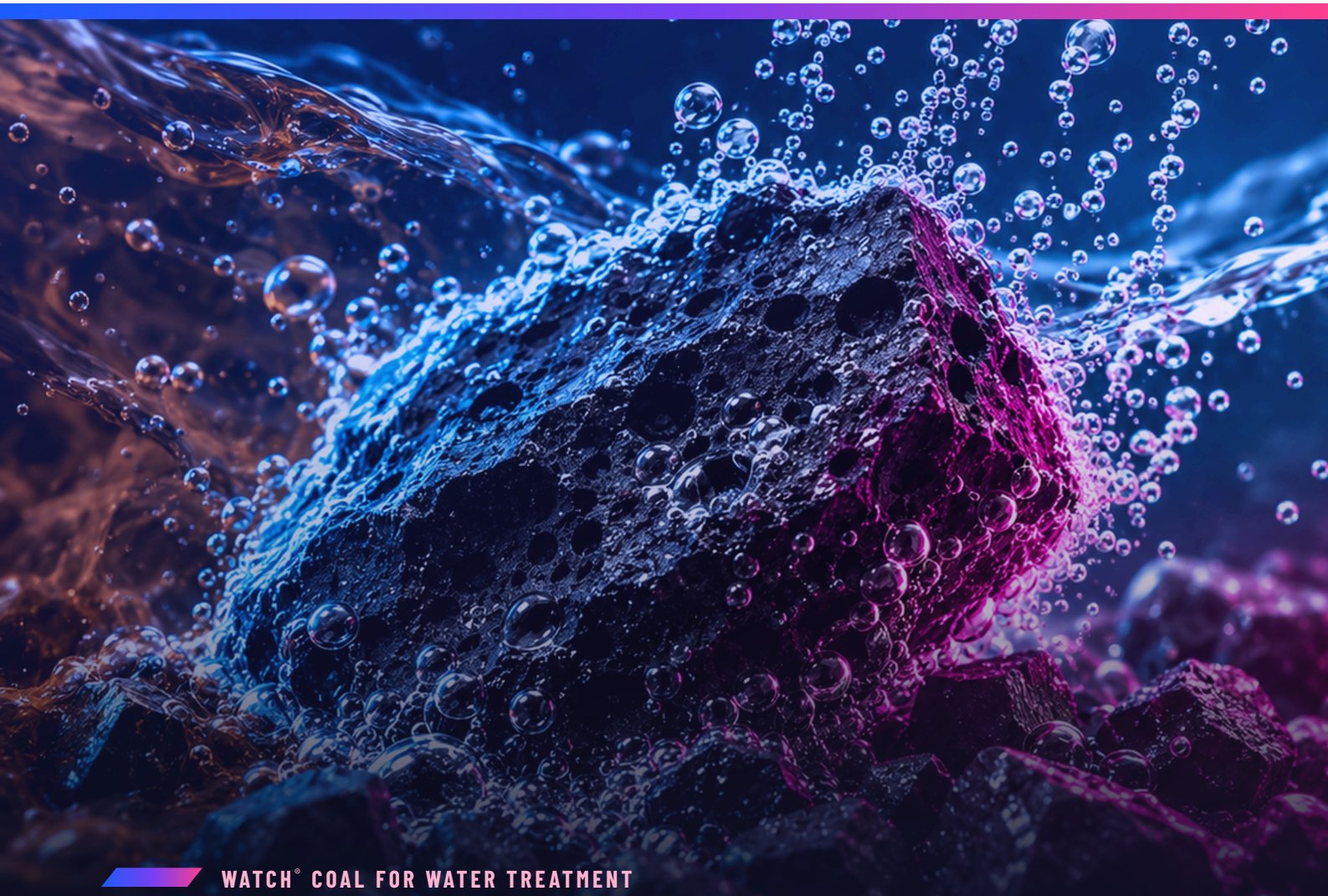
WATCH® WATER
a Water Company



WATCH® COAL FOR WATER TREATMENT

OxyCarbon®

POWERFUL COD & BOD REDUCTION

OxyCarbon® Granules made from Watch® Coal. Adsorptive treatment. Regenerable performance.

REGENERABLE WITH CARBONOXY R®

1,200 m²/g*	ZERO ASH*	SIEVED TWICE
SPECIFIC SURFACE AREA	ASH CONTENT	OXYCARBON® GRANULES

A special carbon. A stronger water-treatment process.

