

# Automatic Organic Halogen Analyzer AOX-400



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**Nittoseiko Analytech Co., Ltd.**

As solution for environmental analysis, organic halogen in river water, industrial wastewater and soil can be measured by shaking method, column method and EOX.

Advanced autosamplers provide flexible combination of different measurement modes easily.

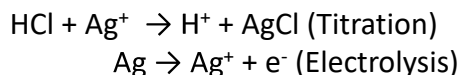


## Main Features

- ✓ 3-injection mode convertible (shaking method / column method / EOX)
- ✓ Advanced autosampler concept is space saving and reliable
- ✓ Faster measurement time
- ✓ Automatic gas flow
- ✓ No gases required except air (same as AOX-200)
- ✓ Longer lifetime of electrolyte by cell cooling system
- ✓ Increase the default number of samples
- ✓ Easy maintenance of pyrolysis tube by sliding turntable

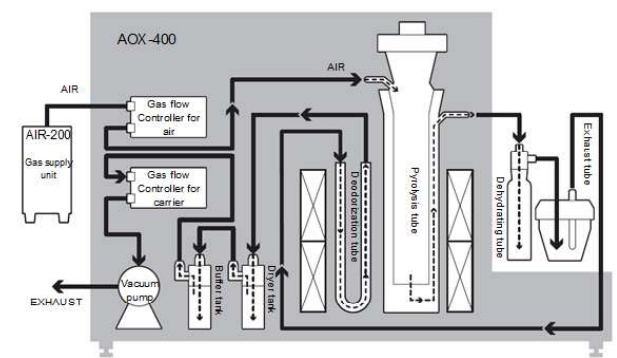
## Measurement Principal

AOX adsorbed to activated carbon is pyrolyzed in a quartz combustion tube. Combustion gases containing hydrogen halides are forced through a dehydrating tube and subsequently adsorbed within the electrolyte of a coulometric titration cell. Within the titration cell the halogen ions are quantified by an argentometric coulometry. The amount of chlorine is calculated from the quantity of electricity required for the formation of silver ions.



The gas is moved by application of suction pump.

This principle is used to destroy acetic acid vapor by returning the gases through a separate combustion tube within the furnace after passage of titration cell.



# Official Method

- ◆ ISO 9562, DIN EN 1485
  - Water quality-determination of adsorbable organic halogens (AOX/EOX)
- ◆ EPA 9020
  - Total organic halides (AOX-Column method)
  - ICR [EPA 814-B-96-002 for QC]
- ◆ DIN 38414 part 18
  - Sludge and Sediment-Determination of adsorbed organically bound halogens (AOX-Shaking method)

## Repeatability

(AOX)

Confirmation sample: 4-chlorophenol solution

Concentration (ng/mL)	Sample Volum (mL)	Theoretical Value (μg)	Recovery (%)	RSD (%) n=3
10	100	1	80 ~ 120	≦ 10
100	20	2	95 ~ 105	≦ 3

(EOX)

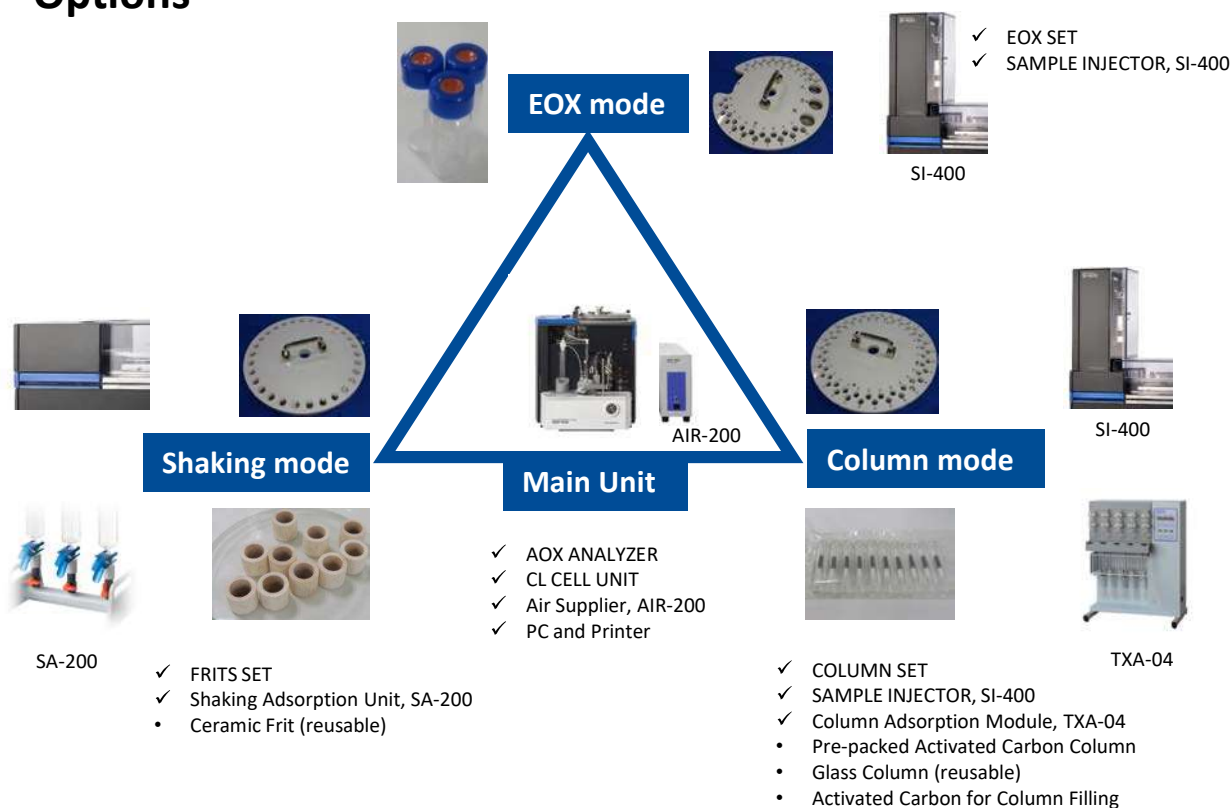
Confirmation sample: 4-chlorophenol/hexane solution

