



# CERTIFICATE OF ACCREDITATION

*This is to attest that*

## **SERVICIOS ANALITICOS GENERALES S.A.C.**

AV. NACIONES UNIDAS 1565, CHACRA RIOS NORTE  
LIMA 1, PERU

### **Testing Laboratory TL-829**

has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Expiry Date February 1, 2026  
Effective Date September 11, 2025



*International Accreditation Service*  
Issued under the authority of IAS management

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# SCOPE OF ACCREDITATION

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## SERVICIOS ANALITICOS GENERALES S.A.C.

[www.sagperu.com](http://www.sagperu.com)

**Contact Name** Ms. Flor Mallma

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**Accredited to** ISO/IEC 17025:2017

**Effective Date** September 11, 2025

FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b>	Water Wastewater, Natural Water, Water for human use and consumption, Saline Water and Process Water  (Sampling & Analysis)	<b>Volatile Organic Compounds (VOC's)</b>  <i>1,1-Dichloroethene, Dichloromethane, Trans-1,2- Dichloroethylene, 1,1-Dichloroethane 2,2-Dichloropropane, Cis-1,2-Dichloroethylene, Bromochloromethane, 1,1,1- Trichlorethane, 1,1-Dichloropropene, Carbon Tetrachloride, 1,2-Dichloroethane, trichloroethylene, 1,2-Dichloropropane, Dibromomethane, Cis-1,3-Dichloropropene, Trans-1,3- Dichloropropene, 1,1,2 Trichloroethane, 1,3-Dichloropropane, tetrachloroethylene, 1,2-Dibromoethane, Chlorobenzene, 1,1,1,2-Tetrachloroethane, Styrene, Cumene, 1,1,2,2-Tetrachloroethane, 1,2,3-Trichloropropane, n-Propylbenzene, Bromobenzene, 1,3,5-Trimethylbenzene, 2-Chlorotoluene, 4-Chlorotoluene, Tert-Butylbenzene, 1,2,4-Trimethylbenzene, Sec-Butylbenzene, p-Isopropyltoluene, 1,3-Dichlorobenzene, 1,4-</i>	Method 8260D – Volatile Organic Compounds by Gas Chromatography /Mass Spectrometry (GC/MS) Revision 4, June 2018

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FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b> (cont'd.)	Water Wastewater, Natural Water, Water for human use and consumption, Saline Water and Process Water  (Sampling & Analysis) (cont'd.)	<i>Dichlorobenzene, n-Butylbenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Hexachlorobutadiene, Naphthalene, 1,2,3-Trichlorobenzene, Chloroform, Bromodichloromethane, Dibromochloromethane, Bromoform.</i>	Method 8260D – Volatile Organic Compounds by Gas Chromatography /Mass Spectrometry (GC/MS) Revision 4, June 2018 (cont'd.)
		<b>BTEX</b> <i>Benzene, Toluene, Ethylbenzene, m-Xylene, p-Xylene, o-Xylene</i>	Method 8260D – Volatile Organic Compounds by Gas Chromatography /Mass Spectrometry (GC/MS) Revision 4, June 2018
		<b>Trihalomethanes</b> <i>Chloroform, Bromodichloromethane, Dibromochloromethane, Bromoform</i>	Method 8260D – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) Revision 4, June 2018.
		<b>Total Petroleum Hydrocarbons (TPH)</b> <i>Range:</i> C8-C40 C8-C28 C28-C40 C28-C40	EPA 8015 C. Nonhalogenated Organics by Gas Chromatography. Rev 3 / February 2007.
		<i>Formaldehyde</i>	ASTM D6303-98 Standard Test Method for Formaldehyde in Water.
	Wastewater, Natural Water, Water for human use and consumption and Saline Water  (Sampling & Analysis)	<b>Carbamate: Aldicarb</b>	Method 200310 (Validated), Referenced in EPA Method 8270E, Rev 06. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). 2018
		<b>Total Petroleum Hydrocarbons (C10-C40) Diesel Range</b> <i>DRO (C10-C28), Referenced in DS N ° 031-2010-SA: Dissolved or emulsified hydrocarbon; mineral oil.</i>	EPA 8015 C. Nonhalogenated Organics by Gas Chromatography. Rev 3 / February 2007