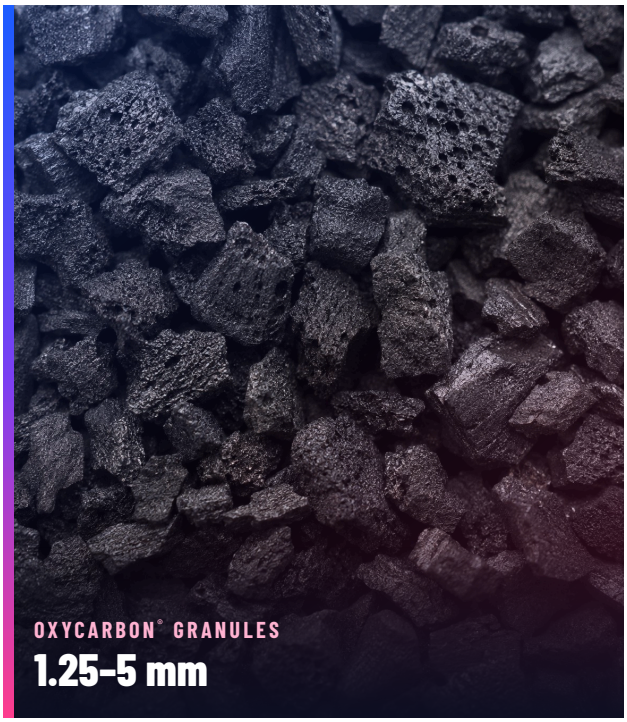
*Typical values; full specification on page 9.

THE MATERIAL

A SPECIAL CARBON. A STRONGER PROCESS.



Watch Water produces OxyCarbon® Granules from Watch® Coal. The carbon is sieved twice and activated with CarbonOxy R®, giving a specific surface area of up to 1,200 m^2/g and zero ash content. The granules are used in retained adsorption beds.



1

Capture organic pollution

A porous carbon surface takes up suitable dissolved contaminants, including larger organic compounds.

2

Sieved twice

OxyCarbon® Granules pass through two sieving stages. The finished granular grade is 1.25–5 mm.

3

Regenerate and reuse

Use CarbonOxy R® to regenerate the loaded adsorption bed and return OxyCarbon® Granules to service after rinsing.

FROM WATCH® COAL TO OXYCARBON® GRANULES

RAW MATERIAL	SIEVING	ACTIVATION	GRANULAR GRADE
Watch® Coal	Two passes	CarbonOxy R®	1.25–5 mm

GRAIN SIZE · ACTUAL SIZE IN PRINT (mm)

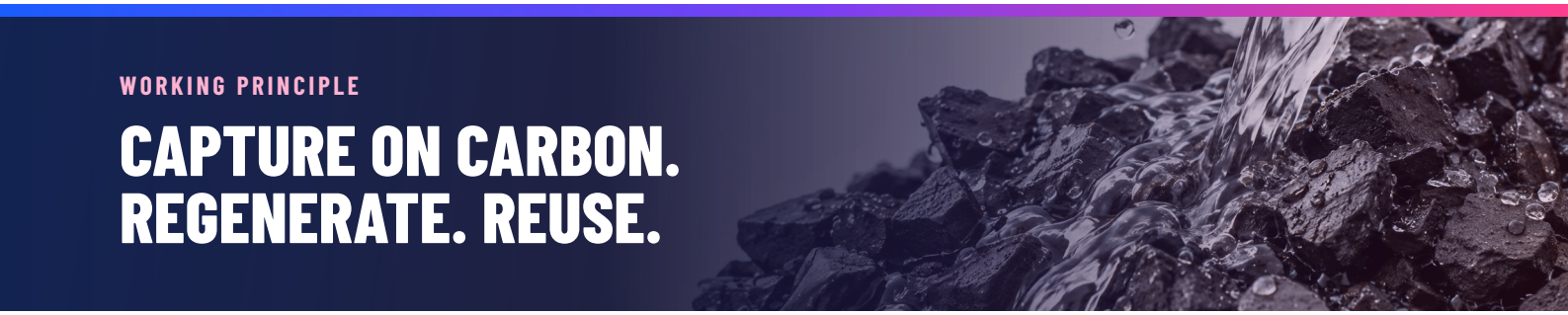


1,200 m^2/g
SURFACE AREA*

ZERO ASH
ASH SPECIFICATION*

2 PASSES
SIEVING

*Typical values; see page 9.

