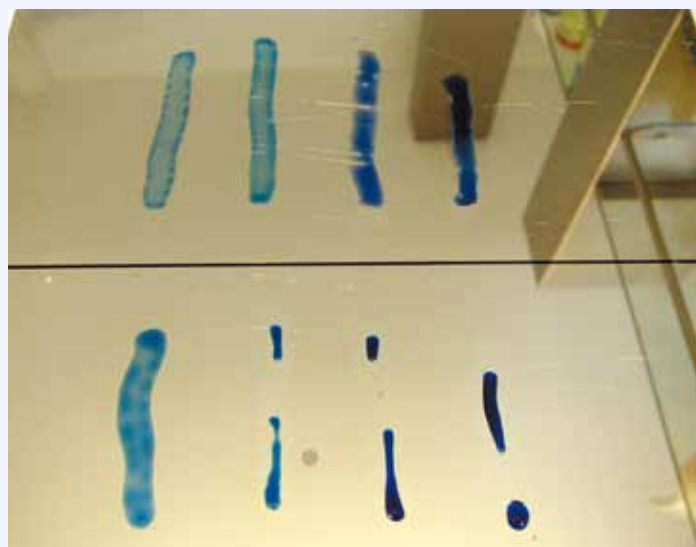


### Titration Kit big

- H00207** consists of:
- Identical with Titration Kit small, plus pH-meter

### Test ink

- H00307** 28 - 48 mN/m





You are in charge of occupational health and safety in your company? You are working with hazardous substances in your company? The following laws are important for you!



**Factories Act (ArbSchG)**

A law that governs the implementation of occupational health and safety measures in order to improve workplace safety and health protection of employees at work. According to the Factories Act the employer has to implement all necessary measures that guarantee and improve workplace safety and health protection of employees at work. For this, he/she has to assess the health hazards existing at the workplace. Risk assessment is the prerequisite for the implementation of target-oriented, effective and cost-efficient occupational health and safety measures. The employer has to instruct the employees regarding health hazards and protective measures.

**Ordinance on Industrial Safety and Health (BetrSichV)**

The Ordinance on Industrial Safety and Health governs the provision of work equipment by the employer, the use of said equipment at work by the employee, and the operational safety of systems requiring monitoring. It includes an extensive protective scheme that can be applied to all hazards posed by work equipment.

**Youth Employment Protection Act (JArbSchG)**

The Youth Employment Protection Act is a law designed to protect children and juveniles in the working environment. It aims at protecting children and juveniles from overwork. For instance, juveniles may not do any work that exposes them to the detrimental effects of hazardous substances as defined in the Chemicals Act.

**REACH Registration (Evaluation and Authorization of Chemicals)**

REACH stands for Registration, Evaluation and Authorization of Chemicals. In future, about 30,000 substances available in the European market will be registered with the new European Chemicals Agency (ECHA) in Helsinki. Manufacturers and importers have to develop measures for the safe use of their substances and communicate them to their customers. Substances of very high concern will undergo a rigorous authorization procedure. The Chemicals Agency will make non-confidential information on substances and related risks accessible in an Internet database. In future consumers will be entitled to information as to whether products contain any substances of very high concern.

**Chemicals Act (ChemG)**

The Chemicals Act is a law for the protection from hazardous substances on the territory of the Federal Republic of Germany. It is part of the law on chemicals. The details of the protective measures are established in ordinances, such as the Ordinance on Hazardous Substances, and in technical rules. In the Chemicals Act numerous EU directives are transposed into German law. This is particularly true for regulations in addition to the REACH Regulation.

**Technical Rules for Hazardous Substances (TRGS)**

These rules represent the status quo of safety-related, occupational health-, hygienic and ergonomic requirements for the putting into circulation and handling of hazardous substances. They are established by the Committee for Hazardous Substances (AGS) and serve to substantiate the regulations of the Ordinance on Hazardous Substances. Upon publication in the "Bundesarbeitsblatt", a journal published by the German Federal Ministry of Labour and Social Affairs, implementation of the TRGS is compulsory.