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ENVIRONMENTAL - CHEMISTRY ORGANIC (cont'd.)	Wastewater, Natural Water, Water for human use and consumption and Saline Water  (Sampling & Analysis) (cont'd.)	<b>PCBs</b>	EPA Method 8270E, Rev 06. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). 2018.
	Natural Water, Water for human use and consumption, Waste Water, Saline Water and Process Water  (Sampling & Analysis)	Total organic carbon (TOC), Dissolved organic carbon (DOC), Inorganic carbon (IC),  Volatile Organic Compounds (VOCs): Acrylonitrile Vinyl chloride	SMEWW-APHA-AWWA-WEF Part 5310 C, 24 <sup>th</sup> Ed. 2023. Total Organic Carbon (TOC). Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method.  EPA Method 8260D – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) Revision 4, June 2018.
		Bifenilos policlorados - PCBs	EPA 8082A, Rev 1. Polychlorinated Biphenyls (PCBs) by Gas Chromatography. 2007.
		Fenólicos (Clorados y No Clorados): 2,3,4,6-Tetraclorofenol, 2,4-Dimetilfenol, 2-Clorofenol, 2,4,5-Triclorofenol, 2,4,6-Triclorofenol, 2,4-Diclorofenol, 2,6-Diclorofenol, 2-Nitrofenol, 4-Cloro-3-metilfenol, 4-Nitrofenol, Fenol, o-Cresol, p-Cresol, Pentaclorofenol	EPA Method 8270E, Rev 06. Semi volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). 2018
	Soil, Sediments and Sludges	<b>Volatile Organic Compounds (VOC's)</b> <i>Trichloroethylene, Tetrachloroethylene</i>	Method 8260D – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) Revision 4, June 2018.
		<b>BTEX</b> <i>Benzene, Toluene, Ethylbenzene, m-Xylene, p-Xylene, o-Xylene.</i>	Method 8260D – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) Revision 4, June 2018.
		<b>Total Petroleum Hydrocarbons (TPH)</b> <i>C6-C10 Hydrocarbon fraction F1 (C6-C10)</i>	EPA 8015 C. Nonhalogenated Organics by Gas Chromatography. Rev 3 / February 2007.

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<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b> (cont'd.)	Soil, Sediments and Sludges  (cont'd.)	<b>PCB</b> <i>PCB 28, PCB 52, PCB 101, PCB 118, PCB 138, PCB 153, PCB 180</i> <b>Sum of 7 indicator PCBs</b> <i>PCB 28, PCB 52, PCB 101, PCB 118, PCB 138, PCB 153, PCB 180</i>	EPA Method 8270E: Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). Revision 6, June 2018.
		<b>Total Petroleum Hydrocarbons (TPH): HYDROCARBON FRACTION (C5-C10)</b>	EPA 8015 C. Nonhalogenated Organics by Gas Chromatography. Rev 3 / February 2007.
		<i>Phenols</i>	EPA-SW-846, Method-9065. Phenolics (Spectrophotometric Manual 4-AAP with distillation). 1986 // IHOBE - Public Society of the Basque Government. Soil quality. Determination of phenols content in soil samples. 1998.
	Air  (Sampling & Analysis)	<b>Benzene</b> <b>Volatile Organic Compounds (VOC's)</b> <i>2-chloro-1,3-butadiene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 2,2-Dichloropropane, Bromochloromethane / Chlorobromomethane, Chloroform, Tetrahydrofuran, 1,1,1-trichloroethane / Methylchloroform, 1,2-Dichloroethane, 1,1-Dichloropropene, Benzene, Carbon Tetrachloride, Trichloroethylene, 1,2-Dichloropropane, Dibromomethane, 1,4-Dioxane, Methyl, Bromodichloromethane, cis-1,3-Dichloropropene, 1,2,3-Trichloropropane, trans-1,3-Dichloropropene, Toluene, 1,1,2-Trichloroethane, Ethyl, 1,3-Dichloropropane, Dibromochloromethane,</i>	D3686 – 20 & ASTM D3687-19. Standard Practice for Sampling Atmospheres to Collect Organic Compound Vapors (Activated Charcoal Tube Adsorption Method) / ASTM D3687-19 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method

