Akem
Kimya San. ve Tic. Ltd. Şti.

CATALOGUE 2026

PICKLING · PASSIVATION · NEUTRALISATION

METOX®

Weld cleaning, pickling, passivation and surface treatment chemicals for stainless steel.



PRODUCT RANGE · IN PROCESS ORDER

METOX
DGR-02
Degreasing

METOX
M-1000
Immersion pickling

METOX
S-3000
Spray pickling

METOX
W-2000
Pickling paste

METOX
P-3000
Passivation

METOX
H-3000
Acid-free passivation

METOX
N-3000
Neutralisation

METOX
AS-05
Anti-spatter

Pre-cleaning · Pickling · Passivation · Neutralisation · Pre-welding

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PRODUCT RANGE

ASTM
A380 · A967

304 · 316
DUPLEX AND HIGH ALLOY

Local
PRODUCTION IN TÜRKIYE

METOX

Restore the corrosion resistance of stainless steel

METOX is a professional range of chemicals developed to remove oxides, heat tint and surface contamination formed on stainless steel after welding, cutting, grinding and blasting, and then to re-passivate the surface.

What is the passive layer?

What makes stainless steel stainless is a chromium oxide layer only a few nanometres thick, formed by chromium and atmospheric oxygen. Welding heat damages this layer and leaves blue–purple–yellow heat tint in the weld zone.

Why does it matter?

The tinted zone is depleted in chromium and has lower corrosion resistance than the rest of the material. In food, pharmaceutical, chemical and seawater applications, rusting starts here first.

The METOX range



METOX DGR-02

Concentrated Oil, Dirt and Surface Cleaner



METOX M-1000

Stainless Steel Pickling Bath Acid



METOX S-3000

Stainless Steel Pickling Spray



METOX W-2000

Weld Cleaning Paste



METOX P-3000

Stainless Steel Passivation Liquid



METOX H-3000

Acid-Free Stainless Steel Passivation Liquid



METOX N-3000

Neutralisation Liquid



METOX AS-05

Anti-Spatter Liquid

Gel · Liquid	Immersion	ASTM	AMS 2700
SPRAY · PASTE	BATH PROCESSES	A380 · A967	PASSIVATION

PROCESS

Pickling, passivation and the complete surface process

	Pickling	Passivation
What it does	Removes oxides, tint and contamination	Accelerates re-formation of the chromium oxide layer
Chemistry	Mixed acids	Nitric acid, citric acid or hydrogen peroxide based
Visual effect	Removes tint, uniform matt surface	No visual change
Removes metal	Yes, at micron level	No
METOX product	S-3000 · M-1000 · W-2000	P-3000 (on request DGR-02 · H-3000)

Example process for a welded stainless tank

Step	Operation	Product	Note
1	Degreasing	METOX DGR-02	Acid does not work on oily surfaces
2	Rinsing	Water	
3	Pickling	METOX S-3000 / M-1000 / W-2000	Selected by method
4	Dwell	—	By material, soiling and temperature
5	High-pressure rinse	Water (100–150 bar)	
6	Passivation	METOX P-3000	On request: DGR-02 (citric acid) or H-3000 (acid-free)
7	Rinsing	Water	
8	Neutralisation	METOX N-3000	Surface and waste water, with pH control
9	Drying	—	Clean compressed air or natural

SELECTION GUIDE

Which METOX for which job?

The application method is selected according to part size, geometry and production volume. The table below helps you find the right product quickly.

Product	Function	Application	Packaging
METOX DGR-02	Oil, grease and dirt removal; citric acid passivation; maintenance	Spray, brush, immersion, ultrasonic	30 kg · 1,000 kg IBC
METOX M-1000	Immersion pickling	Bath	60 kg · 1,000 kg IBC
METOX S-3000	Spray pickling of large surfaces	Spray	20 kg
METOX W-2000	Spot pickling of welds	Brush (paste)	2 kg · 30 kg
METOX P-3000	Nitric acid passivation	Spray, immersion, brush	30 kg · 1,000 kg IBC
METOX H-3000	Acid-free (H_2O_2) passivation	Spray	30 kg · 1,000 kg IBC
METOX N-3000	Surface and waste water neutralisation	Mixing, pH control	30 kg · 1,000 kg IBC
METOX AS-05	Weld spatter prevention	Spray	30 kg · 1,000 kg IBC

Pickling by method

Immersion · M-1000

The entire part is treated uniformly at once; for complex geometry, inner corners and pipe interiors.