Regulation on GHS:

health hazards

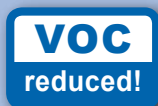


physical hazards



environmental hazards





The bio-chem labelling

## Ordinance on Hazardous Substances

The Ordinance on Hazardous Substances (Gefahrstoffverordnung – GefStoffV) sets out the provisions for protective measures for employees when handling hazardous substances. Hazardous substances are substances, mixtures, or products that exhibit certain physical or chemical properties, such as highly flammable, toxic, caustic, or carcinogenic. This means that under EC law these substances are placed in at least one category of danger. Based on the labelling of the hazardous substance, working with hazardous substances falls into four protection level categories (protection level concept):

### ➡ Protection level 1

Minimum measures. Applies to irritant (Xi), noxious (Xn), and caustic (C) hazardous substances at low exposure if the level 1 protective measures (TRGS 500) suffice.

### ➡ Protection level 2

Standard protection level for the handling of hazardous substances. Applies additionally to the same hazardous substances as above in case of higher exposure if the results of a risk assessment show that protection level 1 does not suffice any more. Level 2 protective measures include, but are not limited to, substitution of hazardous substances. Dispensation with substitution has to be accompanied by a reasoned statement. If substitution is not possible, special protective measures have to be taken.

### ➡ Protection level 3

Applies additionally in case of handling toxic (T) and very toxic (T+) hazardous substances.

### ➡ Protection level 4

Applies additionally if carcinogenic, mutagenic, or fertility-damaging hazardous substances (category 1 or 2) are used.

**Risk assessment has to be carried out by the employer before commencing the activity, and must subsequently be updated in case of significant changes in working conditions.**

## VOC Directive

The solvent regulation/VOC directive (31. BImSchV, 1999/13/EC) limits the emission of volatile organic compounds resulting from the use of organic solvents in certain activities and installations. This applies above all to enterprises that use organic solvents in surface cleaning, coating, varnishing, dry-cleaning, and printing, or in the manufacturing of coatings, adhesives, and pharmaceuticals. Emission limit values are laid down for all plants covered in the regulation, namely for the discharge by means of a smokestack, and also for fugitive emissions through windows, doors, and exhaust systems. The plant operator has to set up the plant in such a way that the emission limit values laid down will be observed. Instead of complying with these limit values a reduction scheme may be implemented. One can choose from three different reduction schemes. The application of the "Simplified Record", in which solvent contents are limited by using substitutes with maximum admissible solvent levels, is particularly interesting and simple in this context.

## Regulation on GHS (GHS = Globally Harmonized System), also called CLP Regulation (CLP = Classification, Labelling and Packaging of Substances and Mixtures).

It sets out the provisions for the classification, labelling and packaging of substances and mixtures. From 1 December 2010 substances, and from 1 June 2015 mixtures (formerly preparations), will have to be labelled in accordance with CLP; the new labelling may be used since 20 January 2009. However, the label may only be issued in accordance with one law, either the old or the new one. On the safety data sheet the old classification in accordance with regulations 67/548/EEC or 1999/45/EC will have to be stated until 1 June 2015, the new labelling may be given too.

**The most striking difference is the alteration of the identification symbols: instead of hazard symbols with black imprints on orange rhombuses there are now nine hazard pictograms. The existing St. Andrew's Cross (Xi, Xn) will be omitted and replaced by e.g. an exclamation mark. R- and S- (=Risk and Safety) statements will be replaced by H- and P- (=Hazard- and Precautionary) statements.**





The brand for innovative products in the surface technology sector

Bio-Circle Surface Technology GmbH is bio-chem – the brand that has been standing for the development, production and distribution of innovative chemical-technological products around surface technology for the better of 20 years.

Founded as a kind of garage start-up by graduate engineers Ulrich and Manfred Berens, over the years CB Chemie und Biotechnologie has developed into an internationally operating enterprise with approx. 110 employees in Germany. Branch offices and production sites have been established in Europe and the world; the distribution network in Germany has been expanded continuously. The company's constant presence at domestic and international trade fairs and exhibitions also helps promote innovative reactions to ideas and markets.



