OXYGON

SWIMMING POOL · WATER TREATMENT · HEATING · COOLING



OxyGuard Mineral Protect

Metal Sequestrant for Swimming Pools

Operation & Use Manual

Oxygon Code: 111.10.15-10lt

Scan for pool chemicals

www.oxygon.gr

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1. Safety Warnings

Read these instructions carefully before every use of OxyGuard Mineral Protect. The product is **acidic and corrosive** and is intended **exclusively for professional users**. Always consult the label and the Safety Data Sheet (SDS) before application.

DANGER — CORROSIVE

Causes severe skin burns and eye damage (H314). Eye contact may cause irreversible injury. ALWAYS wear protective gloves, goggles/face protection and suitable protective clothing when handling the product.

HARMFUL IF SWALLOWED

Harmful if swallowed (H302). Do NOT induce vomiting. Eating, drinking and smoking are prohibited in the application area. Wash hands thoroughly after handling.

CORROSIVE TO METALS

May be corrosive to metals (H290). Do NOT store or decant the product in metal containers, funnels or pumps. Use only the original container or vessels made of compatible plastic.

DO NOT MIX WITH OTHER CHEMICALS

NEVER mix the product directly with chlorine, sodium hypochlorite, oxidising agents or alkaline products (e.g. pH plus). Mixing may cause a violent exothermic reaction and the release of hazardous gases. Each chemical must be added separately to the pool water.

DO NOT BREATHE SPRAY OR MIST

Do not breathe spray or vapours (P260). Ensure adequate ventilation in the storage and application area. In enclosed plant rooms, use local exhaust ventilation.

Required Personal Protective Equipment (PPE)

Hands	PVC gloves, 0.35 mm thickness, breakthrough time > 480 min (EN 374)
Eyes	Safety goggles with integral frame (EN 166)
Body	Chemical protective clothing, Cat. III (EN 13034)
Feet	Chemical-resistant safety footwear (EN ISO 20345)
Respiratory	Mask with type A2 filter, only where ventilation is inadequate (EN 140/405)

Note: The product is supplied with a child-resistant closure and a tactile danger warning triangle. Keep out of reach of children. For warranty terms see Section 14.

2. Product Description

OxyGuard Mineral Protect is a liquid metal sequestrant specifically formulated for swimming pool water maintenance. It binds the dissolved metal ions that enter the water and holds them in a stable, inert form, so that they cannot oxidise or deposit on the pool surfaces.

It is used both **preventively**, as part of routine weekly maintenance, and **correctively**, to treat existing metal stains and water discolouration.

Field of application

- Private and public swimming pools
- Hotel pools and spa facilities
- Pools filled from a borehole or well (high iron / manganese load)
- Pools with copper or brass fittings and heat exchangers
- Installations with older metal pipework

Available packaging

Oxygon code	111.10.15-10lt
Packaging	10 L plastic container
Trade name	OxyGuard Mineral Protect
Category	Salt & Deposits Removal

