



# Chemical technologies IN-ECO®



Original Chemical Solution

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# ADVANCED IN-ECO<sup>®</sup> TECHNOLOGIES

## Chemical water treatment and process chemicals

JSC "Inžinerinė ekologija" - the specialized chemical engineering company, founded by experts with more than 25 years of experience in implementing technology programs of chemical treatment and the provision of engineering services to enterprises of different industries.

Company is the owner of international registered trademark IN-ECO<sup>®</sup>.

For a long time our company successfully produces chemical reagents and technologies for stabilizing and correction properties of water and technological process under trademark IN-ECO<sup>®</sup>.

Advanced IN-ECO<sup>®</sup> technologies implement the possibility of optimal energy usage, providing safe exploitation and prolonged equipment life. Our technological solutions give possibility to increase productivity while minimizing exploitation costs. Our customers have a chance to improve production quality and reduce prime cost.

### Benefits of IN-ECO<sup>®</sup> technologies are technical support services:

- Full analysis of the process and operation of the system
- Monitoring of water parameters, identification of operation problems
- Offer effective program of chemical treatment IN-ECO<sup>®</sup>, providing feasibility study
- Design and installation of dosing equipment, technical support during start of water treatment program and optimization system operation mode
- Select the appropriate program for technical support service: monitoring, rapid response, discuss about all aspects of water treatment, considering features and requirements of the customer, ensuring reliability and guarantee results

## Original Chemical Solution



IN-ECO® chemical production is based on modern technical solutions and responds to high environmental standards. Wide range of multifunctional chemical products IN-ECO® gives us possibility to offer most effective individual program for each customer.

IN-ECO® chemical production is based on international quality system ISO 9001 and ISO 14001, responds to current requirements of REACH registration.





# IN-ECO<sup>®</sup> TECHNOLOGIES FOR COOLING WATER TREATMENT

The cooling water systems are an important part of technological processes in many industries. From 50% to 90% of technological water may be used for cooling processes and apparatus.

The source of make-up water for cooling systems usually is surface water, ground water and effluents of waste water treatment. Due to dissolved minerals and suspended matter in circulating water, scale, corrosion, fouling and microbial contamination may occur. That reduces heat transfer efficiency, increases operating and maintenance costs.

## IN-ECO<sup>®</sup> cooling water treatment provides:

- Inhibition of scale formation and guarantee of efficient heat exchange
- Minimization of corrosion rate and increased life of the equipment
- Possibility to work at high cycles even without acid dosing
- Environment friendly chemicals and good price/quality ratio

## Original Chemical Solution

Wide range of complex chemical products IN-ECO®, such as corrosion and scale inhibitors, biocides, biodispersants, cleaning concentrates for heat exchange equipment gives us a possibility to prepare most effective treatment program for every customer, to react quickly to any changes of technological cycle.

Dosing equipment, control and handling devices

Correct, proportional and timely dosing of reagents is one of the important factors for effectiveness of cooling water treatment program. For each case we choose individual dosing equipment, providing modern control devices with a possibility of data control through the internet.

Multifunctional scale and corrosion inhibitors	IN-ECO 101; 102; 114; 130; 133; 134; 150; 151
Fully organic scale and corrosion inhibitors	IN-ECO 110; 190; 111
Corrosion inhibitors	IN-ECO 103; 120; 160; 161; 173; 174
Oxidizing biocides	IN-ECO 210; 221
Non-oxidizing biocides	IN-ECO 260; 262; 263; 265; 267; 268; 269
Bio-dispersants	IN-ECO 250; 251

# IN-ECO<sup>®</sup> WATER TREATMENT PROGRAM FOR STEAM-BOILERS AND HEATING SYSTEMS

Steam production, continuous and safe operation of steam-boilers and turbines depends not only on water treatment equipment and make-up water quality. In order to support the required parameters of feed and boiler water there is necessity of effective internal water treatment. Internal water treatment complements external treatment by removing any impurities in the boiler that escape during pretreatment.

Internal boiler water treatment is accomplished by using a variety of chemicals that will either eliminate the problem causing impurities or condition the impurities to prevent damage to the system.