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<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b> (cont'd.)	Air (Sampling & Analysis) (cont'd.)	<i>Tetrachloroethylene, 1,2-Dibromoethane, Chlorobenzene, 1,1,1,2-Tetrachloroethane, Ethylbenzene, m-Xylene, p-Xylene, p-Xylene, Styrene, Bromoform, cis-1,4-Dichloro-2-butene, 1,1,2,2-Tetrachloroethane, trans-1,4-dichloro-2-butene, Isopropylbenzene, Bromobenzene, 2-Chlorotoluene, n-Propylbenzene, 4-Chlorotoluene, 4-Chlorotoluene, 1,3,5-Trimethylbenzene, Tert-Butylbenzene, 1,2,4-Trimethylbenzene, 1,2,4-Trimethylbenzene, 1,3-Dichlorobenzene, Sec-Butylbenzene, 1,4-Dichlorobenzene, p-Isopropyltoluene, 1,2-Dichlorobenzene, n-Butylbenzene, Nitrobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Naphthalene, Hexachlorobutadiene, 1,2,3-Trichlorobenzene, Cyclohexano, Clorobromometano, Metilciclohexano, Metilcloroformo, n-heptano, n-hexano, n-octano, metilacrilato</i>	D3686 – 20 & ASTM D3687-19. Standard Practice for Sampling Atmospheres to Collect Organic Compound Vapors (Activated Charcoal Tube Adsorption Method) / Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method (cont'd.)
		<b>Gases &amp; Vapours:</b> <i>Benzene (C<sub>6</sub>H<sub>6</sub>), Sulfur dioxide (SO<sub>2</sub>), Nitrogen dioxide, Ozone (O<sub>3</sub>),</i>	UNE-EN 13528-1:2003 and UNE-EN 13528-2:2003. Ambient air quality - Diffusive samplers for the determination of concentrations of gases and vapours: Requirements and test methods: Part 1- General requirements; -Part 2 - Specific requirements and test methods

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<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b> (cont'd.)	Air (Sampling & Analysis) (cont'd.)	<b>Gases &amp; Vapours:</b> <i>Benzene (C<sub>6</sub>H<sub>6</sub>), Sulfur dioxide (SO<sub>2</sub>), Nitrogen dioxide, Ozone (O<sub>3</sub>),</i> (cont'd.)	/ UNE-EN 13528-3:2004. Part 3: Guide to selection, use and maintenance. NTP 900.036:2017 ENVIRONMENTAL QUALITY MONITORING. Air quality. Passive diffusion samplers for the determination of gas and vapour concentration. Requirements and test methods. Part 1: General requirements. 2nd Edition
		<b>Benzene (C<sub>6</sub>H<sub>6</sub>)</b>	UNE-EN14662-2:2006. Ambient air quality - Standard method for measurement of benzene concentrations - Part 2: Pumped sampling followed by solvent desorption and gas chromatography
		<b>Total Hydrocarbons (HT) expressed as Hexane</b>	ASTM D3687-19 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method.
		Volatile organic compounds (VOCs)	UNE-EN 13528-1:2003; UNE-EN 13528-2:2003; UNE-EN 13528-3:2004. Ambient air quality - Diffusive samplers for the determination of concentrations of gases and vapours: Requirements and test methods: Part 1- General requirements; -Part 2 - Specific requirements and test methods Part 3: Guide to selection, use and maintenance
		Benzene (C <sub>6</sub> H <sub>6</sub> )	NTP 712.107:2020 ENVIRONMENTAL QUALITY MONITORING. Method for measuring the concentration of benzene in ambient air. Part 2: Aspiration sampling followed by solvent desorption and gas chromatography. 1st edition
		<b>Formaldehyde</b>	NOM-036-STPS-1993 Determination of formaldehyde in air. Spectrophotometric method.

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ENVIRONMENTAL - CHEMISTRY ORGANIC (cont'd.)	Air (Analysis)	<b>Benzene</b> ( $C_6H_6$ )	UNE-EN14662-2:2006. Ambient air quality - Standard method for measurement of benzene concentrations - Part 2: Pumped sampling followed by solvent desorption and gas chromatography. Except sampling
		<b>Benzene.</b>  <b>Volatile Organic Compounds (VOC's):</b> <i>2-chloro-1,3-butadiene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 2,2-Dichloropropane, Bromochloromethane / Chlorobromomethane, Chloroform, Tetrahydrofuran, 1,1,1-trichloroethane / Methylchloroform, 1,2-Dichloroethane, 1,1-Dichloropropene, Benzene, Carbon Tetrachloride, Trichloroethylene, 1,2Dichloropropane, Dibromomethane, 1,4-Dioxane, Methyl, Bromodichloromethane, cis-1,3-Dichloropropene, 1,2,3-Trichloropropane, trans-1,3-Dichloropropene, Toluene, 1,1,2-Trichloroethane, Ethyl, 1,3-Dichloropropane, Dibromochloromethane, Tetrachloroethylene, 1,2-Dibromoethane, Chlorobenzene, 1,1,1,2-Tetrachloroethane, Ethylbenzene, m-Xylene, p-Xylene, p-Xylene, Styrene, Bromoform, cis-1,4-Dichloro-2-butene, 1,1,2,2-Tetrachloroethane, trans-1,4-dichloro-2-butene, Isopropylbenzene, Bromobenzene, 2-Chlorotoluene, n-</i>	ASTM D3687-19 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method