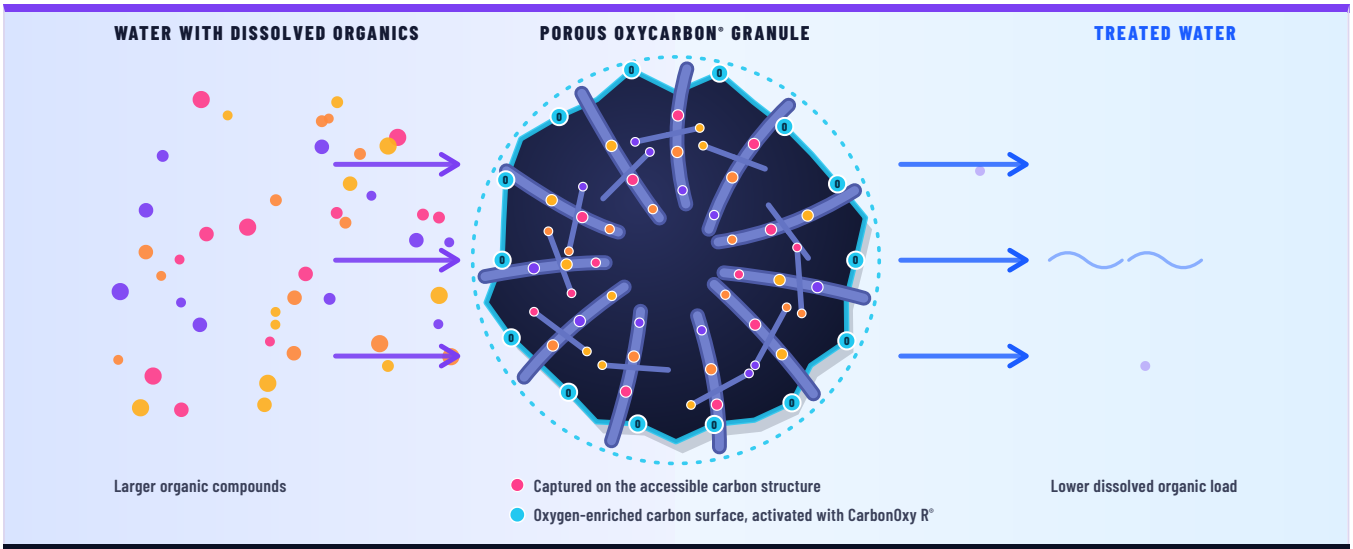


WORKING PRINCIPLE

CAPTURE ON CARBON. REGENERATE. REUSE.

A porous, oxygen-enriched carbon surface takes up suitable dissolved contaminants in a retained bed.

ADSORPTION ON OXYGEN-ENRICHED CARBON



0 OXYGEN-ENRICHED CARBON

OxyCarbon® Granules are activated with CarbonOxy R®. This oxidising treatment gives the granules an oxygen-enriched carbon surface. CarbonOxy R® is also the regenerant: it cleans loaded carbon surfaces through oxidation and restores adsorption performance for reuse.

01 Contact
Water passes through a retained bed and contacts the accessible carbon structure.

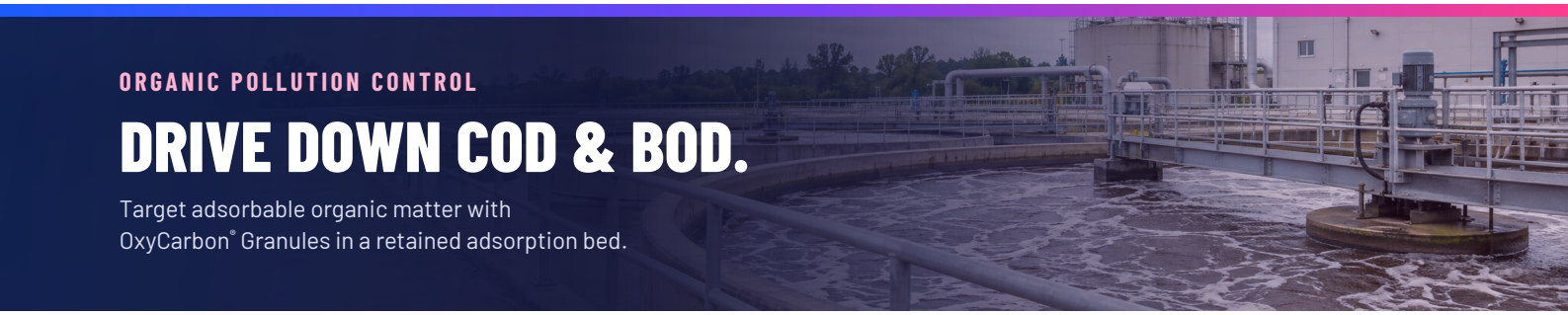
02 Capture
The porous carbon surface takes up suitable dissolved contaminants and retains them.