Ulrich Berens



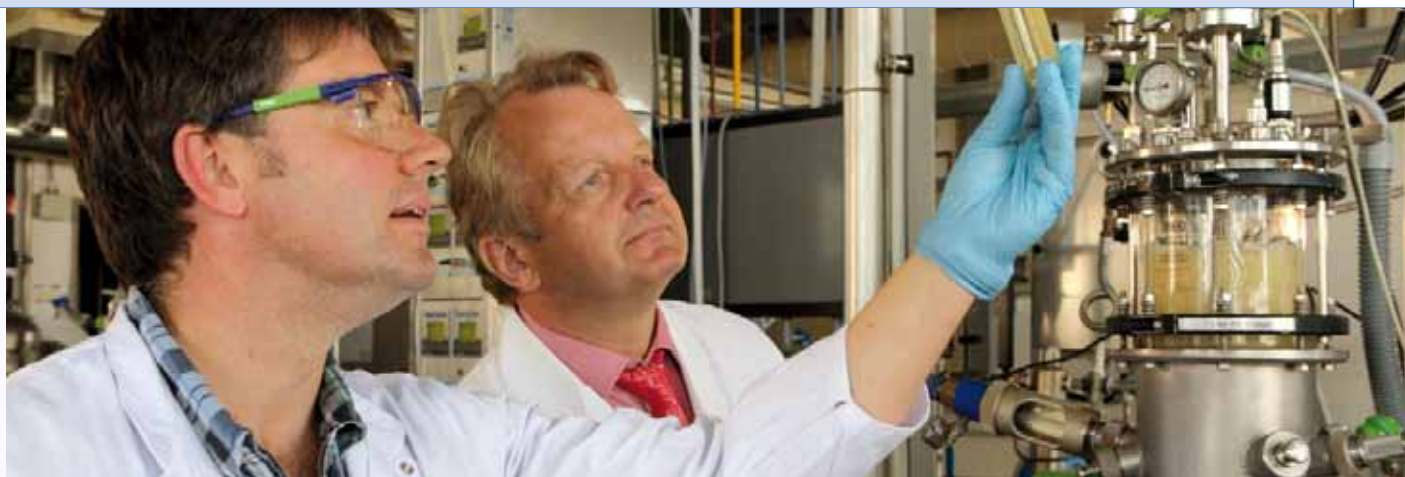
Manfred Berens

The first product segment was developed; it encompassed CHC-free servicing products tested and implemented in the metal industry of the region, and phosphate-free water-based cleaners. The introduction of the bio-chem brand name for all the company's products was followed by the first products for the newly added product segments Protecting, Lubricating, Welding, and Ice-free. The Cleaning Technology product line perfected the product range.



History:

- 1985** Foundation of CB Chemie und Biotechnologie GmbH in Verl by graduate engineers Ulrich und Manfred Berens under the name of Ingenieurbüro für Chemie und Biotechnologie
- 1987** The first employees are hired for production and office
- 1988** BIO-CHEM becomes the brand name for the manufactured products
- 1989** The first employees are hired for sales and marketing
- 1991** Change of the company's name into CB Chemie und Biotechnologie GmbH
- 1993** Erection of the company building in Berensweg in Gütersloh
- 1997** Establishment of branch offices in Gmunden, Austria, and Rotkreuz, Switzerland
- 2002** Commencement of business at the production sites in Montreal, Canada, and São Paulo, Brazil. These production sites supply the North- and South American market
- 2002** Expansion of the production area and the office building
- 2004** Commencement of business at the production site in Istanbul, Turkey. This production site supplies the market in Turkey and Iran.
- 2004** bio-chem Surface Technology is registered as a Word picture mark with the German Patent- and Brand Office
- 2005** Foundation of the branch office in Katowice, Poland
- 2006** Commencement of business at the production site in Coimbatore, India. This production site supplies the market in India and the United Arab Emirates.
- 2008** Foundation of the branch offices in Targu Secuiesc, Romania, and Brno, Czech Republic
- 2009** Takeover of the SEPRO Umwelttechnik Handelsgesellschaft m.b.H. & Co. KG by CB Chemie und Biotechnologie Ges.m.b.H. in Austria, and foundation of the bio-chem Surface Technology GmbH in Linz
- 2010** The German CB Chemie und Biotechnologie GmbH is renamed Bio-Circle Surface Technology GmbH. The branch offices in Switzerland and Austria also change names to Bio-Circle Surface Technology AG (Switzerland), and Bio-Circle Surface Technology GmbH (Austria).



