



Potvrda o akreditaciji Accreditation Certificate

Ovime se utvrđuje da je

This is to recognize that

Državni hidrometeorološki zavod

Grič 3, HR-10000 Zagreb

Služba kemijski laboratorij

Avenija Većeslava Holjevcva 20, HR-10000 Zagreb

osposobljen prema zahtjevima norme

is competent according to

HRN EN ISO/IEC 17025:2017

(ISO/IEC 17025:2017; EN ISO/IEC 17025:2017)

za/to carry out

Ispitivanje oborine i vanjskog zraka

Testing of precipitation and ambient air

u području opisanom u prilogu koji je sastavni dio ove potvrde o akreditaciji.

for the scope described in the annex which is the constituent part of this accreditation certificate.

Br./No.: 1427

Klasa/Ref.No.: 383-02/17-30/063

Urbroj/Id.No.: 569-05/3-20-04

Zagreb, 2020-01-15

Akreditacija istječe•Accreditation expiry: 2023-07-23

Prva akreditacija•Initial accreditation: 2013-07-24

HAA je potpisnica multilateralnog sporazuma s Europskom organizacijom za akreditaciju (EA)

HAA is a signatory of the European co-operation for Accreditation (EA) Multilateral Agreement

v.d. Ravnatelja:

Acting Director General:

Tihomir Babić, dipl. ing.



HAA

Hrvatska akreditacijska agencija
Croatian Accreditation Agency

PRILOG POTVRDI O AKREDITACIJI br: 1427

Annex to Accreditation Certificate Number:

Klasa/Ref. No.: 383-02/17-30/063

Urbroj/Id. No.: 569-05/3-20-03

Datum izdanja priloga /Annex Issued on: 2020-01-15

Zamjenjuje prilog/Replaces Annex:

Klasa/Ref. No.: 383-02/17-30/063

Urbroj/Id. No.: 569-03/6-18-31

Datum izdanja priloga /Annex Issued on: 2018-07-24

Norma: HRN EN ISO/IEC 17025:2017

Standard: (ISO/IEC 17025:2017; EN ISO/IEC 17025:2017)

Akreditacija istječe: 2023-07-23

Accreditation expiry:

Prva akreditacija: 2013-07-24

Initial accreditation:

Akreditirani laboratorij

Accredited Laboratory

Državni hidrometeorološki zavod

Grič 3, HR-10000 Zagreb

Služba kemijski laboratorij

Avenija V. Holjevca 20, HR-10000 Zagreb

Područje akreditacije:

Scope of Accreditation:

Ispitivanje oborine i vanjskog zraka

Testing of precipitation and ambient air

Važeće izdanje Priloga dostupno je na web adresi: www.akreditacija.hr /
Valid issue of the Annex is available at the web address: www.akreditacija.hr

v. d. Ravnatelja:

Acting Director General:

Tihomir Babić, dipl. ing.