03 Reduce
COD, BOD_5 and similar indicators decrease when their contributing compounds are removed.

REGENERATION LOOP WITH CARBONOXY R®

SERVICE	→	REGENERATE	→	RINSE	→	REUSE
Adsorb 20 BV/h through the retained bed		**Soak · 60 min** CarbonOxy R® at 5% in the vessel		**60 min minimum** Until the outlet water runs clear		**Back to service** After confirming outlet quality

Adsorption retains a substance on the carbon. A lower water concentration does not establish that the substance has been destroyed. Results must be measured in the actual water.



ORGANIC POLLUTION CONTROL

DRIVE DOWN COD & BOD.

Target adsorbable organic matter with OxyCarbon® Granules in a retained adsorption bed.

COD
CHEMICAL OXYGEN DEMAND

Capture the adsorbable fraction

OxyCarbon® Granules retain suitable dissolved organic compounds on their carbon surface. Removing these compounds from the water can reduce the adsorbable contribution to COD.

BOD
BIOCHEMICAL OXYGEN DEMAND

Capture oxygen-demanding matter

Adsorption can reduce BOD where the compounds contributing to oxygen demand are adsorbable. The result depends on the composition of the water and the selected contact conditions.

WHAT ADSORPTION CHANGES



Illustration only, not to scale. The result depends on the composition of the water and the selected contact conditions.

ONE GRADE. ADSORPTIVE ORGANIC-LOAD REDUCTION.

Use OxyCarbon® Granules to capture suitable dissolved organic contaminants. Establish the achieved COD and BOD reduction from inlet and outlet measurements under the intended operating conditions.


INLET AND OUTLET SAMPLES

Maximise your treatment potential.

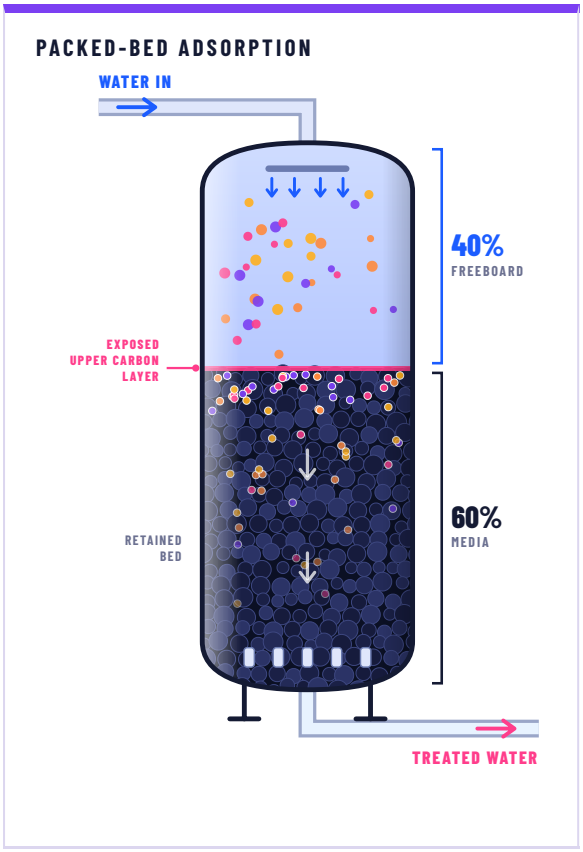
Granular adsorption + CarbonOxy R® regeneration + Media reuse

ADSORPTIVE TREATMENT

ADSORB THE DIFFICULT FRACTION.



OxyCarbon® Granules provide an adsorptive stage for suitable dissolved organic pollutants in industrial wastewater and landfill leachate. Water passes through a retained bed, where contaminants contact the accessible carbon structure.



01

Large-molecule capture

Adsorb suitable organic compounds. An exposed upper carbon layer can also capture odorous substances.

02

20 BV/h service flow

Set flow from the OxyCarbon® media volume. Reserve 40% of vessel volume as freeboard, leaving 60% for media.

03

In-place regeneration

CarbonOxy R® treats the loaded adsorption bed inside a suitable filtration vessel.

20 BV/h	40%	60%
SERVICE FLOW	FREEBOARD	MEDIA FILL

INITIAL START-UP / BEFORE FIRST SERVICE

4 HOURS
SOAK IN CLEAN WATER

Then rinse until clear.

