



## n-Hexane 95% for EOX analysis

### Extractable organically bound halogens

(abbreviated **EOX** with X for chlorine, bromine and - with restrictions - iodine) is a measure of the organic halogen load in samples as sludges or sediments. These organic halides are the result of using halogen containing materials in processes as water treatment, bleaching or during a product synthesis. These molecules have high persistence in the nature increasing soil toxicity and accumulating in the food chain of aquatic organisms. Sludge and sediments analysis are important for environmental protection.

The determination of EOX is described in **DIN 38414-17:2017** for the examination of water, waste water and sludge. Sludge and sediments (group S) - Part 17 (also known as **DIN 38414-S17**).

In brief, after freeze-drying (DIN 19747) or air-drying (DIN 38414-22) of the sludge/sediment and extraction of EOX with **n-hexane**, iso-hexane, cyclohexane or petroleum ether is carried out. Extractable organically bound halogens (EOX) are collected and burned in an oxygen stream. The organically bound halogens are converted into hydrogen halides; their mass fraction is mostly determined by **microcoulometry**.



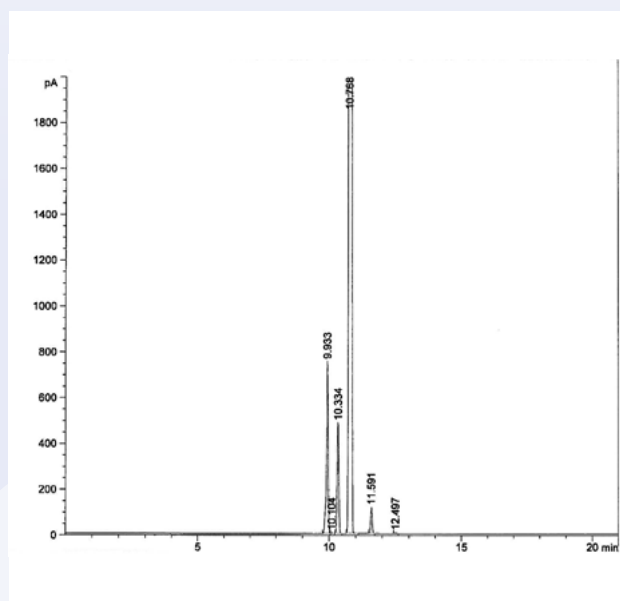
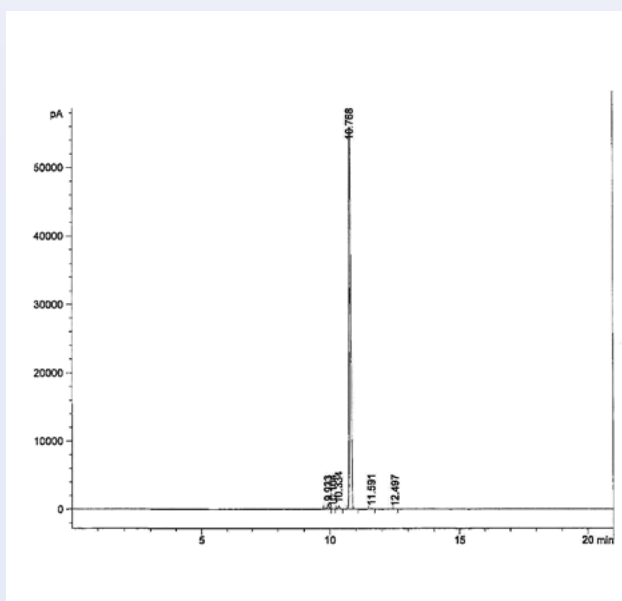
If the residual water content of the sludge/sediment is greater than two percent immediately before extraction, chemical drying must be carried out by grinding with anhydrous sodium sulfate.

The lower application limit of this standard is at 0.2 mg chlorine per kilogram of dry mass. Low and medium volatile organohalides are not determined quantitatively with this method. The applicability of the method to solids other than sludge and sediments is not excluded; however, it must be tested on a case-by-case basis.



Specifications of PanReac AppliChem's new n-Hexane for EOX determination	
Assay (as isomers) (GC)	≥ 98.5%
Assay (as n-Hexane) (GC)	≥ 95.0%
Identity (IR)	passes test
Non-volatile matter	≤ 0.0005%
Extractable organic halides (EOX)	≤ 1 ppm
Suitability for hydrocarbons index determination - GC/FID individual signal from C11 to C40 (as Tetradecane)	≤ 3 ppb
Water	≤ 0.01%

See below the chromatogram of PanReac AppliChem's new developed **n-Hexane 95% for EOX analysis**, showing the main peaks obtained and their retention times.



**GC-FID chromatogram (total and zoom-in)**

Ret. time (min)	Area %	Name
9.933	1.3576	2,2-Dimethylbutane
10.104	0.0025	Unknown
10.334	0.7750	3-Methylpentane
10.768	97.6900	n-Hexane
11.591	0.1724	Unknown
12.497	0.0023	Unknown

## n-Hexane 95% for EOX analysis

All chemicals used for the **DIN 38414-S17** method shall be of analytical grade and shall be checked before use. At ITW Reagents we have developed a new **PanReac AppliChem grade of n-hexane** which meets the high purity requirements of this standard.

Product code	Product name	CAS number	Pack size
131250.1611	Cyclohexane (Reag. USP, Ph. Eur.) for analysis, ACS, ISO	110-82-7	1 L
131250.1612			2.5 L
131250.0314			5 L
131250.0316			25 L
131250.0537			30 L
<b>173242.1612</b>	<b>n-Hexane 95% for EOX analysis</b>	<b>110-54-3</b>	<b>2.5 L</b>
121347.1611	Hexane, alkanes mixture for analysis	92112-69-1	1 L
121347.1612			2.5 L
121347.0314			5 L
121347.0316			25 L
121347.0537			30 L
182884.1211	Hydrochloric Acid 0.01 mol/L (0.01N) volumetric solution	7647-01-0	1 L
131315.1611	Petroleum Ether 40-60°C for analysis, ACS, ISO	64742-49-0	1 L
131315.1612			2.5 L
131315.0314			5 L
131315.1714			5 L
131315.0515			10 L
131315.0316			25 L
131315.0537			30 L
131315.0619			200 L
131716.1210	Sodium Sulfate anhydrous (Reag. USP) for analysis, ACS, ISO	7757-82-6	500 g
131716.1211			1 kg
131716.1214			5 kg
131716.0416			25 kg
131058.1211	Sulfuric Acid 96% (Reag. Ph. Eur.) for analysis, ISO	7664-93-9	1 L
131058.1611			1 L
131058.1212			2.5 L
131058.1612			2.5 L
131058.1214			5 L
131058.0716			25 L



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IP-060EN

**AppliChem GmbH**  
Ottoweg 4  
DE-64291 Darmstadt  
Germany  
Phone +49 6151 9357 0  
Fax +49 6151 9357 11  
[info.de@itwreagents.com](mailto:info.de@itwreagents.com)

**Nova Chimica Srl**  
Via G. Galilei, 47  
I-20092 Cinisello Balsamo  
(Milano) Italy  
Phone +39 02 66045392  
Fax +39 02 66045394  
[info.it@itwreagents.com](mailto:info.it@itwreagents.com)

**PanReac Química SLU**  
C/ Garraf 2, Polígono Pla de la Bruguera  
E-08211 Castellar del Vallès  
(Barcelona) Spain  
Phone +34 937 489 400  
Fax +34 937 489 401  
[info.es@itwreagents.com](mailto:info.es@itwreagents.com)



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