

In the table, recommended methods for determination of INNOWATREAT target contaminations present in coke oven wastewater, are presented.

No.	Substance	Method characteristics			
		Name	Concentration range (without dilution)	Need for preliminary sample preparation	Apparatus
1.	PAHs (tars)	Gas chromatography with flame ionization detector (GC-FID)	0.02 – 100 mg/dm ³	Yes (SPE-solid phase extraction recommended)	Gas chromatograph, non-polar capillary column (RXI-5), flame ionization detector, SPE columns
		Gas chromatography conjugated with mass spectrometer (GC-MS)	0.001 – 10 mg/dm ³		Gas chromatograph, non-polar capillary column (HP-5ms), quadrupole mass detector, SPE columns
		High performance liquid chromatography with UV detector (HPLC-UV)	0.02 – 100 mg/dm ³		High performance liquid chromatograph, non-polar analytical column (c-18), UV detector, SPE columns
2.	Cyanides (easily liberatable)	Colorimetric barbituric-pyridine method	0.01 – 1.0 mg/dm ³	Yes*	Distillation set, laboratory glass, set of reagents, spectrophotometer
		HACH Lange LCK 315	0.01 – 0.6 mg/dm ³		Distillation set, dedicated tests, spectrophotometer
		HACH Lange LCK 319	0.03 – 0.35 mg/dm ³	No*	Dedicated tests, spectrophotometer
		Potentiometry with argentometric titration	0.05 – 100 mg/dm ³		Laboratory glass, set of reagents, dedicated electrodes, laboratory multimeter
		Ion chromatography with pulsed amperometric detection	0.05 – 5 mg/dm ³		Ion chromatograph, analytical column AS-7, silver redox electrode
		Flow analysis (CFA or FIA) with photometric or amperometric detection	0.002 – 0.5 mg/dm ³		Dedicated device, set of reagents
3.	Sulphides	Photometric method for water and acid soluble sulphides with methyl blue formation	0.04 – 1.5 mg/dm ³	Yes	Laboratory glass, set of reagents, spectrophotometer
		HACH Lange LCK 653	0.1 – 2.0 mg/dm ³		Distillation set, dedicated tests, spectrophotometer
		Potentiometry with argentometric titration (water soluble sulphides)	0.05 – 100 mg/dm ³	No	Laboratory glass, set of reagents, dedicated electrodes, laboratory multimeter

		Ion chromatography with pulsed amperometric detection (water soluble sulphides)	0.05 – 5 mg/dm ³		Ion chromatograph, analytical column AS-7, silver redox electrode
4.	Phenols	4-aminoantipyrine with chloroform extraction	0.001 – 1.0 mg/dm ³	Yes	Distillation set, laboratory glass, set of reagents, spectrophotometer
		4-aminoantipyrine without chloroform extraction	0.1 – 50 mg/dm ³		Distillation set, laboratory glass, set of reagents, spectrophotometer
		HACH Lange LCK 345	0.05 – 5 mg/dm ³	No	Dedicated tests, spectrophotometer
		Gas chromatography with flame ionization detector and mass spectrometry	0.1 – 100 mg/dm ³		Gas chromatograph, capillary column PEG (Stabilwax), flame ionization detector
		Flow analysis (CFA or FIA)	0.01 – 1 mg/dm ³		Dedicated device, set of reagents
5.	Ammonia/ammonium nitrogen	Distillation with titration	do 100 mg/dm ³	No	Distillation set, laboratory glass, set of reagents
		HACH Lange LCK 302, 303, 304, 305	0.015 – 130 mg/dm ³		Dedicated tests, spectrophotometer
		Ion chromatography with conductometric detector	0.1 – 10 mg/dm ³		Ion chromatograph, analytical column, conductometric detector
		Flow analysis (CFA or FIA) with spectrometric detection	0.1 – 10 mg/dm ³		Dedicated device, set of reagents

* Preliminary sample preparation refers only to easily liberatable cyanides determination. In case of complex cyanides, the preliminary sample treatment by means of distillation is always required, and the obtained distillate is introduced to any of analytical method recommended for easily liberatable cyanides determination