Concentration (μg/mL)	Sample Volum (μL)	Theoretical Value (μg)	Recovery (%)	RSD (%) n=5
5	100	0.5	80 ~ 110	≦ 8
50	40	2	85 ~ 105	≦ 3

Measured using AOX-400 unit connecting AIR-200

Under constant environmental temperature

## Options



## AOX-400 PART NO. LIST

### [ MAIN UNIT ]

TX6VAG	AOX ANALYZER MODEL AOX-400, W/O CL CELL UNIT, 1 SET
TX6CCL	CL CELL UNIT FOR AOX-400, 1 SET
TX5AUB	AIR SUPPLIER MODEL AIR-200 (AC115V/50,60Hz), 1 SET
TX5AUC	AIR SUPPLIER MODEL AIR-200 (AC230V/50,60Hz), 1 SET

### [ OPTION: SHAKING METHOD ]

TX6FS	FRITS SET FOR AOX-400, 1 SET
TX6QC1	PYROLYSIS TUBE CAP FOR AOX-400, 1PC
TX6QPG	OUTER PYROLYSIS TUBE FOR AOX-400, $\Phi$ 40, 1PC
TX6QPN	INNER PYROLYSIS TUBE FOR AOX-400, $\Phi$ 33, 1PC
TX5QSP	SPRING FOR PYROSIS TUBE, 2 PC/SET
SA02	SHAKING ADSORPTION UNIT MODEL SA-200, 1 SET
TX5F32	CERAMIC FRITZ, 10 PC/SET
TX5ACG	ACTIVATED CARBON FOR AIR-200, 1 PC

### [ OPTION: COLUMN METHOD ]

TX6CS	COLUMN SET FOR AOX-400, 1 SET
TX6SI	COLUMN/EOX SAMPLE INJECTOR MODEL SI-400, 1 SET
TX6QC1	PYROLYSIS TUBE CAP FOR AOX-400, 1PC
TX6QPG	OUTER PYROLYSIS TUBE FOR AOX-400, $\Phi$ 40, 1PC
TX6QPN	INNER PYROLYSIS TUBE FOR AOX-400, $\Phi$ 33, 1PC
TX5QSP	SPRING FOR PYROSIS TUBE, 2 PC/SET
TXA04	AD. MODULE, 5CHANNEL MODEL TXA-04 W/O POWER CORD
CAM085	POWER CORD (100/115V),1 PC
CAM086	POWER CORD (220/240V),1 PC
TXAPPC4	PRE-PACKED CARBON COLUMN, 100 PCS/SET
TX070A	ACTIVATED CARBON FOR AOX COLUMN FILLING, 100g, 1PC
TX057	GLASS COLUMN, 30 PCS/SET"

### [ OPTION: EOX ]

TX6EOX	EOX SET FOR AOX-400, 1 SET
TX6SI	COLUMN/EOX SAMPLE INJECTOR MODEL SI-400, 1 SET
TX6QPG	OUTER PYROLYSIS TUBE FOR AOX-400, $\Phi$ 40, 1PC
TX6QPE	MIDDLE PYROLYSIS TUBE FOR EOX, $\Phi$ 33, 1PC
TX6QPP	INNER PYROLYSIS TUBE FOR EOX, $\Phi$ 22, 1PC
TX6QSP	SPRING FOR PYROLYSIS TUBE FOR EOX, L=60mm, 2 PC/SET

## Specifications

Model	Automatic Organic Halogen Analyzer AOX-400
Measuring Object	River water, Industrial wastewater, Soil
Sample forms	Solid (AOX: activated carbon adsorbed liquid sample), Liquid (EOX: extraction solution)
Analysis method	Oxidative pyrolysis/Coulometry
Furnace temperature	150~1000 °C (Regular use: 950°C)
Sample introduction	Introduction to the open top pyrolysis tube driven by Newton's law AOX: Extrusion injection of activated carbon adsorbed sample (Column method) Drop frit with activated carbon adsorbed sample (Shaking method) EOX: Direct injection by syringe
Measurement range	Total organic halogen: 0.1 to 50 µg
Sample volume	AOX sample: 50mg or less, EOX sample: 200µL or less
Measurement time	within 10 minutes/measurement (At 2 µg sample measurement)
Number of samples	Frit : 30 samples Column : 60 samples EOX : 40 samples (Size: 2mL vials with septum)
Gas	Using AIR-200, Air gas is not required. AOX: Air (800mL/min) EOX: Air (100mL/min) + Oxygen (300mL/min)
Operation Condition	15 to 35 °C, 75%RH or less (No condensation)
Power supply	AC 100/115/230/240V, 50/60Hz, 960VA
Dimensions Weight	AOX main unit: Approx. 460(W) x 420(D) x 570H(H) mm, Approx. 37kg SI-400: Approx. 190(W) x 400(D) x 410H(H) mm, Approx. 7kg AIR-200: Approx. 100(W) x 400(D) x 220H(H) mm, Approx. 5kg
Device control and data processing	PC, Printer: compatible with Windows®

## Sampler

Shaking method	Frits set
Column method	SI-400 + Column set
EOX	SI-400 + EOX set