We are working on future-oriented projects and tasks in the fields of “environmental protection”, “biotechnology” and “surface chemistry” with an in-house R&D department and in cooperation with the University of Bielefeld. The points of departure for these scientific works and developments are the customers’ concerns and the issues of tomorrow’s market. So, over the past few years we have been focussing on the development of alternative cleaning agents, with VOC (volatile organic compounds = solvents) reduction being our medium- and long-term objective.

**“Reducing solvents over the next few years will be the greatest challenge for us and for our customers,”** says Birgit Große, Managing Director Germany.

CB Chemie und Biotechnologie GmbH was renamed Bio-Circle Surface Technology GmbH in 2010. Also the branch offices in Switzerland and Austria use the new company name. Against the background of our internationally oriented corporate strategy this change of names enables us to design and strengthen our know-how globally.

**“The advantages of regional proximity remain, with the added value of know-how from global markets,”** says Andreas Hüttner, Managing Director Bio-Circle Surface Technology GmbH, Linz/Austria



## Bio-Circle, Urine Attack, and New Fresh Air

### have been awarded the “Produkt-Prädikat”

Only members of the Umwelt-Initiativen der Wirtschaft [Environment Initiatives of the Economy] Ostwestfalen-Lippe are allowed to use the “Produkt-Prädikat” [product quality distinction]. CB Chemie und Biotechnologie GmbH, now Bio-Circle Surface Technology GmbH, has been a member of the Environment Initiative since 1992. The members have committed themselves to complying with the following Environment Codex and other requirements. The principles of the Environment Initiatives of the Economy in Ostwestfalen-Lippe are:

- ➔ Integration of environmental protection as an essential corporate task in the mission statement of the enterprise. Commitment to the Environment Codex and implementation of an environmental officer
- ➔ Information and motivation of staff to promote environmentally conscious behaviour
- ➔ Continuous improvement of the environmental sustainability of products and manufacturing processes
- ➔ Voluntary effort to avoid, reduce and recycle the amounts of waste and emissions, involving all members of staff in the process







# BIO-CIRCLE on the road

**We put the BIO-CIRCLE parts washer into motion – and it comes directly to your door.**  
 Get an idea on site and assure yourself of the functionality, its excellent cleaning performance paired with best possible user- and environmental protection. Examine the high-quality workmanship and optimized ease of use, and compare your demands on a parts washer to the BIO-CIRCLE parts washer.  
 Experience the BIO-CIRCLE parts washer at first hand during an application test on your premises.  
**Rent a BIO-CIRCLE?** You are also welcome to rent the BIO-CIRCLE.  
 For detailed renting terms and conditions please call the phone number below.

**Are you interested? We'll be happy to make an appointment with you.**

**Telephone: +49(0)5241 9443-0**

**E-mail: [service@bio-circle.de](mailto:service@bio-circle.de)**



# BIO-CIRCLE Service and cleaning

**Good to know that you can rely on us.**

Just like your car, also the BIO-CIRCLE requires regular cleaning and servicing in order to guarantee the optimal functioning of the device.  
 We are pleased to offer you a special service:

- Thorough internal and external cleaning of the BIO-CIRCLE with environmentally compatible bio-chem products
- Checking your device for the functionality of the installation parts
- Cleaning and replacing if necessary of aerator, hoses, filter inserts, pump, etc.
- Cleaning of the BIO-CIRCLE Liquid by means of a fine mesh filter
- Removing the sludge residues from the bottom
- Refilling with the cleaned BIO-CIRCLE Liquid and, if necessary, topping up with fresh BIO-CIRCLE Liquid to the optimum filling level

**We'll be happy to inform you if this service is available in your country!**



# BIO-CIRCLE Parts cleaning in new dimensions

## The advantages at a glance

Aqueous-based biological parts cleaning with natural micro-organisms. Oils and greases are immediately decomposed ecologically, which guarantees long lifetimes with a constantly high cleaning performance.