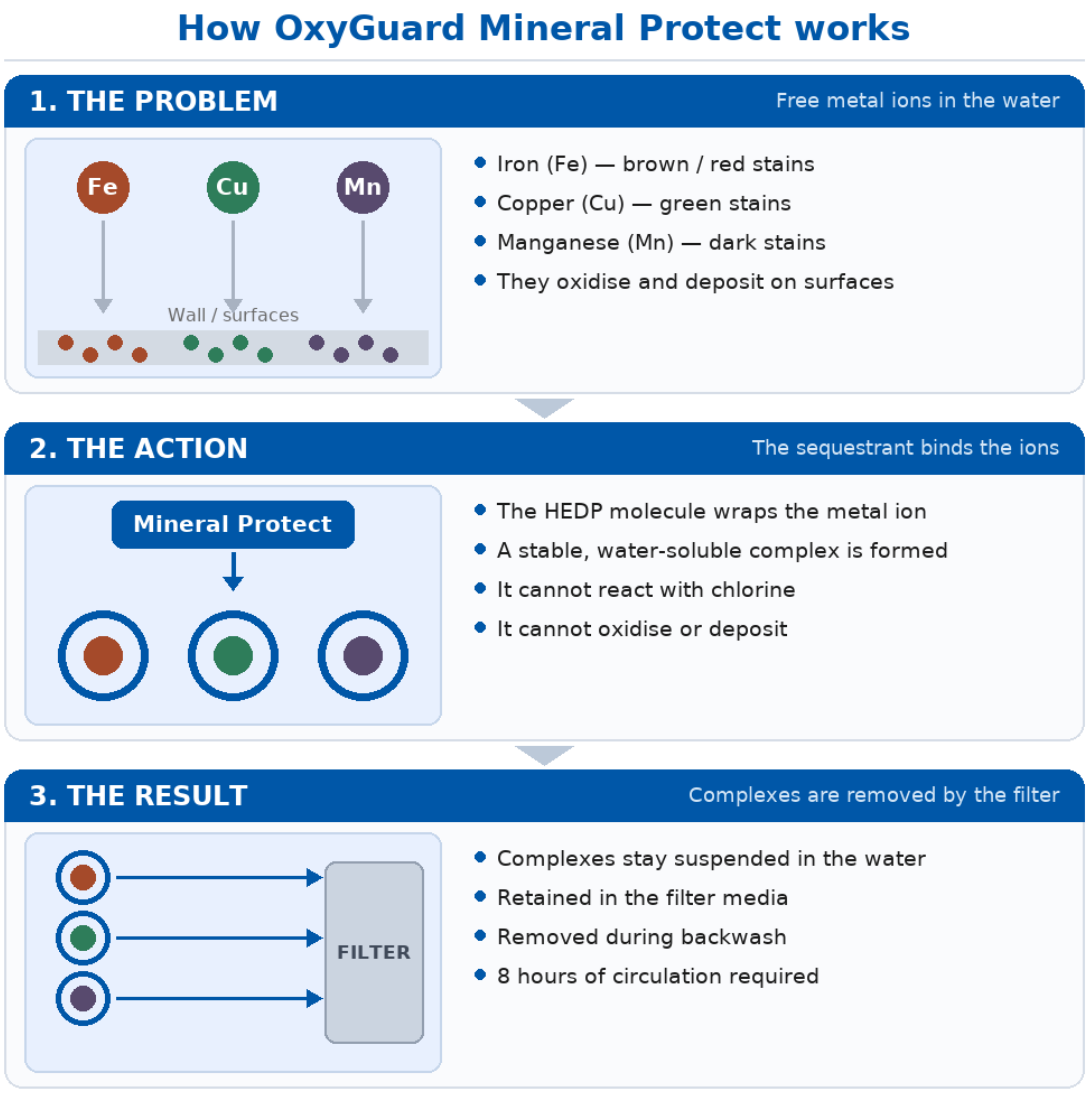
Note: The product is also available in smaller packaging on request. Contact the sales department for availability.

3. How It Works — Sequestration Mechanism

The active ingredient of the product is **etidronic acid (HEDP)**, a phosphonic compound with a strong affinity for metal ions. The molecule surrounds the metal ion and forms a stable, water-soluble complex.

While the metals are bound in this form, they **cannot react with chlorine and cannot oxidise**. Consequently, the insoluble oxides that cause the characteristic stains and water discolouration are not formed.

The complexes remain suspended in the water and are gradually removed by the filtration system. For this reason, the **circulation pump must run continuously** for at least 8 hours after application.



Mode of action: binding of metal ions and their removal through the filter

Important: The sequestrant does not remove the metals from the water — it renders them inert and carries them to the filter. Where the metal load is very high, partial water replacement is required alongside the chemical treatment.

4. When It Is Needed — Identifying the Problem

The colour of the staining indicates which metal is responsible. Correct identification helps determine the dosage and address the source of the problem.

