

IMEP-21

Trace Elements, PCBs & PAHs in Sewage Sludge

Certified Reference Values for Trace Elements

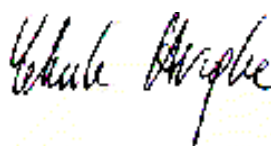
analyte	certified value $\text{mg}\cdot\text{kg}^{-1}$ (dry mass)	expanded uncertainty $U, k=2$ $\text{mg}\cdot\text{kg}^{-1}$ (dry mass)
Cadmium	19.23	0.24
Chromium	209	10
Copper	843	40
Lead	619.8	8.7
Mercury	9.03	0.36
Nickel	68.5	1.0
Zinc	3160	72

Certified Reference Values for Polychlorinated Biphenyls

analyte	certified value ng·g ⁻¹ (dry mass)	expanded uncertainty <i>U</i> , <i>k</i> =2 ng·g ⁻¹ (dry mass)
PCB_28	48.2	9.0
PCB_52	92.3	4.7
PCB_101	121	6.9
PCB_118	87.4	4.1
PCB_153	203	9.1
PCB_180	157	12
Sum_PCBs	709	20

Certified Reference Values for Polycyclic Aromatic Hydrocarbons

analyte	certified value ng·g ⁻¹ (dry mass)	expanded uncertainty <i>U</i> , <i>k</i> =2 ng·g ⁻¹ (dry mass)
Anthracene	104	18
Benz(a)anthracene	386	56
Benz(a)pyrene	383	91
Benz(b+k)fluoranthene	1110	160
Benzo(ghi)perylene	508	58
Fluoranthene	916	63
Fluorene	90	22
Indeno(1,2,3-cd)pyrene	370	54
Naphthalene	116	27
Phenanthrene	746	77
Pyrene	1280	120
Sum_PAHs	6010	260



Dr. Yetunde Aregbe
IMEP-21 Co-ordinator
IRMM



Dr. Philip Taylor
IM unit-head
IRMM

IMEP: an IRMM programme, with the aim to enable evaluation of performance in chemical measurements and to establish their degree of international equivalence

The certified reference values on this certificate were derived from reference measurements with demonstrated traceability and adequately demonstrated uncertainty.

The following institutes collaborated in the certification of the IMEP-21 sewage sludge certified test samples



European Commission – Joint Research Centre
Institute for Reference Materials and Measurements
(IRMM)
Isotope Measurement Unit
Retieseweg 111
B-2440 Geel
Belgium

http://www.irmm.jrc.be/html/interlaboratory_comparisons/imep



Studiecentrum voor Kernenergie
Centre d'étude de l'énergie nucléaire
Boeretang 200
2400 MOL
Belgium

<http://www.sck.be>



Federal Institute for Materials Research and Testing
(BAM)
Unter den Eichen 87
D-12205 Berlin
Germany

<http://www.bam.de>



VITO_Flemish Institute for technological research
Boeretang 200
BE-2400 MOL
Belgium

<http://www.vito.be/>



Universität für Bodenkultur Wien
University of Natural Resources and Applied Life
Sciences
Vienna, Austria

<http://www.boku.ac.at/>