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<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b> (cont'd.)	Air (Analysis) (cont'd.)	<i>Propylbenzene, 4-Chlorotoluene, 4-Chlorotoluene, 1,3,5-Trimethylbenzene, Tert-Butylbenzene, 1,2,4-Trimethylbenzene, 1,2,4-Trimethylbenzene, 1,3-Dichlorobenzene, Sec-Butylbenzene, 1,4-Dichlorobenzene, p-Isopropyltoluene, 1,2-Dichlorobenzene, n-Butylbenzene, Nitrobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Naphthalene, Hexachlorobutadiene, 1,2,3-Trichlorobenzene, Ciclohexano, Clorobromometano, Metilciclohexano, Metilcloroformo, n-heptano, n-hexano, n-octano, metilacrilato</i>	ASTM D3687-19 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method (cont'd.)
	Air (Field measurement)	<b>Benzene</b> (C <sub>6</sub> H <sub>6</sub> )	UNE-EN14662-3:2016 Ambient air - Standard method for the measurement of benzene concentrations - Part 3: Automated pumped sampling within situ gas chromatography
		<b>Total hydrocarbons</b> (THC)  <b>Non-methanic Hydrocarbons</b> (NmHC)  <b>Methane</b> (CH <sub>4</sub> )	Method 200228 (Validated) referenced in UNE-EN 12619:2013: Stationary source emissions - Determination of the mass concentration of total gaseous organic carbon - Continuous flame ionisation detector method
	Gaseous Emissions (Sampling & Analysis)	<b>Volatile Organic Compounds (VOC's):</b> <i>Benzene, Trichloroethylene, Toluene, Tetrachloroethylene, Chlorobenzene, Ethylbenzene, m-Xylene, p-Xylene, Styrene, o-Xylene, Bromobenzene, 2-Chlorotoluene, n-Propylbenzene,</i>	EPA-40 CFR, Appendix A, Part 60 Method 18. 2025. Measurement of gaseous organic compound emissions by gas chromatography.

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<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b> (cont'd.)	Gaseous Emissions (Sampling & Analysis) (cont'd.)	<i>4-Chlorotoluene, 1,3,5- Trimethylbenzene, Tert-Butylbenzene, 1,2,4- Trime-thylbenzene, 1,3 Dichloro-benzene, Sec-Butylben-zene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, p-Isopropyltoluene, n-Bu-tylbenzene, 1,2,4-Trichloro-benzene, Naftaleno, 1,2,3-Trichlorobenzene.</i>	EPA-40 CFR, Appendix A, Part 60 Method 18. 2025. Measurement of gaseous organic compound emissions by gas chromatography. (cont'd.)
		<b>Volatile Organic Compounds (VOCs)</b>	NTP 900.018:2021 MONITORING OF ATMOSPHERIC EMISSIONS Measurement of gaseous organic compounds emissions by gas chromatography. 2nd Edition
	Emission / Stationary Sources (Field measurement)	<b>Determination of non-methane hydrocarbons</b>	EPA-40 CFR, Part 60, Appendix A-7, Method 25. Determination of total gaseous nonmethane organic emissions as carbon. 2023.
		<b>Determination of total hydrocarbons / total organic carbon TOC</b>	EPA 40 CFR, Part 60, Appendix A-7, Method 25A. Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer. 2017.
	Biological Tissues (Sampling & Analysis)	<b>Polycyclic aromatic hydrocarbons (PAHs) in plant and animal tissue</b>	Method 200203 Polycyclic Aromatic Hydrocarbons (PAHs) in plant and animal tissue (Validated). Referenced in EPA Method 8270E, Rev 06. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS).
		<b>Total Petroleum Hydrocarbons (C10-C40) in plant and animal tissue</b>	Method 200210 Total Petroleum Hydrocarbons (C10-C40) in plant and animal tissue. Referenced in EPA Method 8015C Rev.3, Nonhalogenated Organics by Gas Chromatography.