Keep the granules fully submerged in clean water for four hours. Rinse with clean water until the outlet water runs clear, then place the filter into service.



PARAMETER GUIDE / ORGANIC LOAD AND WATER QUALITY

WHAT IT TARGETS. PARAMETER BY PARAMETER.



OxyCarbon® Granules cover the established application range of activated carbon. Removal, capacity and outlet quality depend on the water, so confirm them by testing in the actual water.

COD — COD

Reduce the adsorbable organic contribution to chemical oxygen demand; quantify the overall result in the treated water.

ANALYTICAL INDICATOR

BOD^5 — BOD_5

Reduce five-day biochemical oxygen demand where the contributing organic compounds are adsorbable; verify the measured response.

ANALYTICAL INDICATOR

TOC — Total organic carbon

Remove the adsorbable organic-carbon fraction; TOC reports the combined carbon content of organic substances.

ANALYTICAL INDICATOR

DOC — Dissolved organic carbon

Adsorb suitable dissolved organic matter and lower its contribution to DOC.

ANALYTICAL INDICATOR

NOM — Natural organic matter

Capture suitable humic and other natural organic fractions; background organics also compete for adsorption sites.

ORGANIC FRACTION

UV^{254} — UV_{254} absorbance

Reduce absorbance by removing suitable UV-absorbing organics. This is an indicator, not a separate contaminant.

ANALYTICAL INDICATOR

COL — Colour

Adsorb suitable dissolved colour-forming organics, including selected dyes and natural organic fractions.

COLOUR · TASTE · ODOUR

TASTE — Taste

Reduce objectionable tastes associated with adsorbable organic compounds.

COLOUR · TASTE · ODOUR

ODOUR — Odour

Adsorb suitable odour compounds, including geosmin and 2-methylisoborneol (2-MIB), subject to carbon selection.

COLOUR · TASTE · ODOUR

COD, BOD_5, TOC, DOC and UV_{254} are analytical indicators, not individual pollutants. Removal results depend on which compounds produce the measured value.

CAPTURE. REDUCE. UNDERSTAND THE RESULT.

READING THE PARAMETER GUIDE

CAPTURE

Adsorption retains a substance on the carbon. A lower water concentration does not establish that the substance has been destroyed.

REDUCE

COD, BOD_5 and similar indicators decrease when their contributing compounds are removed. The result must be measured in the actual water.

TRANSFORM

Free chlorine and chloramines can react at carbon surfaces. The resulting chemical species differ from the original disinfectant.



PARAMETER GUIDE / INDUSTRIAL ORGANIC CONTAMINANTS

TARGET DISSOLVED ORGANIC CONTAMINANTS.

OxyCarbon® Granules adsorb a wide range of dissolved organic compound groups. Confirm each target at the intended pH, flow and contact time.

PHE Phenols

Adsorption targets include phenol, cresols and selected alkyl phenols.

AROMATICS & PHENOLICS

BTX Aromatic VOCs

Adsorb selected volatile aromatics, including benzene, toluene and xylenes.

AROMATICS & PHENOLICS

PAH PAHs

Adsorb selected polycyclic aromatic hydrocarbons, including naphthalene.

AROMATICS & PHENOLICS

CLP Chlorophenols

Adsorb selected chlorinated phenolic compounds; performance depends on pH and molecular structure.

CHLORINATED ORGANICS

TCE Chlorinated solvents

Adsorption targets include trichloroethylene (TCE) and tetrachloroethylene (PCE).

CHLORINATED ORGANICS

PCB Chlorinated aromatics / PCBs

Adsorption applications include chlorobenzene and selected polychlorinated biphenyls (PCBs).

CHLORINATED ORGANICS

LAS Surfactants

Adsorb selected surface-active organics, including alkylbenzene sulfonates.

PROCESS & AGRO ORGANICS

DYE Organic dyes

Adsorb suitable soluble dyes, including methylene blue and selected textile dyes.

PROCESS & AGRO ORGANICS

FUEL Dissolved fuel organics

Polish adsorbable dissolved fuel components; remove free oil and excessive solids upstream.

PROCESS & AGRO ORGANICS

ACID Selected organic acids

Adsorption targets include benzoic and tar acids; suitability depends on acid type and pH.

PROCESS & AGRO ORGANICS

AMINE Selected amines

Adsorb suitable aromatic and larger aliphatic amines, including aniline and toluene diamine.

