

TOH - 3300

Total Organic Halogen Analyzer



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

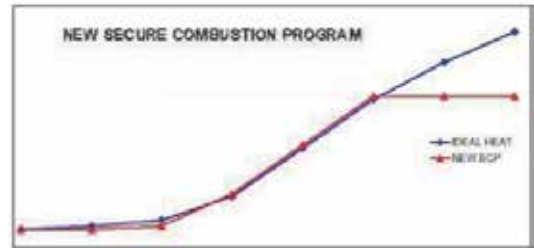
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►► Features:

Matrix Independent, unique single program for all samples.

Secure Combustion Program (SCP) enables ideal pyrolysis of substances in sample.



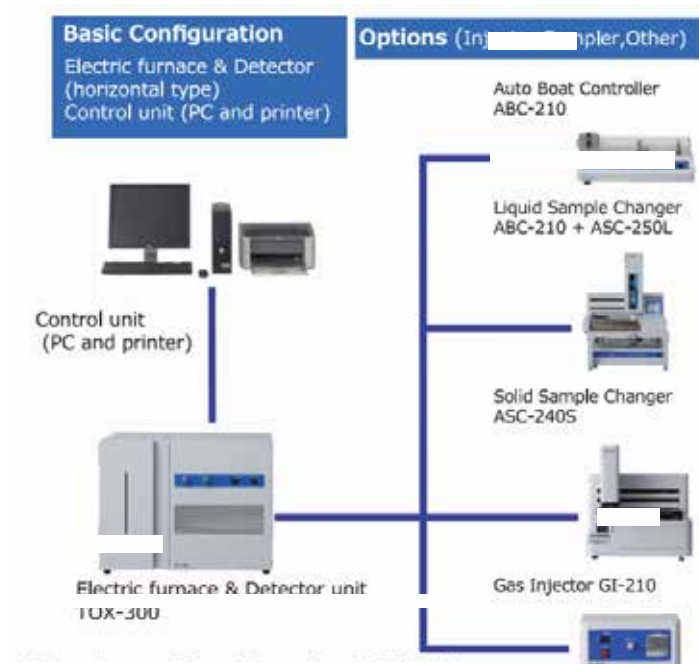
High-Speed Analysis Using the Boat Controller

Measurement is performed automatically in 6 to 12 minutes simply by placing a sample boat and starting measurement. Since the sample boat inlet box is provided with a cooling function (electronic cooling), the boat can be cooled in a short period of time for faster repetitive.



Application-Oriented System Configuration

The use of various options according to the particular sample make it possible to construct a system that precisely matches the application.



►► Measuring Principle

• Chlorine Analysis

Standard Set with Chlorine Titration Cell Unit

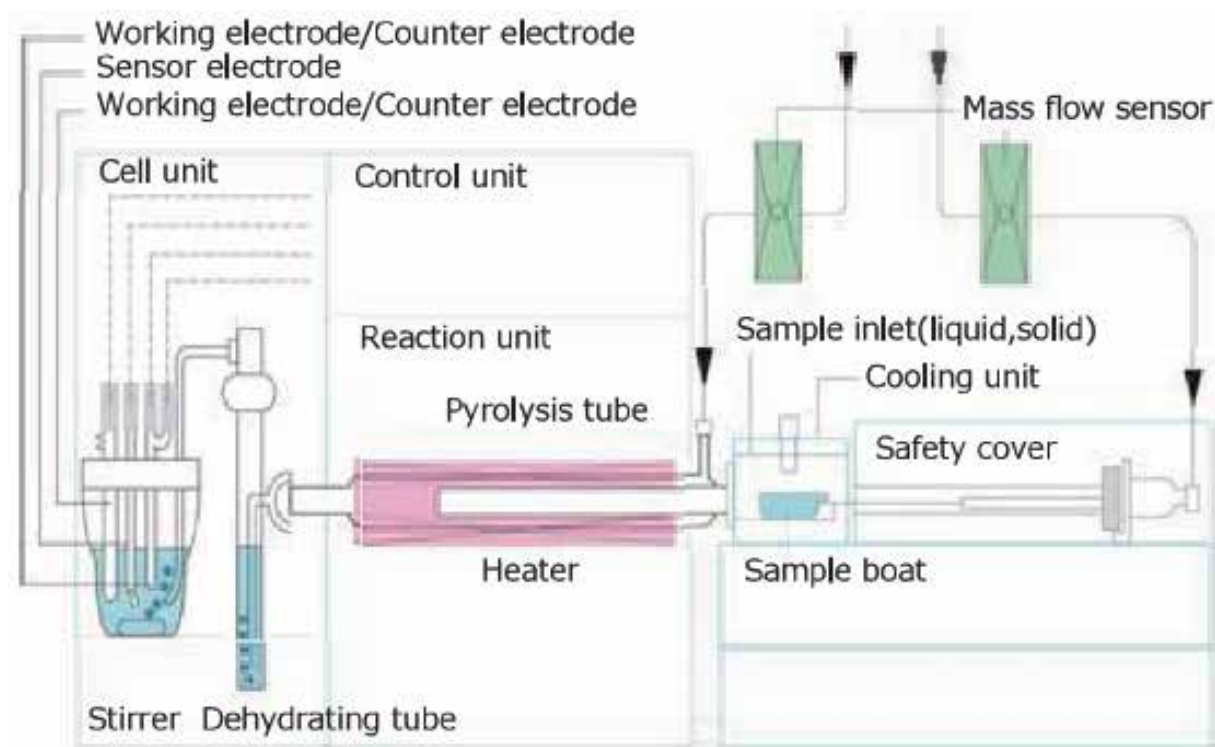
Samples are burned in an Argon/Oxygen atmosphere. The resulting chloride is lead into a titration cell where it is automatically titrated by silver ions generated coulometrically. The amount of chlorine is then calculated from the quantity of electricity required for the titration.



