

Product Data Sheet

Process Water | Wastewater | Water Reuse



Nyex™-a Treatment System

Overview

The Nyex™-a treatment process is the only single-step water treatment process which combines adsorption with electrochemical oxidation. The resulting process offers significant benefits to industrial and laboratory water treatment processes which require highly effective removal of organic contaminants in a simple to operate and maintain package.

- ✓ Removes organic contaminants such as COD, micropollutants, and colour from water
- ✓ Maximum flow of up to 3 m³/h per module depending on treatment load.
- ✓ No chemical dosing
- ✓ No sludge produced
- ✓ No media replacement
- ✓ Actively prevents biofilm formation
- ✓ Low maintenance
- ✓ Switch treatment on and off on-demand

How it works...

When water enters the reactor, organic contaminants are concentrated onto the surface of Arvia's proprietary adsorbent media, making them accessible for targeted oxidation. A low electrical current is simultaneously passed through the media to oxidise the adsorbed contaminants to H₂O, H₂ and CO₂. During the oxidation process the adsorbent media is regenerated, and therefore the process can continue indefinitely without interruption or downtime to replace the media.

Nyex™-a Schematics

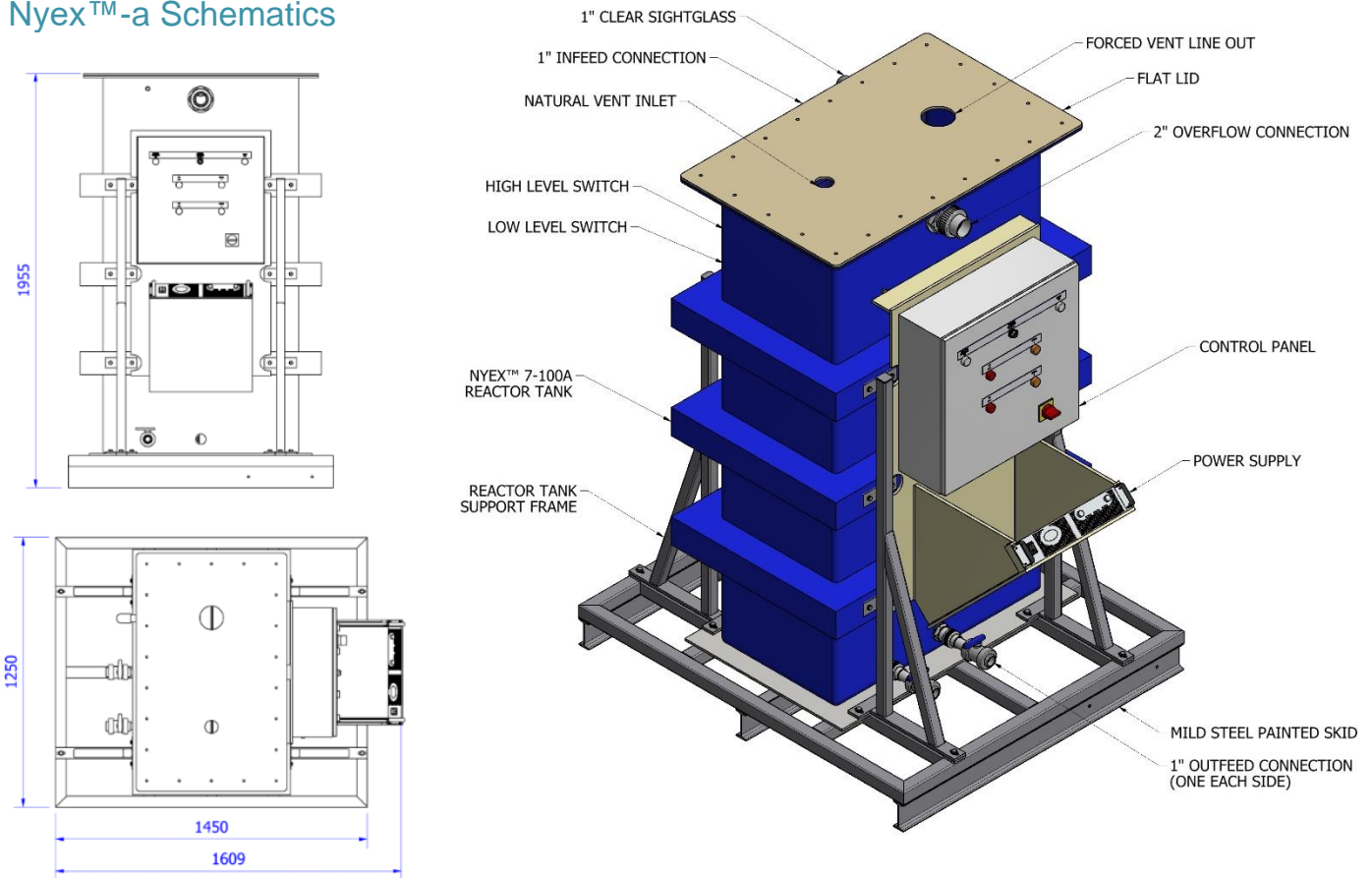


Figure 1. Left: Front and top dimensions of standard package
Figure 2. Above: Schematic of integrated package

Nyex™-a Product Information

Model: Nyex™ 7-100a		
Scope of Supply	Standard Package	Integrated Package
Nyex™ 7-100a Reactor Tank	✓	✓
Electrodes	✓	✓
Adsorbent Media	✓	✓
Mild Steel Painted Skid and Support Frame	✓	✓
Power Supply Unit 40V DC 25 Amps	-	✓
Control Panel	-	✓

Model: Nyex™ 7-100a	
Maximum Flow Rate	
Hydraulic flow per Nyex™ 7-100a Reactor (m ³ /h)	Up to 3
Typical Chemical Oxygen Demand (COD) removal range mg/L	Up to 500
Electrical Requirements (integrated package only)	
Electrical Supply (4 wire plus ground)	3 Phase 415V 50 - 60Hz + N
Operating Current (Amps)	32 Amps
Power consumption (kWh/kg COD)	10 – 20 dependant on water quality
Power consumption (kWh/m ³)	From 0.2 dependant on water quality
Switch Mode Power Supply (integrated package only)	
Voltage out (VDC)	Variable to 40V
Current (Amps)	Variable to 25A
Control selectable between Constant Voltage and Constant Current	Standard for the integrated package
Operating humidity (RH)	20 – 90% non-condensing
Maximum ambient operating temperature (°C)	45
Reverse polarity switching control	Optional
IP rating	IP3x
Treatment Reactor Tank	
Outer Casing Materials of Construction	GRP
Reactor Tank Dimensions (mm)	1550 x 750 x 2200
Inlet/Outlet Connection	1-inch tank adapter
Overflow	2-inch
Ventilation (for operating inside a building)	Forced vent line out (external operation can vent to atmosphere)
Mass of complete unit with optional power supply and control	1048kg
Operating Parameters	
pH Range	1 to 11
Water temperature Range (°C)	Less than 60
Total Suspended Solids (TSS) Maximum (mg/L)	10
Total Dissolved Solids (TDS) Maximum (mg/L)	No limit
Oil and Grease Maximum	Emulsify up stream

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