PROCESS & AGRO ORGANICS

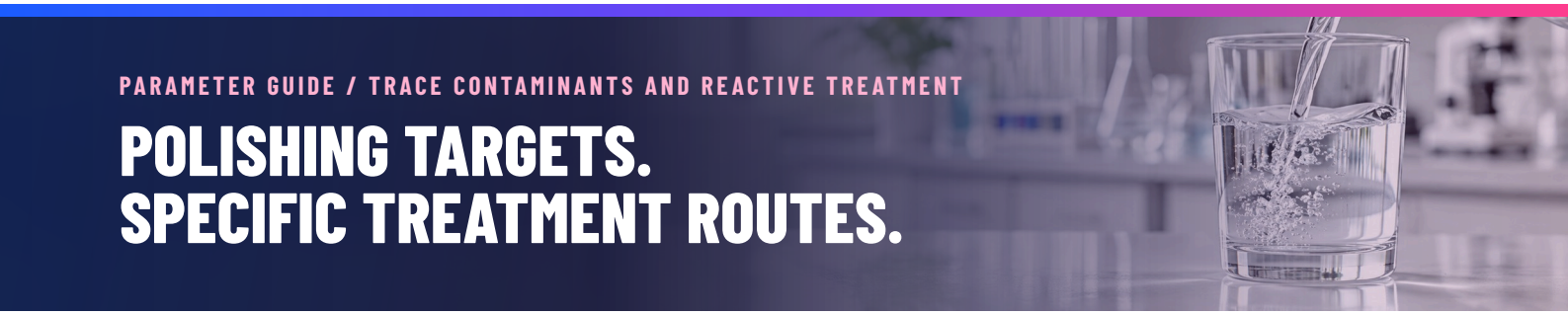
PEST Pesticides / herbicides

Selected adsorption targets include atrazine, simazine, alachlor and 2,4-D.

PROCESS & AGRO ORGANICS

Adsorption transfers contaminants from water to carbon. Removal rate and service life depend on the application.

CONFIRM AT THE INTENDED pH | FLOW | CONTACT TIME



PARAMETER GUIDE / TRACE CONTAMINANTS AND REACTIVE TREATMENT

POLISHING TARGETS. SPECIFIC TREATMENT ROUTES.

Specialist targets require compound-specific tests. Reactive removal also depends on the carbon surface chemistry and operating conditions.

POLISHING TARGETS

THM THMs

Adsorption can reduce selected trihalomethanes; assess each compound and breakthrough separately.

ADSORPTION TARGET

AOX AOX

Reduce the adsorbable organic-halogen fraction; AOX is a group parameter, not a single compound.

ADSORPTION TARGET

DBP DBP precursors

Adsorb suitable organic precursors before disinfection to reduce subsequent by-product formation potential.

ADSORPTION TARGET

PPCP Pharma-ceuticals / PPCPs

Adsorb selected drug residues and personal-care compounds; affinity varies strongly by substance.

ADSORPTION TARGET

EDC Endocrine-active organics

Selected hormones and related organic micropollutants are adsorption targets; verify the individual compounds.

ADSORPTION TARGET

TOXIN Dissolved cyanotoxins

Selected dissolved toxins, including microcystins, are carbon-treatment targets; assess the toxin and water matrix.

ADSORPTION TARGET

PFAS Selected PFAS

Adsorption is established especially for PFOA and PFOS. Short-chain performance needs particular validation; adsorption does not prove destruction.

ADSORPTION TARGET

TEST EVERY TARGET

Confirm performance for each target compound by testing. Adsorption captures a substance; it does not destroy it.

SPECIFIC TREATMENT ROUTES

Cl_2 Free chlorine

Chemical reduction at the carbon surface converts free chlorine to chloride; verify the outlet residual.

REACTIVE TREATMENT

NH_2Cl Chloramines

Surface-catalysed breakdown is possible. Verify OxyCarbon® reaction rate, contact time and outlet residuals.

REACTIVE TREATMENT

H_2S Hydrogen sulfide / sulfides

Suitable catalytic carbon systems can reduce sulfide through oxidation. OxyCarbon® suitability requires specific validation.