PODRUČJE AKREDITACIJE / SCOPE OF ACCREDITATION

Br. No.	Materijali/Proizvodi Materials/Products	Vrsta ispitivanja/Svojstvo Type of test/Property Raspon/Range	Metoda ispitivanja Test method																		
1.	Oborina Precipitation	<p>Određivanje otopljenih glavnih iona u oborini ionskom kromatografijom <i>Determination of main ion concentrations by ion chromatography</i></p> <p>raspon/range:</p> <table border="1"> <thead> <tr> <th>analit/analyte</th> <th>c / (mg/mL)</th> </tr> </thead> <tbody> <tr> <td>Cl⁻</td> <td>0,0500 – 100</td> </tr> <tr> <td>NO₃⁻-N</td> <td>0,0565 – 10,0</td> </tr> <tr> <td>SO₄²⁻-S</td> <td>0,0501 – 10,0</td> </tr> <tr> <td>Na⁺</td> <td>0,0500 – 100</td> </tr> <tr> <td>NH₄⁺-N</td> <td>0,0389 – 7,00</td> </tr> <tr> <td>K⁺</td> <td>0,0500 – 8,00</td> </tr> <tr> <td>Mg²⁺</td> <td>0,0500 – 8,00</td> </tr> <tr> <td>Ca²⁺</td> <td>0,0500 – 20,0</td> </tr> </tbody> </table>	analit/analyte	c / (mg/mL)	Cl ⁻	0,0500 – 100	NO ₃ ⁻ -N	0,0565 – 10,0	SO ₄ ²⁻ -S	0,0501 – 10,0	Na ⁺	0,0500 – 100	NH ₄ ⁺ -N	0,0389 – 7,00	K ⁺	0,0500 – 8,00	Mg ²⁺	0,0500 – 8,00	Ca ²⁺	0,0500 – 20,0	<p>HRN EN ISO 10304-1:2009 (ISO 10304-1:2007; EN ISO10304-1:2009) + HRN EN ISO 14911:2001 (ISO 14911:1998; EN ISO 14911:1999)</p>
analit/analyte	c / (mg/mL)																				
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Ca ²⁺	0,0500 – 20,0																				
2.	Vanjski zrak- lebdeće čestice (PM _{2,5}) Ambient air-suspended particulate matter (PM _{2,5})	<p>Određivanje glavnih iona u frakciji lebdećih čestica PM_{2,5} ionskom kromatografijom <i>Determination of main ion concentrations in PM_{2,5} particle fraction by ion chromatography</i></p> <p>raspon/range:</p> <table border="1"> <thead> <tr> <th>analit/analyte</th> <th>c / (µg/m³)</th> </tr> </thead> <tbody> <tr> <td>Cl⁻</td> <td>0,00909 – 1,82</td> </tr> <tr> <td>NO₃⁻</td> <td>0,0456 – 24,14</td> </tr> <tr> <td>SO₄²⁻</td> <td>0,0272 – 16,33</td> </tr> <tr> <td>Na⁺</td> <td>0,00545 – 1,82</td> </tr> <tr> <td>NH₄⁺</td> <td>0,00545 – 7,03</td> </tr> <tr> <td>K⁺</td> <td>0,00545 – 1,82</td> </tr> <tr> <td>Mg²⁺</td> <td>0,00545 – 1,82</td> </tr> <tr> <td>Ca²⁺</td> <td>0,00545 – 1,82</td> </tr> </tbody> </table>	analit/analyte	c / (µg/m ³)	Cl ⁻	0,00909 – 1,82	NO ₃ ⁻	0,0456 – 24,14	SO ₄ ²⁻	0,0272 – 16,33	Na ⁺	0,00545 – 1,82	NH ₄ ⁺	0,00545 – 7,03	K ⁺	0,00545 – 1,82	Mg ²⁺	0,00545 – 1,82	Ca ²⁺	0,00545 – 1,82	<p>HRI CEN/TR 16269:2017 (CEN/TR 16269:2011)</p>
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Br. No.	Materijali/Proizvodi Materials/Products	Vrsta ispitivanja/Svojstvo Type of test/Property Raspon/Range	Metoda ispitivanja Test method														
3.		<p>Određivanje koncentracije benzo(a)pirena metodom plinske kromatografije vezane na spektrometriju masa (GC-MS) <i>Determination of benzo(a)pyrene concentration by gas chromatography linked to mass spectrometry (GC-MS)</i></p> <p>raspon/ range: 0,07 ng/m³ - 1,53 ng/m³</p>	<p>HRN EN 15549:2008 (EN 15549:2008)</p>														
4.	<p>Vanjski zrak- lebdeće čestice (PM₁₀) <i>Ambient air-suspended particulate matter (PM₁₀)</i></p>	<p>Određivanje koncentracije benz[a]antracena, krizena, benzo[b+j+k]fluorantena, dibenz[a,h]antracena, indeno[1,2,3-cd]pirena i benzo[g,h,i]perilena metodom plinske kromatografije vezane na spektrometriju masa (GC-MS) <i>Determination of concentration of benz[a]anthracene, chrysene, benzo[b+j+k]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-cd]pyrene and benzo[ghi]perylene by gas chromatography linked to mass spectrometry (GC-MS)</i></p> <p>raspon/ range:</p> <table border="1" data-bbox="579 1384 1193 1948"> <thead> <tr> <th data-bbox="579 1384 970 1496">analit/ analyte</th> <th data-bbox="970 1384 1193 1496">c / (ng/m³)</th> </tr> </thead> <tbody> <tr> <td data-bbox="579 1496 970 1574">benzo(a)antracen <i>benz[a]anthracene</i></td> <td data-bbox="970 1496 1193 1574">0,07 - 1,53</td> </tr> <tr> <td data-bbox="579 1574 970 1653">krizen <i>chrysene</i></td> <td data-bbox="970 1574 1193 1653">0,07 - 1,56</td> </tr> <tr> <td data-bbox="579 1653 970 1731">benzo(b+j+k)fluoranten <i>benzo[b+j+k]fluoranthene</i></td> <td data-bbox="970 1653 1193 1731">0,38 - 7,65</td> </tr> <tr> <td data-bbox="579 1731 970 1809">dibenz(a,h)antracen <i>dibenz[a,h]anthracene</i></td> <td data-bbox="970 1731 1193 1809">0,16 - 3,15</td> </tr> <tr> <td data-bbox="579 1809 970 1888">indeno(1,2,3-cd)piren <i>indeno[1,2,3-cd]pyrene</i></td> <td data-bbox="970 1809 1193 1888">0,07 - 1,55</td> </tr> <tr> <td data-bbox="579 1888 970 1948">benzo(g,h,i)perilen <i>benzo[ghi]perylene</i></td> <td data-bbox="970 1888 1193 1948">0,15 - 2,93</td> </tr> </tbody> </table>	analit/ analyte	c / (ng/m ³)	benzo(a)antracen <i>benz[a]anthracene</i>	0,07 - 1,53	krizen <i>chrysene</i>	0,07 - 1,56	benzo(b+j+k)fluoranten <i>benzo[b+j+k]fluoranthene</i>	0,38 - 7,65	dibenz(a,h)antracen <i>dibenz[a,h]anthracene</i>	0,16 - 3,15	indeno(1,2,3-cd)piren <i>indeno[1,2,3-cd]pyrene</i>	0,07 - 1,55	benzo(g,h,i)perilen <i>benzo[ghi]perylene</i>	0,15 - 2,93	<p>HRS CEN/TS 16645:2016 (CEN/TS 16645:2014) + PO-7.2.3, rev. 0 2019-08-26</p>
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5.	Vanjski zrak <i>Ambient air</i>	<p>Određivanje masene koncentracije PM₁₀ i PM_{2,5} frakcije lebdećih čestica <i>Determination of mass concentration of PM₁₀ and PM_{2,5} particle fraction</i></p> <p><i>raspon/range:</i></p> <p>PM₁₀: 1 – 150 µg m⁻³ PM_{2,5}: 1 – 120 µg m⁻³</p>	<p>HRN EN 12341:2014 (<i>EN 12341:2014</i>)</p>