INA
INDUSTRIJA NAFTE, d.d.
Rafinerije i marketing/*Refining & marketing*
Razvoj/*Development*
Istraživanje i razvoj/*Research & development*
Centralni ispitni laboratorij/*Central testing laboratory*

# POPIS AKREDITIRANIH METODA ISPITIVANJA

## *LIST OF ACCREDITED TESTING METHODS*

| Br./No | Metoda ispitivanja/*Testing method* | Godina izdanja/*Year of publication* |
|---|---|---|
| 1. | **HRN EN 14275** Goriva za motorna vozila -- Ocjena kvalitete benzina i dizelskoga goriva -- Uzorkovanje iz pumpi na benzinskim postajama i komercijalnih istakača goriva<br>*Automotive fuels -- Assessment of petrol and diesel fuel quality -- Sampling from retail site pumps and commercial site fuel dispensers* | **2013.** |
| 2. | **HRN EN 13016-1**Tekući naftni proizvodi -- Tlak para -- 1. dio: Određivanje tlaka para ugljikovodika zasićenih zrakom (ASVP) i izračunavanje tlaka para ugljikovodika u suhom zraku (DVPE)<br>*Liquid petroleum products -- Vapour pressure -- Part 1: Determination of air saturated vapour pressure (ASVP) and calculated dry vapour pressure equivalent (DVPE)* | **2018.** |
| 3. | **HRN EN ISO 12185** Nafta i naftni proizvodi -- Određivanje gustoće -- Metoda s oscilirajućom U-cijevi<br>*Crude petroleum and petroleum products -- Determination of density -- Oscillating U-tube method* | **1999.** |
| 4. | **ASTM D4052** Standard Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density | **2022.** |
| 5. | **HRN EN ISO 3405** Naftni proizvodi -- Određivanje značajki destilacije pri atmosferskom tlaku<br>*Petroleum and related products from natural or synthetic sources -- Determination of distillation characteristics at atmospheric pressure* | **2019.** |
| 6. | **ASTM D86** Standard Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure | **2023.** |
| 7. | **HRN EN ISO 2719** Određivanje točke paljenja -- Metoda u zatvorenoj posudi po Pensky-Martensu (Postupak A i C)<br>*Determination of flash point -- Pensky-Martens closed cup method -- (Procedure A and C)* | **2016/A1:2021.** |
| 8. | **ASTM D7042** Standard Test Method for Dynamic Viscosity and Density of Liquids by Stabinger Viscometer (and the Calculation of Kinematic Viscosity) | **2021a.** |
| 9. | **HRN EN 116** Dizelsko gorivo i loživo ulje ekstra lako -- Određivanje točke filtrabilnosti -- Metoda postupnog hlađenja<br>*Diesel and domestic heating fuels -- Determination of cold filter plugging point -- Stepwise cooling bath method* | **2015.** |
| 10. | **HRN EN ISO 4264** Naftni proizvodi -- Izračunavanje cetanskog indeksa za srednje destilatna goriva pomoću jednadžbe s četiri veličine<br>*Petroleum products -- Calculation of cetane index of middle-distillate fuels by the four variable equation* | **2018.** |