REACTIVE TREATMENT

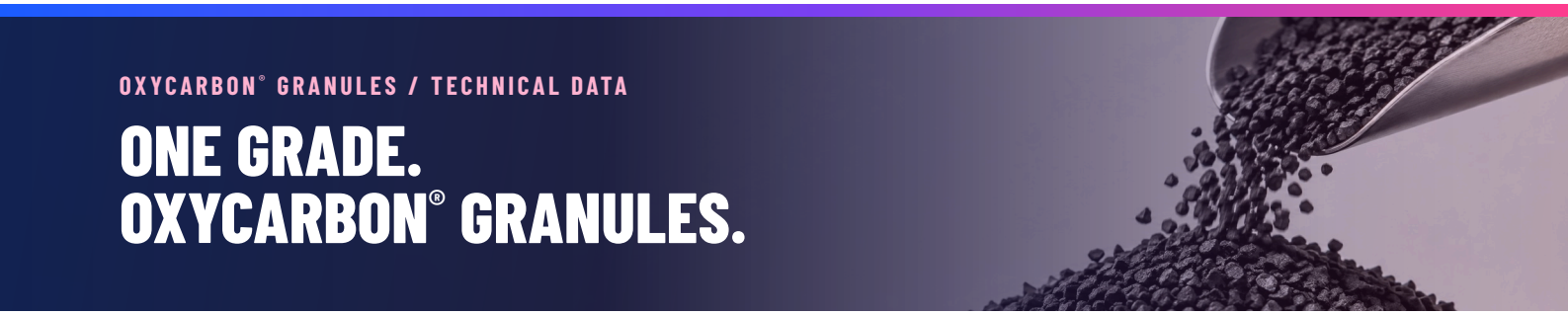
CARBONOXY R®

REGENERATION

CarbonOxy R® is designed to oxidise suitable retained pollutants during regeneration. Confirm contaminant conversion and by-products for the application. Complete mineralisation, including PFAS destruction, is not demonstrated by adsorption or surface-area data.

OXYCARBON® GRANULES / TECHNICAL DATA

ONE GRADE. OXYCARBON® GRANULES.





PRODUCT AND OPERATING SPECIFICATIONS

Product grade	**OxyCarbon® Granules**
Manufacturer	**Watch Water GmbH, Germany**
Raw material	**Watch® Coal**
Grain size	**1.25–5 mm**
Sieving	**Two passes**
Activation treatment	**CarbonOxy R®**
Specific surface area	**Up to 1,200 m^2/g***
Ash content	**0% (zero ash)***
Service flow	**20 BV/h (media volume)**
Pressure-vessel freeboard	**40% of vessel volume**
Media fill	**60% of vessel volume**
Regeneration	**CarbonOxy R®**

FLOW BASIS
20 BV/h
20 bed volumes per hour.

EXAMPLE
100 litres
of OxyCarbon® media

=

SERVICE FLOW
2 m^3/h
service flow

*Typical values. Batch-specific data are available on request.

CARBONOXY R® REGENERATION

REGENERATE IN PLACE. REUSE OXYCARBON®.



OxyCarbon® can be regenerated with CarbonOxy R® inside a suitable adsorption vessel. The regenerant is designed to clean loaded carbon surfaces through oxidation and restore adsorption performance for reuse.

ON-SITE
Treat the carbon inside the filtration vessel.

LOWER HEAT DEMAND
Chemical regeneration without a thermal furnace.

RESOURCE EFFICIENCY
Reuse media and reduce replacement waste.

CARBONOXY R® / TECHNICAL DATA

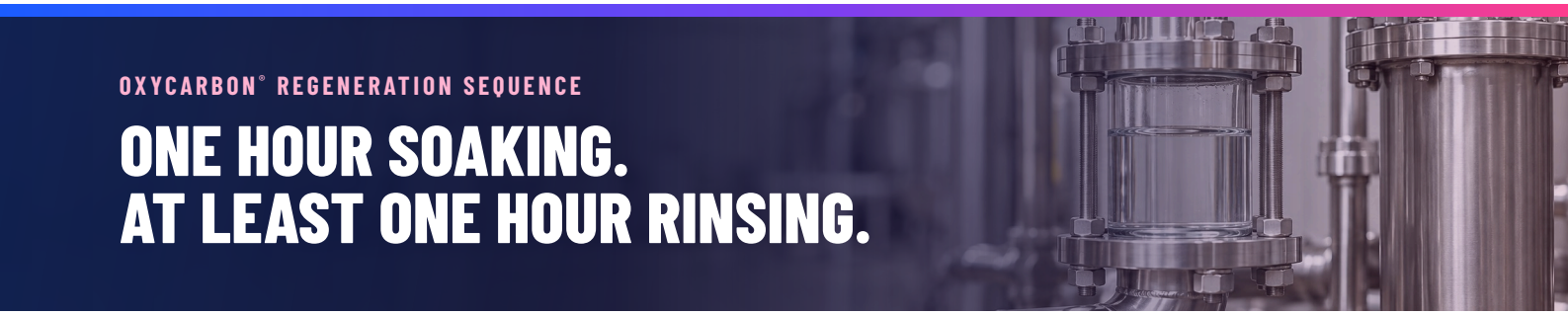
Manufacturer	**Watch Water GmbH, Germany**
Appearance	**Pink crystalline powder**
Odour	**Odourless**
Water solubility	**Highly soluble**
pH of a 1% solution	**2.5-3.0**
Regenerant dosage	**10 g per litre of OxyCarbon®**
Prepared solution	**5% – fresh for each cycle**
Preparation guide	**50 g in 1 litre of fresh water**