Spray · S-3000

Fast, uniform application on large surfaces such as tanks, vessels and large structures.

Paste · W-2000

Does not run on vertical and overhead surfaces; the most practical way to clean only the weld area.

Electrochemical alternative: For spot work and on-site repairs, METOX 500 / 600 weld cleaning machines clean and passivate in a single step.

CONCENTRATED OIL, DIRT AND SURFACE CLEANER

METOX DGR-02

METOX DGR-02 is a high-performance, phosphoric and citric acid-based concentrated cleaner developed to remove heavy oil, grease, carbonised dirt, superficial rust, tea staining, limescale and industrial residues from metal and especially stainless steel surfaces. Thanks to its citric acid content, it also passivates the stainless steel surface during cleaning.

- **Highly effective formula:** Dissolves the most stubborn oil, grease and carbonised dirt without leaving residues.
- **Citric acid passivation:** Passivates the stainless steel surface in the same step as cleaning.
- **Pre-cleaning:** Removes oil and organic dirt before pickling so that the acids penetrate the surface more effectively.
- **Maintenance cleaning:** Removes stains caused by sea water, tea staining, rain water, limescale and road salt.
- **Non-flammable, biodegradable and economical:** Used diluted with a high proportion of water.



Packaging

Metox DGR-02 is supplied in 30 kg drums and 1,000 kg IBC polyethylene containers.

Technical properties

Property	Value
Product type	Acidic concentrated oil, dirt and surface cleaner
Appearance	Clear liquid, colourless
Relative density (20 °C)	≈ 1.05 – 1.10 g/cm³
pH (concentrate)	< 2
Flash point	Not applicable (non-flammable)
Solubility in water	Fully miscible
Dilution ratio	1/1 – 1/5 (product/water)
Reaction time (20 °C)	15 – 30 minutes
Shelf life	Max. 2 years at room temperature

Application

1. Dilute Metox DGR-02 with water at a ratio of 1/1 to 1/5 depending on the condition of the surface. It is applied by spraying or brushing.
2. Spray the product evenly over the entire surface.
3. The typical reaction time is 15–30 minutes at 20 °C. An additional spraying may be required for stubborn oil; mechanical brushing with a nylon brush also helps.
4. Rinse off the residues with a high-pressure water jet. Use deionised water for the final rinse of sensitive surfaces.

Recommended process for surface protection: A subsequent passivation treatment (Metox P-3000 is recommended; Metox H-3000 where acid-free passivation is required) on stainless steel surfaces after cleaning with METOX DGR-02 increases surface resistance and, according to practical experience, can extend the next maintenance interval by up to three times.

STAINLESS STEEL PICKLING BATH ACID

METOX M-1000

METOX M-1000 is an immersion acid specially formulated to remove weld burns, heat oxides, rust stains, surface defects formed during cutting and blasting, and particles that weaken the chromium layer and cause corrosion from stainless steel surfaces.

- **Thorough cleaning:** Effectively removes all heat tint, oxidation and rust stains.
- **Passivation support:** Supports the formation of a new, uniform passive layer during and after treatment.
- **High compatibility:** Can be used at adjustable concentrations for different stainless steel grades.
- **Compliance with standards:** Complies with ASTM A-380 A.1 and BS CP-312.



Packaging

Metox M-1000 is supplied in 60 kg drums and 1,000 kg IBC polyethylene containers.

Technical properties

Property	Value
Product type	Stainless steel pickling (immersion) acid
Appearance	Clear liquid, colourless – light yellow
Odour	Pungent, acidic
pH	< 2
Flash point	Not applicable (non-flammable)
Solubility in water	Soluble
Dilution ratio	AISI 304, 316: 1/1 (product/water); 904L, 254 SMO, super duplex: undiluted
Immersion time	30 minutes – 4 hours
Standards	ASTM A-380 A.1, BS CP-312
Shelf life	Max. 2 years at room temperature

Application

1. After determining the mixing ratio, add water to the bath first, then Metox M-1000.
2. Pre-clean the parts with Metox DGR-02 to remove oil and dirt, then rinse with water.
3. Immerse the part in the bath.
4. Leave for 30 minutes to 4 hours depending on bath temperature, steel grade and bath conditions.
5. Wash off acid residues with a high-pressure water jet.
6. Analyse/check the bath content regularly to maintain the best bath composition and pickling result.

