



## PETIÓN® ANTI-BIOLOGICAL GROWTH AND ANTIFOULING SYSTEMS FOR SEAWATER PIPELINES

PETIÓN® IS THE MOST ADVANCED ANTI-BIOLOGICAL GROWTH AND ANTICORROSIVE SYSTEM FOR SEAWATER CIRCUITS THAT CAN BE FOUND IN THE MARKET. APPLYING THE HIGHEST TECHNOLOGY IN ELECTROLYSIS, THE TWO MAIN OBJECTIVES ARE REACHED: THE TOTAL CLEANING UP OF MOLLUSCS, CRUSTACEANS AND ALGAE IN ONE HAND AND, ON THE OTHER, THE PROTECTION AGAINST CORROSION IN THE WHOLE SYSTEM WHERE THE SEAWATER FLOWS, EITHER IN PIPELINES, VALVES OR ANY OTHER MACHINERY.

THE USE OF PETIÓN® ON ALL KIND OF SHIPS, VESSELS, PETROL PLATFORMS, AND INLAND SEAWATER REFRIGERATION SYSTEMS, HAS BEEN CRUCIAL IN THE MAINTENANCE OF THEM. THE PETIÓN® SYSTEM IS A PETER TABOADA'S® PATENT. BUILT WITH THE BEST COMPONENTS AND MATERIALS AFTER SEVERAL YEARS OF RESEARCH AND DEVELOPMENT, THE PETIÓN® SYSTEM IS THE MOST COST-EFFECTIVE AND LEAST EXPENSIVE BY ITS PERFORMANCE, LOW ENERGY, AND MAINTENANCE EXPENSES.



WITHIN THE ADVANTAGES WE HAVE FOUND, REGARDING TO OTHER SYSTEMS, WE CAN MENTION:

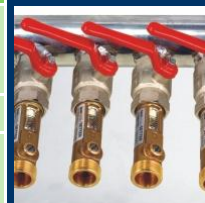
- 1.- IT AVOIDS MOLLUSCS, CRUSTACEANS AND ALGAE INCRUSTATIONS, WHICH REDUCES SUBSTANTIALLY THE MAINTENANCE COST OF PIPELINES, SUMPS, VALVES, SEAWATER INLETS, INTERCOOLERS, AND CONDENSORS.
- 2.- ELIMINATES SLUDGE FORMATION.
- 3.- ELIMINATES CORROSION IN THE PIPELINE, INCREASING ITS DURATION AND PROTECTING IT. THIS MEANS SAVINGS, AS THERE IS NO NEED TO REPLACE THEM FROM TIME TO TIME.
- 4.- IT INCREASES REFRIGERATION IN ENGINES, REFRIGERATION EQUIPMENT, CONDENSORS, INTERCOOLERS ETC. THAT MEANS ENERGY SAVINGS.
- 5.- IT INCREASES SEAWATER CIRCULATION IN PUMPS, WHICH INCREASES ITS EFFICIENCY.
- 6.- THE PETION CONSUMES UP TO 90% OF THE ALUMINIUM AND COPPER ELECTRODES, AND FOR THEIR REPLACEMENT IT IS NOT NECESSARY BRING THE VESSEL TO DRY-DOCK.
- 7.- REDUCES COMBUSTIBLE CONSUMPTION IN STEAMSHIPS PRODUCED BY ACCUMULATION OF INCRUSTATIONS AND CORROSION IN THE CONDENSORS.
- 8.- REDUCES TIME LOSS FOR CLEANINGS IN INTERCOOLERS, SEAWATER INLETS, AND SEAWATER VALVE INLETS.
- 9.- ELIMINATES LOSS OF SPEED DUE TO THE BLOCKAGE OF REFRIGERATION SYSTEMS.
- 10.- ELIMINATES POTENTIAL MACHINERY DAMAGE DUE TO OVERHEATING FROM BLOCKADE.
- 11.- ELIMINATES POTENTIAL SHIPMENT DAMAGE (FISH OR OTHER FOOD OR TEMPERATURE RELATED ITEMS) DUE TO FAILURE IN REFRIGERATION SYSTEMS.
- 12.- ELIMINATES POTENTIAL PASSENGERS INCONVENIENCES DUE TO FAILURES IN AIR CONDITIONER SYSTEM.
- 13.- REDUCES POWER LOSSES AND OVERHEATING OF DIESEL ENGINES BY REBOILER BLOCKAGE.