DOSE BY THE VOLUME OF CARBON

Example: a 100-litre OxyCarbon® bed requires 1 kg CarbonOxy R®. At the standard preparation ratio, dissolve this in 20 litres of fresh water.

100 L BED → **1 kg** REGENERANT → **20 L** FRESH WATER



OXYCARBON® REGENERATION SEQUENCE

ONE HOUR SOAKING. AT LEAST ONE HOUR RINSING.

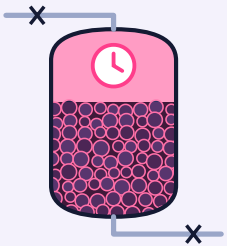
A clear regeneration sequence for retained OxyCarbon® adsorption beds: soak, rinse and return to service.

BEFORE YOU START
PREPARE

PREPARE THE VESSEL AND REGENERANT

Isolate the vessel from service and complete the system backwash. Prepare fresh CarbonOxy R® solution at 5%, using 10 g per litre of OxyCarbon®. Introduce the dose through the regeneration circuit and distribute it throughout the retained bed.

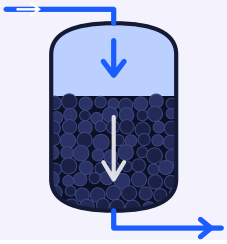
01 60 MINUTES



SOAK

Keep the OxyCarbon® bed in contact with the introduced regenerant for one full hour.

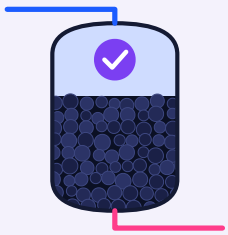
02 60 MINUTES MINIMUM



RINSE

Rinse for at least one hour and until the outlet water runs clear. Direct regeneration effluent to the designated collection or treatment route.

03 AFTER RINSING



BACK TO SERVICE

Confirm the required outlet pH, residual-oxidant and water-quality endpoints, then return the vessel to service.

MINIMUM 120 MINUTES OF SOAKING + RINSING

0–60 min
SOAK

60–120 min
RINSE · MINIMUM

+
UNTIL CLEAR

Preparation, backwashing and regenerant loading are additional. Continue rinsing beyond one hour if needed to obtain clear outlet water and meet the required quality endpoints.

For isolated adsorption vessels. Follow the CarbonOxy R® safety data sheet for handling and the approved operating procedure for the installation.

MORE VALUE THROUGH THE TREATMENT PROCESS

MAKE EVERY STAGE WORK HARDER.

From pollutant capture to regeneration, OxyCarbon® Granules bring practical benefits to professional water treatment.



STAGE 01 CAPTURE	STAGE 02 REDUCE	STAGE 03 POLISH	STAGE 04 REGENERATE	STAGE 05 REUSE
Adsorb suitable dissolved organic pollutants in a retained granular bed.	Target the adsorbable organic fraction contributing to COD and BOD.	Integrate granular adsorption as a water-treatment polishing stage.	Use CarbonOxy R® with one hour soaking, then rinse for at least one hour and until clear.	Return the rinsed OxyCarbon® Granules to service after confirming outlet quality.

AFTER REUSE, THE BED RETURNS TO CAPTURE

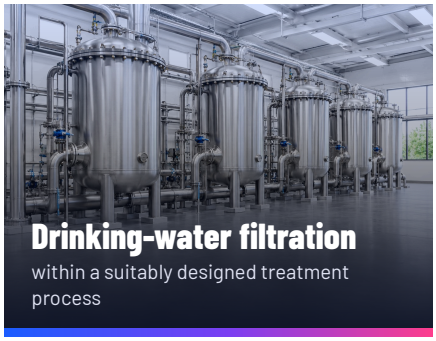
APPLICATIONS



Industrial wastewater



Landfill leachate



Drinking-water filtration
within a suitably designed treatment process

OxyCarbon®
For professional water-treatment partners.

Powerful carbon. Better water.

WATCH® WATER
a Water Company

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