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<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b> (cont'd.)	Natural Water, Water for human use and consumption, Wastewater, Saline Water and Process Water	<b>Pesticides And Herbicides:</b> <i>Alachlor, Atrazine, Cyanazine, Carbofuran, Metolachlor, Molinate, Pendimethalin, Simazine, Trifluralin, Chlorpyrifos, Pyriproxyfen.</i>	EPA Method 8270E, Rev 06. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). 2018.
	(Sampling & Analysis)	<b>Organophosphorus Pesticides:</b> <i>Malathion, Parathion, Methamidophos, Chlorpyrifos, Chlorpyrifos methyl.</i>	EPA Method 8270E, Rev 06. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). 2018.
		<b>Phthalate esters</b>	EPA Method 8270E, Rev 06. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). 2018
	Gaseous Emissions (Sampling & Analysis)	<b>Dioxins and Furans.</b>	EPA 40 CFR, Part 60, Appendix A-7, Method 23 - Determination of Polychlorinated Dibenzo-p-Dioxins, Polychlorinated Dibenzofurans, Polychlorinated Biphenyls, and Polycyclic Aromatic Hydrocarbons from Stationary Sources (Validated)
<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b>	Water, Wastewater, Natural Water, Water for human use and consumption, Saline Water and Process Water	<b>Color, True Color, Apparent Color</b>	SMEWW-APHA-AWWA-WEF. Part 2120 C. Color. Spectrophotometric-Single-Wavelength Method (Proposed). 24th Ed. 2023.
	(Sampling & Analysis)	<b>Acidity</b>	SMEWW-APHA-AWWA-WEF. Part 2310 B. Acidity. Titration Method. 24th Ed. 2023.
		<b>Bromides (Br-)</b>	SMEWW-APHA-AWWA-WEF. Part 4500-Br B. Bromide. Phenol Red Colorimetric Method. 24th Ed. 2023.
		<b>Fixed and Volatile Solids</b> <i>Total Sample Dissolved Suspended</i>	SMEWW-APHA-AWWA-WEF. Part 2540 E. Solids. Fixed and Volatile Solids Ignited at 550°C. 24th Ed. 2023.
		<b>Phosphorus:</b> <i>Total phosphorus, Total reactive phosphorus, Total acid-hydrolizable phosphorus,</i>	SMEWW-APHA-AWWA-WEF. Phosphorus. Part 4500-P B Sample Preparation. / Part 4500-P E. Ascorbic Acid Method. 24th Ed. 2023.

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Water, Wastewater, Natural Water, Water for human use and consumption, Saline Water and Process Water  (Sampling & Analysis) (cont'd.)	<i>Total organic phosphorus, Dissolved phosphorus, Dissolved reactive phosphorus, Dissolved acid-hydrolyzable phosphorus, and Dissolved organic phosphorus.</i>	SMEWW-APHA-AWWA-WEF. Phosphorus. Part 4500-P B Sample Preparation. / Part 4500-P E. Ascorbic Acid Method. 24th Ed. 2023. (cont'd.)
		<b>Floatable Material of Anthropogenic Origin</b>	Method 180806. Floatable Material of Anthropogenic Origin (Validated) Referenced in: SMEWW-APHA-AWWA-WEF Part 2530 B. Particulate Floatables. 24th Ed. 2023.
		<b>Total or dissolved Sulfur</b>	UNE-EN ISO 11885. Water quality - Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES)
		Free Cyanide (Cianuro Libre)	EPA Method 9016, Free Cyanide in Water, Soils and Solid Wastes by Microdiffusion. Revision 4, June 2010.
	Natural Water, Water for human use and consumption	<i>Cyanogen Chloride (as CN<sup>-</sup>)</i>	SMEWW-APHA-AWWA-WEF Part 4500-CN <sup>-</sup> J,E, 24TH Ed. 2023. Cyanide. Cyanogen Chloride. Colorimetric Method.
	Natural Water, Water for human use and consumption and Process Water (Sampling & Analysis)	<i>Sodium Adsorption Ratio (RAS) or SAR</i>	Government of Chile. Department of agriculture. Agricultural Research Institute. INIA. Irrigation water analysis methods (2006), INIA ACTS SERIES N° 37. 8.2 Sodium Adsorption Ratio (RAS), Method 8.2.1 Calculation from Sodium, Calcium and Magnesium / EPA Method 200.7, Rev.4.4. EMMC Version 1994.
		<i>Sodium Percentage</i>	Government of Chile. Department of agriculture. Agricultural Research Institute. INIA. Irrigation water analysis methods (2006), INIA RECORD SERIES N° 37. 8.3 Percentage Sodium, Method 8.3.1 Calculation from Sodium, Potassium, Calcium and Magnesium / EPA Method 200.7, Rev.4.4. EMMC Version 1994.