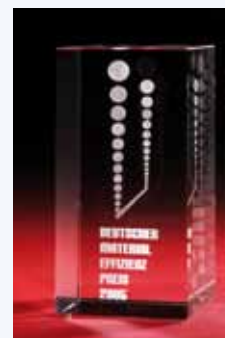
- ➔ No solvents, no cold cleaners
- ➔ Aqueous cleaning medium, no fire hazard
- ➔ No hazardous substance and no hazardous materials, hence no special regulations for storage, handling and transportation

[www.bio-circle.com](http://www.bio-circle.com)







## BIO-CIRCLE: Distinguished!

For its simple and eco-friendly cleaning method that optimally combines mechanics, temperature, chemistry and nature, the BIO-CIRCLE parts cleaner was awarded the "Effizienz-Preis NRW 2005" [Efficiency Award North Rhine-Westphalia] in the "Product" category, and the Deutscher Materialeffizienzpreis des Bundesministeriums für Wirtschaft und Technologie [German Material Efficiency Award of the Federal Ministry of Economics and Technology].



## Comparison between a conventional parts cleaner with cold cleaner and BIO-CIRCLE

	Parts cleaner with cold cleaner	BIO-CIRCLE BIO-CIRCLE L
<b>What happens in case of increased pollution input?</b>	Saturation of the rinsing solution Deterioration of cleaning performance	Results remain the same over the entire period 😊
<b>What contaminations can be removed?</b> Organic, unpolar (greases, oils) Inorganic, polar (salts) Inorganic, unpolar (chippings, dust)	Excellent Modest Modest	Excellent Excellent Good 😊
<b>What materials can be cleaned?</b> Stainless steel Steel Aluminium Non-ferrous metals	Excellent Excellent Excellent Excellent	Excellent Excellent Excellent Excellent 😊
<b>Occupational safety and health</b>	  	



Impairments to health (Source: Gefahrstoffe Kaltreiniger, M043, 02/2007, BG Chemie))	Parts cleaner with cold cleaner	BIO-CIRCLE BIO-CIRCLE L
Nerve damage	Toluene, xylene, trichloroethylene, n-hexane, petroleum ethers (hexanal isomers, pentane, heptane, octane)	None 😊
Skin damage	Yes	None 😊
Liver damage	Methylene chloride, trichloroethylene, toluene, xylene, methanol, ethanol	None 😊
Kidney damage	Trichloroethylene, petroleum, fuel mixtures, hexane, heptane, toluene, xylene, alcohols	None 😊
Blood cell damage	Toluene, benzene	None 😊
Mutagenic and fecundity-endangering effects	Organic solvents	None 😊
Carcinogenic effects	Benzene	None 😊



## Our lab service

We offer assistance in the optimization of your cleaning tasks, from choosing the cleaning chemistry to cleaning technology – in a practice-oriented and competent way. We carry out cleaning tests for you – and with you if you like – in our Technology Centre in Gütersloh. The cleaning tests are logged, and upon completion of the tests the cleaning log, together with our suggestions for solutions, will be made available to you. We will then assist you in your plant in the practical implementation of these results – from installing the system to integrating it in your production process.

But our work for our customers goes even further. In our chemistry- and biotechnology labs our committed staff takes care of your specific questions, thus ensuring optimal customer care. In addition to the telephone hotline for all questions around surface technology, we provide services in our labs for you, such as checks of cleaning bath samples – chemical and/or microbiological parameters – including log compilation, preparation of titration- and neutralization curves, compilation of customized quality certificates, development of operating instructions, development of customer-specific products.