That creates conditions to ensure uninterrupted production, avoids unscheduled shutdowns, saves warranty of boiler manufacturer, reduces maintenance cost, lowers influence to the environment.

Quality internal treatment technology will enhance system reliability and efficiency, increase the steam and heat production, save fuel and reduce energy costs.

During internal water treatment of heating system for prolonged working time of equipment and collectors it is very important to pay attention to the chemical deaeration, carbon dioxide neutralization, pH control.

Actually and ecologically it is replacement of softening equipment (partially or completely) to chemical scale inhibition by using advanced antiscalant.

## Advantages of IN-ECO<sup>®</sup> programs for boiler and heating system:

- Complete scale inhibition and deposits control
- Chemical removal of oxygen
- Magnetite film formation and corrosion control
- Improved quality of steam and return condensate
- Decrease frequency of chemical cleaning
- Ecologically safe usage and short payback period

## Original Chemical Solution



Wide range of complex chemical products IN-ECO®, such as corrosion and scale inhibitors, oxygen scavengers, dispersants, neutralizers, cleaning concentrates for heat exchange equipment gives us possibility to prepare most effective treatment program for every customer, to react quickly to any changes of technological cycle.



Universal scale and corrosion inhibitors	IN-ECO 302; 303; 306; 307; 308; 312; 314
Oxygen scavengers	IN-ECO 324; 326; 3263
Heating systems inhibitors	IN-ECO 390; 391; 301
Antiscalants	IN-ECO 3552; 3553
Cleaning concentrates	IN-ECO 401; 402; 403; 404; 411; 424

# IN-ECO<sup>®</sup> CHEMICALS FOR MEMBRANE TECHNOLOGIES

Indisputable economical and environmental properties of membrane technologies allowed them to become one of the main and basic technologies in water treatment and other applications.

Reliable, lengthy and trouble-free operation of the membrane installations leads to correctly selected chemical treatment program. Chemical treatment for membrane technologies intended to prevent and eliminate such problems as organic fouling and biofilm, salt deposition and contamination, damage and destruction of the membrane material.

Our specialists start work with a customer since the design stage, then analyze the dynamics of raw water, correctly select pretreatment, select the type of antiscalant and calculate the dose, determine the optimal mode recovery, choose effective program of chemical cleaning.

## Advantages of IN-ECO<sup>®</sup> programs for membrane technologies:

- Protection of membranes from oxidation and degradation
- Prolong membrane life
- Optimal chemical cleaning regime and reduce down time
- Maintain systems performance
- Possibility to increase recovery
- Energy savings
- Minimal ecological impact and optimization of treatment cost

## Original Chemical Solution



Wide range of complex chemical products IN-ECO®, such as antiscalants, high effective cleaning concentrates, bactericides and preservatives gives us possibility to prepare most effective treatment program for each customer, to react quickly to any changes of technological cycle.

Universal scale inhibitors – antiscalants	IN-ECO 550; 551; 552; 553; 554
Concentrates for chemical cleaning	IN-ECO 535; 537; 540; 541
Conservation	IN-ECO 501; 502
Chemicals for disinfection and sanitation	IN-ECO 510; 513; 515
Additional chemicals for pre-treatment and correction	IN-ECO 600; 210; 501





# SUBSIDIARY CHEMICAL PRODUCTS AND MATERIALS FOR WATER TREATMENT AND TECHNOLOGICAL PROCESSES

For our customers we provide full package of additional and consumable chemical materials for continuous water treatment process, that is:

- Chemicals for pre-treatment: coagulants and flocculants
- Chemical disinfection, solutions of hypochlorite, chemicals for chlorine dioxide production
- Different filtration media for mechanical filters: sand, anthracite, activated carbon etc.
- Mechanical filters for purification. Disk filtration technology.
- Wide range of ion exchange materials for water treatment and technological processes
- Different chemically resistant dosing pumps
- Laboratory water analysis and express-tests
- Corrosion coupons and corrosion monitoring systems

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"Nothing in the world is as soft and yielding as water.  
Yet for dissolving the hard and inflexible,  
nothing can surpass it".

Lao Tzu







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