Observation	Likely metal	Common source
Brown, rust or reddish staining	Iron (Fe)	Borehole water, old steel pipework, corroding fittings
Green or blue-green staining	Copper (Cu)	Copper heat exchangers, ionisers, low pH in the circuit
Black or dark brown staining	Manganese (Mn)	Borehole water, natural springs
Brownish water right after shock chlorination	Iron (Fe)	Oxidation of dissolved iron by chlorine
Greenish water with no algae present	Copper (Cu)	Oxidation of dissolved copper
Greyish discolouration of the liner	Manganese / Iron	Prolonged exposure without treatment

Metal oxidation is accelerated by chlorine and by rising pH. This is why staining frequently appears **immediately after shock chlorination** or after filling with borehole water.

Before treatment: Where possible, locate and correct the source of the metals (e.g. a corroding fitting, or low pH attacking a copper heat exchanger). Otherwise the problem will recur.

5. Technical Specifications

Form	Liquid
Colour	Colourless, clear
Odour	Odourless
pH (as supplied)	2 – 3
Specific gravity	1.2 (relative density)
Solubility in water	Fully soluble
Flash point	> 60 °C (not classified as flammable)
Active ingredient	Etidronic acid (HEDP), 25 – 50 %
CAS No.	2809-21-4
EC No.	220-552-8
UFI	XSN4-M01R-E00T-3CS3
Storage temperature	5 – 25 °C
Use category	Professional use only

CLP Classification — Regulation (EC) 1272/2008

Code	Hazard class	Hazard statement
H290	Met. Corr. 1	May be corrosive to metals
H302	Acute Tox. 4	Harmful if swallowed
H314	Skin Corr. 1	Causes severe skin burns and eye damage
—	Eye Dam. 1	Causes serious eye damage

Signal word: DANGER. The product is registered with the European Poison Centres Notification system (ECHA PCN) for Greece, Cyprus and Romania.

6. Dosage

Dosages are calculated on the basis of the **total water volume** of the pool. A distinction is made between the initial (start-up) dose and the maintenance dose.

Initial dose (first application)

Applied when the product is used for the first time in a given volume of water, after filling the pool or after a substantial water replacement: **2.5 litres per 100 m³**.

Maintenance dose

For preventive routine maintenance: **200 – 300 ml per 100 m³, at least once per week**. Where the water has a particularly high metal concentration (visible red, brown or green deposits), the dosage or the frequency of application may be increased.

Pool volume	Initial dose	Maintenance dose (weekly)
25 m³	625 ml	50 – 75 ml
50 m³	1.25 L	100 – 150 ml
75 m³	1.9 L	150 – 225 ml
100 m³	2.5 L	200 – 300 ml
150 m³	3.75 L	300 – 450 ml
200 m³	5.0 L	400 – 600 ml
300 m³	7.5 L	600 – 900 ml
500 m³	12.5 L	1.0 – 1.5 L

Volume calculation: For a rectangular pool, Volume (m³) = Length × Width × Average depth (in metres). For a circular pool, Volume = π × (Diameter ÷ 2)² × Average depth.

DO NOT EXCEED THE DOSAGE

Overdosing does not improve the result. Because of the low pH of the product (2–3), an excessive quantity can cause a sharp drop in the pH of the water, leading to corrosion of metal fittings and discomfort for bathers.

7. Application Instructions

NO BATHERS IN THE POOL

Application is carried out with the pool clear of bathers — with the water in place and the circulation pump running. Make sure nobody is in the water before adding the product. Bathers may return after 8 hours have elapsed and once the pH has been checked.

Step-by-step procedure

1. Put on the required PPE (gloves, goggles, protective clothing).
2. Confirm that there are **no bathers** in the pool.
3. Start the circulation pump and leave it running throughout the application.
4. Calculate the required quantity based on the pool volume (see Section 6).
5. Measure the quantity and **dilute it in at least three times its volume of clean water** in a plastic container. Always add the product to the water — never the water to the product.
6. Pour the diluted solution **around the perimeter** of the pool surface, so that it disperses evenly throughout the water volume.
7. Leave the circulation running continuously for **at least 8 hours**.
8. After 8 hours, **check and adjust the pH** of the water to 7.2 – 7.6.
9. Check the filter pressure. If it has risen by 0.3 – 0.5 bar above normal, perform a backwash.
10. Rinse the mixing container thoroughly and store the product as described in Section 11.