Passivation: To further improve the result, passivation after pickling is recommended. For passivation, Metox P-3000 is recommended; depending on customer requirements, Metox DGR-02 can be used for citric acid-based passivation and Metox H-3000 for acid-free passivation.

STAINLESS STEEL PICKLING SPRAY

METOX S-3000

METOX S-3000 is a sprayable pickling product specially developed to remove heat tint, oxide layers and mechanical marks formed during fabrication, cutting, welding and blasting of large stainless steel structures or equipment.

- **Large area application:** Easily applied to large and complex surfaces, reducing labour time and cost.
- **Effective cleaning:** Thoroughly removes weld burns, heat damage, rust and machining marks.
- **Passivation support:** Supports the re-formation of the chromium layer, restoring corrosion resistance.
- **Compliance with standards:** Complies with the requirements of ASTM A-380 A.1 and BS CP 312.



Packaging

METOX S-3000 is supplied in 20 kg drums.

Technical properties

Property	Value
Product type	Stainless steel pickling spray
Appearance	Pink, sprayable gel
Odour	Pungent, acidic
pH	< 1
Viscosity	Thixotropic
Flash point	Not applicable (non-flammable)
Solubility in water	Soluble
Reaction time (304/316)	60 minutes at 20 °C; 45 minutes at 30 °C
Standards	ASTM A-380 A.1, BS CP 312
Shelf life	Max. 2 years at room temperature

Application

1. Apply with an acid-resistant pump. First clean off oil and dirt with Metox DGR-02, then rinse with water.
2. Shake Metox S-3000 before use. Spray a thin, uniform layer over the entire surface.
3. For standard steel grades such as 304 and 316, the typical reaction time is 60 minutes at 20 °C and 45 minutes at 30 °C. The pickling time may vary with the condition of the surface.
4. Rinse off Metox S-3000 residues using a high-pressure water jet. Use deionised water for the final rinse of sensitive surfaces.

Passivation: To further improve the result, we recommend passivation after pickling. For passivation, Metox P-3000 is recommended; depending on customer requirements, Metox DGR-02 can be used for citric acid-based passivation and Metox H-3000 for acid-free passivation.

WELD CLEANING PASTE

METOX W-2000

Metox W-2000® is a pickling paste used to remove weld burns, stains caused by heat damage and layers that damage the chromium and lead to local corrosion from stainless steel surfaces, giving the metal a passive and attractive appearance. Suitable for AISI 304, 316, 321 and their derivatives.

- **Spot application:** Cleans only the weld area without treating the whole surface.
- **Non-drip:** Stays on vertical and overhead surfaces.
- **Passive, attractive finish:** Removes weld burns and heat stains and gives the surface a passive appearance.
- **Economical consumption:** 150–250 m of weld is cleaned with 1 kg of product.



Packaging

Metox W-2000® is supplied in 2 kg and 30 kg packages.

Technical properties

Property	Value
Product type	Weld cleaning (pickling) paste
Appearance	White paste
Odour	Pungent, acidic
pH	< 2
Viscosity	Thixotropic
Flash point	Not applicable (non-flammable)
Consumption	150 – 250 m/kg
Reaction time	10 – 15 minutes
Application temperature	Above +10 °C
Suitable steels	AISI 304, 316, 321 and derivatives
Shelf life	1 year

Application

1. Mix and shake METOX W-2000® before use.
2. Apply METOX W-2000® to the weld area with a brush.
3. Leave for 10–15 minutes (depending on temperature, steel grade and type of contamination). The temperature of the working area must be above +10 °C.
4. After pickling, remove paste residues with a high-pressure water jet or a stainless steel brush and finally clean with water. Waste water must be treated before disposal.