• Sulfur Analysis

Standard Set with Sulfur Titration Cell Unit

Samples are burned in an Argon/Oxygen atmosphere. The resulting sulfur dioxide is lead into a titration cell where it is automatically titrated by triiodide ions generated coulometrically. The amount of sulfur is then calculated from the quantity of electricity required for the titration.



►► Application:

• Chlorine Analysis

Sample Name	Sample Size(mg)	No.of Measurements	Measured Value(ppm)	RSD(%)
Lubricating Oil	30	3	34	4
Kerosene	30μℓ	3	31	3
Crude Oil	30	3	4.0	3
Rubber	20	3	210	4
Carbon Fiber	20	3	193	3
Epoxy Resin	10	3	890	5
Polycarbonate Resin	30	3	7.9	3
Photoresist	30	3	7.2	2
Aluminum Foil	20	3	5.5	6
Waste Oil	10	3	390	3
Cement	10	3	460	3

• Sulfur Analysis

Sample Name	Sample Size(mg)	No.of Measurements	Measured Value(ppm)	RSD(%)
Lubricating Oil	3	3	0.76%	3
Heavy Oil	10	3	1.2%	3
Engine Oil	5	3	0.41%	4
Polypropylene	30	3	2.0	5
Surface Activator	5	3	883	0.5
Rubber	15	3	0.55%	1
Manganese Oxide	30	3	37	7
Zinc Oxide	30	3	14	0.7
Lanolin	30	3	39	5
Fish Oil	20	3	180	4
Soil	5	3	369	6

►► **Mode AOX:**

• **Total Organic Halogen Measurement (AOX)**

Easy, rapid and accurate Total Organic Halogen measurement in environmental and industrial waste water by Mitsubishi adsorption and coulometry technique.

• **Measuring principle**

1. Adsorption and washing

For adsorbing AOX, flow sample water, 10 — 200ml, through activated carbon with constant rate. After adsorption, wash the carbon by nitrate solution for eliminating inorganic halogens.

2. Combustion

The activated carbon on a sample boat is inserted into a heater furnace by Auto Boat Controller. AOX is converted to hydrogen halide by oxidative combustion.

3. Titration

Hydrogen halide is introduced into a titration cell for silver titration.

Halogen content is calculated by electrical quantities based on Faraday's law.

• **Adsorption module**

Optional unit for automatic AOX adsorption and inorganic halogen washing.



Syringe	Disposable syringe 20ml
Flow method	Automatic syringe system
Maximum Flow Volume	
Syringe for flowing samples:	300ml (10 x n ml (n=1 to 30))
Syringe for washing:	50ml (5 x n ml (n=1. to 10))
Syringe quantity	5 pcs (for flowing samples or washing inorganic halide)
Column	3mm ϕ x 40mm, two-stage glass column
Power	AC 100V to 240V, 50/60Hz, 50VA
Dimensions / Weight	Approx. 480(W) x 270(D) x 530(H) mm / 13 kg

►► Standard Specifications

Models : Chlorine and Sulfur Analyzer/Total Organic Halogen Analyzer Model TOH-3300

Analysis methods : Oxidation decomposition / Coulometric titration

Oxidation decomposition : Quartz tube combustion method

Samples : Liquids, solids and gaseous

Sample Insertion : Automatic insertion by the sample boat

Pyrolytic furnace : Horizontal furnace: Up to 1100 degrees Celsius

Detection method : Oxidation-reduction potential (potentiometric detection by potential)

Detection electrode : Chlorine measurement: Silver electrode
 Sulfur measurement: Platinum electrode

Titration control : Automatic control of electrolytic current

Measurement range : Refer to Table Measurement Ranges".

►► Measurement ranges

Absolute volume :	Solid samples	Liquid samples	Gas samples
Chlorine: 0.05µg/ml to 50 µg	2µg/g (30mg)	0.5µg/ml (100µl)	5mg/m ³ (10ml)
Sulfur: 0.05µg/ml to 50 pg	2µg/g (30mg)	0.5µg/ml (100µl)	5mg/m ³ (10ml)

Sample volume : Liquid sample: 100 µl or less, Solid sample: 30mg or less

Measurement Time : Within 10 minutes/One measurement (At 2pg measurement)

Temperature and humidity : 15 to 35 degrees Celsius, 80%RH or less (No condensation)

Dimensions : TOH-3300 main unit: 550(W) x 360 (D) X 437 (H) mm

ABC-210 unit: 440(W) X 250(D) X 180(H) mm

Weight : TOH-3300 main unit: 36kg ABC-210 unit: 11kg

Computer : Windows® English version pre-install

Printer : Windows®-compatible printer

Gas : Oxygen (purity : 99.7 % or more) Argon (purity : 99.98 % or more)

Power : TOH-3300 main unit: AC100/115/230/240V, 50/60Hz, 980VA

ABC-210 unit: AC100/115/230/240V, 50/60Hz, 40VA



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