For pools with heavy existing staining, the initial dose may be repeated after 7 days, provided the pH and the condition of the filter have been checked beforehand.

Timing: Evening application is preferable, so that the required 8 hours of circulation coincide with night-time operation and the pool is available the following morning.

8. Compatibility with Other Chemicals

OxyGuard Mineral Protect is compatible with the usual pool maintenance chemicals, **provided they are added separately to the water and spaced apart in time**. Direct mixing of concentrated products is prohibited.

Product / Substance	Compatibility	Instruction
Chlorine (tablets, granular)	Yes, with time spacing	Add the chlorine at least 8 hours later
Sodium hypochlorite (liquid chlorine)	Yes, with time spacing	Never add simultaneously; never mix in the same container
pH minus (liquid)	Yes	Check the pH before and after — both lower the pH
pH plus (liquid)	Yes, with time spacing	Never mix — violent exothermic reaction
Clarifier / algaecide	Yes	Different day, or at least 8 hours apart
Flocculant	Yes, with care	Separately; flocculant requires still water, the sequestrant requires circulation
Active oxygen (OxyPool / OxySpa)	Yes, with time spacing	Minimum 8 hours apart
Anti-scale (Scale-X)	Yes	Complementary action — different target (calcium scale)
Strong oxidising agents	NO	Risk of exothermic reaction
Metal containers / equipment	NO	Corrosive to metals — use plastic containers only

SAFE PRACTICE RULE

One chemical at a time. Each product is diluted and added separately to the pool water with the circulation running. A minimum of 8 hours must be left between two different chemicals, with a pH check in between.

9. Water Testing & Maintenance

The effectiveness of the sequestrant depends directly on correct water balance and on the good condition of the filtration system.

Parameter	Target range	Test frequency
pH	7.2 – 7.6	Daily, and 8 hours after each application
Free chlorine	1.0 – 1.5 mg/L	Daily
Total alkalinity	80 – 120 mg/L	Weekly
Calcium hardness	200 – 400 mg/L	Monthly
Filter pressure	Up to +0.3 bar above baseline	Weekly

Filter maintenance

Because the bound metals are retained in the filter media, the filter is placed under greater load during treatment. Monitor the pressure and perform a backwash when the reading rises by 0.3 – 0.5 bar above the normal operating value.

After each backwash, the water removed must be replaced. If the make-up water comes from a borehole, add a proportional maintenance dose for the new volume of water.

Tip: Record the date and quantity of each application, together with the pH values before and after. This history makes it easier to fine-tune the dosage and to document the maintenance carried out.

10. Troubleshooting

Problem	Possible cause	Action
Staining persists after application	Old, hardened deposits; insufficient dose	Repeat the initial dose after 7 days; brush the surfaces mechanically
Water turned cloudy after addition	Release of bound particles into the water	Normal; continue circulation for 8–12 hours and then backwash
Staining reappears after a few days	Continuous metal input (borehole, corroding fitting)	Identify the source; increase the frequency of the maintenance dose
Brownish water right after shock chlorination	Oxidation of dissolved iron by chlorine	Apply the initial dose with 8 hours of circulation, then backwash
pH fell below 7.0 after application	Overdosing, or already low total alkalinity	Correct with pH plus; check total alkalinity (80–120 mg/L)
Filter pressure rises quickly	Accumulation of bound metals in the filter media	Perform a backwash; if it recurs, clean the filter media
Green water with no algae	Dissolved copper oxidising	Initial dose; check the pH — low pH attacks copper fittings
No improvement in a borehole-fed pool	Very high metal load in the supply water	Combine chemical treatment with partial water replacement or pre-treatment
Metal fittings show corrosion	Contact with undiluted product, or prolonged low pH	Always dilute before adding; maintain pH 7.2–7.6
Liner staining that will not fade	Permanent staining of the material from prolonged exposure	Chemical treatment cannot reverse permanent staining; specialist cleaning is required
Strong odour or foaming	Mixing with an incompatible chemical	Stop dosing, ventilate the area and consult the SDS
Product appearance has changed in the container	Improper storage (temperature outside 5–25 °C)	Do not use; contact the technical support department