STAINLESS STEEL PASSIVATION LIQUID

METOX P-3000

METOX P-3000 is a special nitric acid-based passivation liquid used to restore the passive layer of stainless steel surfaces damaged by pickling or mechanical treatment (grinding, brushing, etc.) and to maximise corrosion resistance.

- **Passive layer formation:** Ensures fast and controlled re-formation of the chromium oxide layer (passive film).
- **Corrosion resistance:** Significantly increases corrosion resistance and provides long service life in aggressive environments.
- **Compliance with standards:** Complies with the ASTM A967 and AMS 2700 passivation standards.
- **Surface protection:** Removes metallic contamination (free iron) and minimises the risk of rusting.



Packaging

Metox P-3000 is supplied in 30 kg drums and 1,000 kg IBC polyethylene containers.

Technical properties

Property	Value
Product type	Stainless steel passivation liquid
Appearance	Clear liquid, colourless
Odour	Slight, characteristic
Relative density	1.20 kg/l
pH	≈ 1
Flash point	Not applicable (non-flammable)
Solubility in water	Fully miscible
Reaction time (room temperature)	20 – 30 minutes
Standards	ASTM A967, AMS 2700

Application

1. Apply Metox P-3000 with an acid-resistant spray pump, by immersion or by brush.
2. Apply the passivator evenly over the entire surface.
3. The typical reaction time for all stainless steel grades is 20–30 minutes at room temperature.
4. Rinse off Metox P-3000 residues using a high-pressure water jet. Use deionised water for the final rinse of sensitive surfaces.

ACID-FREE STAINLESS STEEL PASSIVATION LIQUID

METOX H-3000

METOX H-3000 is a hydrogen peroxide-based stainless steel passivation liquid for spray application that contains no nitric acid or citric acid. It removes free iron from the surface and accelerates passivation, enabling the protective chromium oxide layer of stainless steel to re-form.

- **Passive layer renewal:** Re-forms the passive layer damaged by grinding, brushing, blasting or in service.
- **Superior result after pickling:** Applied wet-on-wet, it reduces the risk of brown staining caused by free iron (smut).
- **Nitrous gas reduction:** Reduces the formation of toxic nitrous gases (NOx) during rinsing after pickling.
- **Prevention of water stains:** Prevents staining caused by poor-quality rinse water.
- **Safe and environmentally friendly:** Contains no nitric acid, rinse water is neutral; not classified as dangerous goods for transport.



Packaging

Metox H-3000 is supplied in 30 kg drums and 1,000 kg IBC polyethylene containers.

Technical properties

Property	Value
Product type	Acid-free passivation liquid (spray)
Active substance	Based on hydrogen peroxide
Appearance	Liquid, colourless
Odour	Pungent
Relative density (20 °C)	≈ 1.0 g/cm³
pH (20 °C)	6.5
Flash point	Not applicable
Solubility in water	Fully miscible
Reaction time	≈ 30 seconds after pickling; 3 – 5 minutes after mechanical treatment
Storage temperature	5 – 35 °C

Application

1. Apply Metox H-3000 with an acid-resistant spray pump.
2. After pickling, spray evenly “wet-on-wet” while the surface is still wet, before rinsing. After mechanical treatment, first clean the surface and rinse with water.
3. The reaction time is about 30 seconds after pickling and 3–5 minutes after mechanical treatment.
4. Rinse the surface with plenty of water. Use deionised water for the final rinse to obtain a residue-free surface.

NEUTRALISATION LIQUID

METOX N-3000

METOX N-3000 is a special neutralisation liquid used after acid cleaning (pickling) and passivation of metal surfaces to neutralise acid residues remaining on the surface and to bring the pH of the rinse water to a level compliant with environmental discharge standards.

- **Effective neutralisation:** Quickly and effectively neutralises acid residues on acidic surfaces and in rinse water.
- **Surface protection:** Prevents acid residues on the surface from causing corrosion and extends the life of the metal.
- **Environmentally compatible:** Adjusts the pH of waste water and allows discharge in line with environmental regulations.
- **Safe application:** Helps parts leaving acid baths to be handled safely and prepared for subsequent processes.



Packaging

Metox N-3000 is supplied in 30 kg drums and 1,000 kg IBC polyethylene containers.