**Benefit from our know-how for your task! Lab hotline +49 (0)5241 9443-41**



### The customer- and market-specific range is completed by comprehensive service:

- ➔ Solution of your specific cleaning- and application problems by means of personal and competent consulting given by our field staff on site or in our application centre in Gütersloh
- ➔ Product training for dealers and user trainings at the BIO-CIRCLE Academy
- ➔ High product quality, high cost-effectiveness and minimum delivery times
- ➔ Support for compliance with regulations (e.g. VOC reduction, substitution of hazardous substances)

Customer service, quality, innovations and competence are the cornerstones of Bio-Circle Surface Technology and guarantee future success.

**If you have any questions or require additional information, please feel free to contact us via telephone, fax or e-mail.**

**We're looking forward to offering you advice and support.**

## Any questions?

**Telephone: +49 (0)5241 9443-0**

**Fax: +49 (0)5241 9443-44**

**E-mail: [service@bio-circle.de](mailto:service@bio-circle.de)**





# Our bestsellers

page



## UNO W *clean@work*



10

An aqueous alkaline cleaner for the cleaning and degreasing of machines, tools, workshop equipment and vehicles. Material-conserving and non-abrasive. Compatible with oil separators – fast-separating in the sewage; tested in accordance with ÖNORM B5105. Contains neither AOX compounds nor solvents or phosphates. Effectively removes oil, grease, resin, wax, nicotine, soot, bitumen- and tar spatter etc.



## E-NOX Shine *INOX-TOP*



22

Highly effective special product for the fast and easy cleaning and maintenance of tarnished and polished stainless steel. The creamy emulsion removes dust, fingerprints, oil and light limescale- and flash rust residues. Fast drying, leaves a glossy protective film with good film strength. Contains no solvents and no silicone. NSF-registered (NSF = Nonfood Compounds Program), i.e. can be employed in near-food applications.



## E-WELD 3 *fun@welding*

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Welding is fun with this innovative blue welding protection spray from bio-chem. E-WELD 3 contributes to optimal welding by preventing weld spatter from sticking. It is ready for use, silicone-free and economical. E-WELD 3 proves itself in practice again and again day after day. Fields of application: automotive industry, vehicle construction, metal construction and metalworking shops, steelwork, extraordinary construction, container- and vessel construction, railing construction, shipyards, and wherever welding is required.



## UNO S *Bio General Purpose cleaner "S"*



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Aqueous intensive cleaner that removes resinous and burnt-in oils and greases, pigment colours, and other residues, also from large surfaces. For manual and mechanical use. Highly concentrated, can be diluted in water up to 1:40.

An effective alternative to solvents. Its excellent dissolving performance already achieves optimal cleaning results at ambient temperature.



## FT 200 *Final Touch Coating*



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Fast drying aqueous cleaner. Removes processing oils, anti-corrosion oils, light waxes and other residues from parts before varnishing with conventional or water-soluble varnishes or with powder coatings. Is not subject to VOC regulations. Contains corrosion inhibitors that guarantee temporary corrosion protection. Ready for use – just spray it on and wipe it off with a cloth.



# **BIO-CIRCLE®** **worldwide**

Developing international markets requires the consistent implementation of a forward-looking corporate structure. We attach great importance to personal service and qualified application-specific consulting, which is why we promote our employees' training at a high level. Over the years we have created an efficient team that is fully aware of our customers' requirements and finds innovative solutions for the most diverse application fields thanks to continuous optimization. Our presence in Europe and the world enables us to identify our customers' wishes early on, so that we can react in a fast and flexible manner to the different needs.



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## **Bio-Circle Surface Technology GmbH**

Berensweg 200  
D-33334 Gütersloh  
Telephone: +49 (0)5241 9443-0  
Telefax: +49 (0)5241 9443-44

E-mail: [service@bio-circle.de](mailto:service@bio-circle.de)  
[www.bio-circle.de](http://www.bio-circle.de)