11. Storage & Handling

- Store in the original container, tightly closed and in an **upright position**.
- Storage temperature **5 – 25 °C**, in a dry, well-ventilated area.
- Away from direct sunlight and sources of heat.
- Away from oxidising agents and from strongly acidic or alkaline materials.
- Away from children and unauthorised persons.
- Eating, drinking and smoking are prohibited in the storage area.
- Never use pressure to empty the container — it is not a pressure vessel.
- After opening, close the container carefully and store it upright.

SEPARATE FROM CHLORINE

Store OxyGuard Mineral Protect separately from chlorine products and from alkaline products. In the event of a simultaneous spill, contact between them may release hazardous gases.

Not subject to Directive 2012/18/EU (SEVESO III). Transport in accordance with ADR/RID/IMDG/ICAO-IATA.

12. First Aid

Route of exposure	Actions
Eye contact	Rinse immediately with plenty of cool clean water for at least 10–15 minutes, holding the eyelids open. Remove contact lenses if easy to do. Do not allow rubbing. Seek medical attention IMMEDIATELY.
Skin contact	Remove contaminated clothing immediately. Wash the skin thoroughly with plenty of water and soap. Never use solvents or thinners. Seek medical advice.
Ingestion	Rinse the mouth with water. Do NOT induce vomiting. Keep the casualty at rest. Seek medical attention IMMEDIATELY and show the label or the SDS.
Inhalation	Move the casualty to fresh air, keep them warm and at rest. If breathing is irregular or stops, give artificial respiration and call for medical help.

Never give anything by mouth to an unconscious person. In case of doubt, or if symptoms persist, seek medical advice.

POISON CENTRE TELEPHONE

Greece: +30 210 77 93 777 (available 24 hours). In any exposure event, have the product label to hand together with the UFI code: XSN4-M01R-E00T-3CS3.

13. Spillage, Environment & Disposal

Dealing with a spillage

- Put on the PPE listed in Section 1 before approaching the spillage.
- Contain and collect the liquid with inert absorbent material (sand, earth, vermiculite).
- Collect the residues in suitable closed containers for disposal.
- Clean the area with plenty of water.
- Absorb the spillage to prevent material damage to metal surfaces (P390).

Environment

The product is not classified as hazardous to the environment. Nevertheless, any release into the environment must be avoided. It must not be discharged into sewers, drains or watercourses, and penetration into the soil must be prevented.

Disposal

Dispose of the contents and the container in accordance with local, regional, national and international regulations (P501), following the provisions of Directive 2008/98/EC on waste management. Empty containers must not be reused for any other purpose.

14. Warranty & Contact Information

OXYGON warrants that the product meets the specifications stated in the Technical Data Sheet (TDS), provided it is kept in its original sealed container and under the specified storage conditions.

The warranty does not cover results arising from incorrect dosing, from mixing with incompatible products, from improper storage, or from use outside the instructions given in this manual. As conditions vary from one installation to another, the user is responsible for confirming that the product is suitable for the specific application.

Person responsible for placing on the market: **KARAVASILIS STERGIOS & SIA EE — OXYGON**. For technical support, dosing advice or a copy of the Safety Data Sheet (SDS), please contact the technical support department.

Contact Information

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ISO Certifications

ISO 9001:2015 Quality Management *EUROCERT*	**ISO 14001:2015** Environmental Management *BQV*	**ISO 45001:2018** Occupational Health & Safety *BQV*
ISO 22301:2019 Business Continuity *EUROCERT*	**ISO 46001:2019** Water Efficiency *BQV*	

Recycling of materials must be carried out in accordance with applicable regulations.