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| 11. | **HRN EN 228** Goriva za motorna vozila – Bezolovni motorni benzin – Zahtjevi i metode ispitivanja<br>*Automotive fuels – Unleaded petrol – Requirements and test methods – National Annex* | **2017/NA:2020/ Ispr.1:2020** |
| 12. | **HRN EN 13723** Naftni proizvodi – Određivanje male količine olova u motornim benzinima - - Valno disperzivna rendgenska fluorescentna spektrometrija (XRF)<br>*Petroleum products – Determination of low lead contents in gasolines – Wavelength-dispersive X-ray fluorescence spectrometry (XRF)* | **2003.** |
| 13. | **HRN EN 15553** Naftni proizvodi i srodni materijali – Određivanje vrste ugljikovodika – Adsorpcijska metoda s fuorescentnim indikatorom<br>*Petroleum products and related materials – Determination of hydrocarbon types – Fluorescent indicator adsorption method* | **2021.** |
| 14. | **HRN EN 238/A1** Tekući naftni proizvodi – Benzin – Određivanje količine benzena pomoću infracrvene spektrometrije<br>*Liquid petroleum products – Petrol – Determination of the benzene content by infrared spectrometry* | **1997/A1:2005** |
| 15. | **HRN EN 13132** Tekući naftni proizvodi – Bezolovni benzin – Određivanje organskih kisikovih spojeva i ukupnog sadržaja organski vezanog kisika plinskom kromatografijom s preusmjeravanjem toka<br>*Liquid petroleum products – Unleaded petrol – Determination of organic oxygenate compounds and total organically bound oxygen content by gas chromatography using column switching* | **2002.** |
| 16. | **Vlastita metoda *In-house method***<br>**50340079-578-21**<br>***Modificirana* HRN EN 13132** Tekući naftni proizvodi – Bezolovni benzin – Određivanje organskih kisikovih spojeva (eteri s 5 ili više C-atoma, drugi oksigenati) plinskom kromatografijom s preusmjeravanjem toka<br>***Modified* HRN EN 13132** *Liquid petroleum products – Unleaded petrol – Determination of organic oxygenate compounds ((ethers with 5 or more carbon atoms, other oxygenates) by gas chromatography with flow diversion* | **2021.** |
| 17. | **ASTM D5291** Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants | **2021.** |

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| 18. | **Vlastita metoda *In-house method***<br>**50340079-298-20**<br>***Modificirana* ASTM D5291 postupak A** Određivanje ugljika, vodika i dušika<br>***Modified* ASTM D5291 procedure A** Determination of carbon, hydrogen and nitrogen | **2020.** |
| 19. | **ASTM D2622** - Standard Test Method For Sulfur In Petroleum Products By Wavelength Dispersive X-Ray Fluorescence Spectrometry | **2021.** |
| 20. | **HRN EN 12916** Naftni proizvodi – Određivanje tipova aromatskih ugljikovodika u srednjim destilatima – Metoda tekućinske kromatografije visokog učinka s detektorom indeksa loma (Postupak A)<br>Petroleum products – Determination of aromatic hydrocarbon types in middle distillates – High performance liquid chromatography method with refractive index detection (Procedure A) | **2022.** |
| 21. | **HRN EN ISO 20846** Naftni proizvodi – Određivanje količine sumpora u gorivima za motorna vozila – Metoda ultraljubičaste fluorescencije<br>Petroleum products – Determination of sulfur content of automotive fuels – Ultraviolet fluorescence method | **2019.** |
| 22. | **HRN EN 14078** Tekući naftni proizvodi – Određivanje količine metilnih estera masnih kiselina (FAME) u srednjim destilatima – Metoda infracrvene spektrometrije<br>Liquid petroleum products – Determination of fatty acid methyl ester (FAME) content in middle distillates – Infrared spectrometry method | **2014.** |
| 23. | **HRN EN ISO 10523** Kvaliteta vode – Određivanje pH vrijednosti<br>Water quality – Determination of pH | **2012.** |
| 24. | **HRN EN 872** Kakvoća vode – Određivanje suspendiranih tvari – Metoda filtriranjem kroz filtar od staklenih vlakana<br>Water quality – Determination of suspended solids – Method by filtration through glass fibre filters | **2008.** |
| 25. | **Vlastita metoda *In-house method***<br>**50340079-207-21**<br>***Modificirana* HRN EN 872** Određivanje suspendiranih tvari<br>***Modified* HRN EN 872** – Determination of suspended solids | **2021.** |
| 26. | **HRN EN 27888** Kakvoća vode – Određivanje električne vodljivosti<br>Water quality – Determination of electrical conductivity | **2008.** |