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**ADVANTAGES AND DISADVANTAGES OF THE PETION® SYSTEM COMPARED TO OTHER SYSTEMS WITH ELECTROLYTIC TANK**

PETION® SYSTEM	HYPOCHLORITE SYSTEMS
PROTECTS AGAINST BIOLOGICAL GROWTH AND CORROSION.	THE SYSTEM ONLY PROTECTS AGAINST BIOLOGICAL GROWTH, BUT INCREASES THE CORROSION, AS THE CHLORINE IS A VERY CORROSIVE AGENT.
LOW ELECTRIC CONSUMPTION. (3 A)	HIGH ELECTRIC CONSUMPTION. (60/150 A)
CHEAP ELECTRODES WITH HIGH FREQUENCY OF REPLACEMENT.	EXPENSIVE ELECTRODES WITH LOW FREQUENCY OF REPLACEMENT. CALCIUM SCALES GROW IN THE ELECTRODES.
SMALL MACHINES MAKE EXPENSIVE THE SYSTEM BIG MACHINES MAKE CHEAP THE SYSTEM.	WHEN THERE ARE MANY SEAWATER INLETS MANY ELECTRODES ARE NEEDED AND MORE EXPENSIVE.



**ADVANTAGES AND DISADVANTAGES OF THE PETION® SYSTEM COMPARED TO OTHER SYSTEMS WITHOUT ELECTROLYTIC TANK (WITH COPPER AND ALUMINIUM ELECTRODES)**

PETION® SYSTEM	SYSTEMS WITHOUT ELECTROLYTIC TANK (WITH COPPER AND ALUMINIUM ELECTRODES)
316L STAINLESS STEEL TANK WHICH ALLOWS A CORRECT MIXTURE WITH THE NEEDED DOSE WITHOUT WASTING PRODUCT. THE ELECTRODES LAST LONGER.	WITHOUT ELECTROLYTIC TANK. INSTALL THE ELECTRODES DIRECTLY IN SPECIAL CABINS OR IN THE SEAWATER INLET, SO THEY LAST LESS TIME DUE TO WATER CURRENT IN THE PIPELINE. IT NEEDS MORE ELECTRODES ONE SET IN EVERY SEAWATER INLET.
THE ELECTROLYTIC TANK WITH BY-PASS ALLOWS THE CHECKING AND REPLACEMENT AT ANY TIME IN TEN MINUTES.	THE INSTALLATION IN THE PIPELINE DOES NOT ALLOW CHECKING OR REPLACEMENT WITHOUT CLOSING THE WATER CIRCULATION. IN SHIPS, IF THEY HAVE INSTALLED THE ELECTRODE IN THE SEAWATER INLET, THE PROBLEM IS BIGGER, BECAUSE IT ONLY CAN BE REPLACED IF THE SHIP IS AT THE DOCK. IN CASE THEY INSTALL IT IN THE SLUDGE BOX IT IS POSSIBLE TO CHECK AND REPLACE CLOSING THE VALVES, BUT WOULD NOT PROTECT THE WATER INLET WHERE MAIN PROBLEMS ARE ORIGINATED.
PATENTED QUADRUPLE WATERTIGHT SYSTEM.	SYSTEM WITHOUT SPECIAL WATERTIGHT PROOF.
ONE YEAR WARRANTY FOR ELECTRODES LASTING. ALTHOUGH LAST 18 MONTHS.	WITHOUT LASTING WARRANTY.



**ADVANTAGES AND DISADVANTAGES OF THE PETION® SYSTEM COMPARED TO OTHER SYSTEMS WITH ELECTROLYTIC TANK**

PETION® SYSTEM	OTHER ELECTROLYTIC TANK SYSTEMS
316L STAINLESS STEEL TANK.	PAINTED STEEL TANK.
COPPER ELECTRODE OF MAXIMUM PURITY AND WIDER (LONG LASTING).	LOW PURITY COPPER ELECTRODE AND NARROW.



<b>PATENTED QUADRUPLE WATERTIGHT SYSTEM.</b>		
<b>IT HAS COPPER AND ALUMINIUM ELECTRODES. THE ALUMINIUM AVOIDS CORROSION WHICH IS FROM SEAWATER AND COPPER.</b>	<b>IT HAS ONLY THE COPPER ELECTRODE WHICH DOES NOT PROTECT AGAINST CORROSION.</b>	