Technical properties

Property	Value
Product type	Neutralisation liquid
Appearance	Clear liquid, colourless
Odour	Odourless
pH	> 11
Flash point	Not applicable (non-flammable)
Solubility in water	Fully miscible
Target pH (heavy metal precipitation)	≈ 9.5

Application

1. Collect the waste water in a neutralisation tank. Add Metox N-3000 to the rinse water while stirring.
2. Check the pH with pH paper. The best precipitation of heavy metals (Cr/Ni) is achieved at pH 9.5.
3. The neutralised clear water and sludge must be sent for disposal in accordance with local regulations.

ANTI-SPATTER LIQUID

METOX AS-05

Metox AS-05 is an effective anti-spatter agent that prevents hot weld spatter from adhering to the surface during welding. It provides excellent protection on stainless steel, carbon steel, galvanised steel and all other metal surfaces; when applied to the area to be welded, spatter does not stick and can be removed with a simple brush.

- **Aerosol-free:** 100 % liquid.
- **Non-flammable and odourless:** Provides a safe working environment.
- **Paintable:** Does not hinder painting and coating after welding.
- **Silicone-free:** Contains no ozone-depleting chemicals.
- **Wide compatibility:** Used on stainless steel, carbon steel, galvanised steel and other metal surfaces.



Packaging

Metox AS-05 is supplied in 30 kg plastic drums and 1,000 kg IBC containers.

Technical properties

Property	Value
Product type	Anti-spatter liquid
Appearance	Clear liquid, blue
Odour	Slight
Relative density	1.06
pH	6.5 – 7.5 (ASTM E70)
Freezing point	≈ –25 °C
Flash point	227 °C (Cleveland open cup)
Solubility in water	Miscible
Shelf life	Max. 2 years at room temperature

Application

1. Shake the product before use.
2. Apply a thin, uniform layer to the area to be welded by spraying.
3. The product can also be applied to the torch nozzle.
4. Welding can start immediately after application without waiting for the product to dry. After welding, spatter is easily removed with a brush.

RESPONSIBLE USE

Storage, handling and waste management

Storage

- Store indoors at room temperature in the original packaging.
- Keep containers tightly closed and upright.
- Protect from high temperatures (> 35 °C) and direct sunlight.
- Mix before use, as settling may occur during storage.

Application

- Wear safety glasses, gloves and work clothing during application.
- Use acid-resistant pumps and equipment.
- Ensure good ventilation of the working area.
- Refer to the product Safety Data Sheet (SDS) for details.

Waste water management

1 · Collect

Collect rinse water in a neutralisation tank.

2 · Neutralise

Bring the pH to 7–10 with METOX N-3000; heavy metals precipitate best at pH 9.5.

3 · Dispose

Dispose of clear water and sludge in accordance with local regulations.

Recycling

Empty HDPE containers can be recycled after cleaning in accordance with local regulations.

Bath control

Analyse immersion baths regularly to optimise product consumption.

Documentation

SDS and TDS are available in Turkish and English on request.



Field application: surface treatment of stainless process tanks

INDUSTRIES

Industries using METOX

METOX products are used with confidence on 304, 304L, 316, 316L, duplex and other stainless steel grades.



Textile industry: stainless steel dyeing machines

Food and beverage
Tanks, pipelines and process equipment

Textile and dyeing
Stainless dyeing machines and tanks

Pharma and chemical
Hygienic and corrosion-critical equipment

Machine building
Welded stainless structures

Energy and marine
Seawater and aggressive environments

Defence
High-quality fabrication

Architecture
Railings, facades and decorative stainless

Why METOX?

- Removes weld stains and heat tint
- Supports formation of the protective chromium oxide layer
- Gel, liquid, spray and paste formats
- Products compatible with ASTM A380, ASTM A967, AMS 2700 and BS CP 312
- One supplier from pre-cleaning to neutralisation
- Flexible packaging from drums to IBC tanks

Technical support

Our technical team supports you with process selection, bath preparation, application trials and waste water management.

Akem
Kimya San. ve Tic. Ltd. Şti.

We support you with your stainless steel surfaces.

Contact our technical team for product selection, process planning and delivery. Safety Data Sheets (SDS) and Technical Data Sheets (TDS) are available on request.

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