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| 27. | **HRN EN 1484** Ispitivanje vode -- Smjernice za određivanje ukupnoga organskog ugljika (UOU) i otopljenoga organskog ugljika (OOU)<br>Water analysis -- Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon | **2002.** |
| 28. | **HRN EN 15751** Goriva za motorna vozila -- Metilni esteri masne kiseline (FAME) kao gorivo i mješavine s dizelskim gorivom -- Određivanje oksidacijske stabilnosti metodom ubrzane oksidacije<br>Automotive fuels -- Fatty acid methyl ester (FAME) fuel and blends with diesel fuel -- Determination of oxidation stability by accelerated oxidation method | **2014.** |
| 29. | **HRN EN ISO 11885** Kvaliteta vode -- Određivanje određenih elemenata optičkom emisijskom spektrometrijom induktivno vezane plazme (ICP-OES)<br>Water quality -- Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) | **2010.** |
| 30. | **HRN EN ISO 10304 – 1** Kakvoća vode -- Određivanje otopljenih aniona ionskom tekućinskom kromatografijom -- 1. dio: Određivanje bromida, klorida, fluorida, nitrata, nitrita, fosfata i sulfata<br>Water quality -- Determination of dissolved anions by liquid chromatography of ions -- Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate | **2009.** |
| 31. | **HRN ISO 15705** Kakvoća vode -- Određivanje indeksa kemijske potrošnje kisika (KPK) -- Metoda s malim zatvorenim epruvetama<br>Water quality -- Determination of the chemical oxygen demand index (ST-COD) -- Small-scale sealed-tube method | **2003.** |
| 32. | **HRN ISO 5667- 10** Kakvoća vode -- Uzorkovanje -- 10. dio: Smjernice za uzorkovanje otpadnih voda<br>Water quality -- Sampling -- Part 10: Guidance on sampling of waste water | **2020.** |
| 33. | **HRN EN 15934 Metoda A** Muljevi, obrađeni biootpad, tlo i otpad -- Izračunavanje frakcije suhe tvari nakon određivanja suhog ostatka ili sadržaja vode<br>Sludge, treated biowaste, soil and waste -- Calculation of dry matter fraction after determination of dry residue or water content (Method A) | **2013.** |

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| 34. | **Standard Methods for the Examination of Water and Wastewater**, 23rd Ed, 2540 B Total Solids Dried at 103-105 °C<br>**Standard Methods for the Examination of Water and Wastewater**, 23rd Ed, 2540 C Total Dissolved Solids Dried at 180 °C<br>Određivanje ukupnih krutina na 105°C i ukupno otopljenih krutina na 180°C u vodama i eluatima<br>Determination of total solids at 105°C and total dissolved solids at 180°C in waters and eluates | **2017.** |
| 35. | **Standard Methods for the Examination of Water and Wastewater**, 23rd Ed, 5520 Oil and Grease B. Liquid-Liquid, Partition-Gravimetric Method<br>Određivanje sadržaja ukupnih ulja i masnoća u vodi gravimetrijski<br>Determination of the content of total oils and fats in water gravimetrically | **2017.** |
| 36. | **HRN EN ISO 20236** Kakvoća vode-Određivanje ukupnoga organskog ugljika (TOC), otopljenoga organskog ugljika (DOC), ukupnoga vezanog dušika (TNb) i otopljenoga vezanog dušika (DNb) nakon visokotemperaturne katalitičke oksidacije<br>Water quality – Determination of total organic carbon (TOC), dissolved organic carbon (DOC), total bound nitrogen (TNb) and dissolved bound nitrogen (DNb) after high temperature catalytic oxidative combustion | **2021.** |
| 37. | **Standard Methods for the Examination of Water and Wastewater, 23rd Ed, 2340 B**<br>Calculation of total hardness | **2017.** |
| 38. | **EPA METHOD 7473**<br>Determination of total mercury in waste eluates | **2007.** |

| Aktivnost/ Activity | Ime i prezime/*Name and surname*/ Potpis/*Signature* | Funkcija/*Function* | Datum/ *Date* |
|---|---|---|---|
| Izradio/ *Prepared by* | Dunja Šeremešić | Vodeći inženjer u I&R laboratoriju/ *R&D Laboratory senior engineer* | 20.04.2023. |
| Odobrio/ *Approved by* | Kristina Marić | Direktor istraživanja i razvoja/ *Manager of the Research and development* | 05.05.2023 |