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FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Wastewater, Natural Water, Water for human use and consumption, Saline Water, Process Water  (Sampling & Analysis)	<b>Alkalinity. Titration Method.</b> <i>Total alkalinity</i> <i>Partial alkalinity</i> <i>Alkalinity to carbonate (CO<sub>3</sub><sup>=</sup>)</i> <i>Alcalinidad al carbonato</i> <i>Alkalinity to bicarbonate (HCO<sub>3</sub><sup>-</sup>)</i> <i>Alkalinity to hydroxide (OH<sup>-</sup>)</i>	SMEWW-APHA-AWWA-WEF Part 2320-B, 24th Ed. 2023. Alkalinity. Titration Method.
		<b>Chlorides</b>	SMEWW-APHA-AWWA-WEF Part 4500-Cl <sup>-</sup> B, 24th Ed. 2023. Chloride. Argentometric Method.
		<b>Total hardness</b>	SMEWW-APHA-AWWA-WEF Part 2340 C, 24th Ed. 2023. Hardness. EDTA Titrimetric Method.
		<b>Calcium hardness</b>  <b>Calcium</b>	SMEWW-APHA-AWWA-WEF Part 3500-Ca B, 24th Ed. 2023. Calcium. EDTA Titrimetric Method.
		<b>Nitrites</b> Nitrogen NO <sub>2</sub> <sup>-</sup> -N Nitrites NO <sub>2</sub> <sup>-</sup>	SMEWW-APHA-AWWA-WEF Part 4500-NO <sub>2</sub> - B. 24th Ed. 2023. Nitrogen (Ni rite). Colorimetric Method.
		<b>Total nitrogen</b>	SMEWW-APHA-AWWA-WEF Part 4500-N C,E 24th Ed. 2023. Nitrogen. Persulfate Method.
		<b>Surfactants (SAAM)</b>	SMEWW-APHA-AWWA-WEF Part 5540 C. 24th Ed. 2023 Surfactants. Anionic Surfactants as MBAS.
		<b>Silica:</b> SiO <sub>2</sub> , Si-SiO <sub>3</sub> ; SiO <sub>2</sub> -SiO <sub>3</sub> <b>Free Silica</b> SiO <sub>2</sub>	SMEWW-APHA-AWWA-WEF Part 4500-SiO <sub>2</sub> C. 24th Ed. 2023. Silica. Molybdosilicate Method.
		<b>Total Dissolved Solids</b>	SMEWW-APHA-AWWA-WEF Part 2540 C, 24th Ed. 2023. Solids. Total Dissolved Solids Dried at 180°C.
		<b>Total Suspended Solids</b>	SMEWW-APHA-AWWA-WEF Part 2540 D, 24th Ed. 2023. Solids. Total Suspended Solids Dried at 103-105°C.

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Wastewater, Natural Water, Water for human use and consumption, Saline Water, Process Water  (Sampling & Analysis) (cont'd.)	<b>Total Solids</b>	SMEWW-APHA-AWWA-WEF Part 2540 B, 24th Ed. 2023. Solids. Total Solids Dried at 103-105°C.
		<b>Sulfate</b>	SMEWW-APHA-AWWA-WEF Part 4500 SO42- E. 24th Ed. 2023. Sulfate. Turbidimetric Method.
		<b>Chlorophyll A</b>	SMEWW-APHA-AWWA-WEF Part 10150 A. Introduction, Part 10150 B. Spectrophotometric Determination of Chlorophyll A. 24th Ed. 2023.
		<b>Hydrogen Sulfide (un-ionized)</b>	SMEWW-APHA-AWWA-WEF Part 4500-S2-H. Sulfide. 24th Ed. 2023. Calculation of Un-ionized Hydrogen sulfide.
		<b>Biochemical Oxygen Demand - Soluble</b>	Method 200105 (Validated), Referenced in SMEWW-APHA-AWWA-WEF Part 5210 B, 24th Ed. 2023. Biochemical Oxygen Demand (BOD). 5-Day BOD Test.
		<b>Chemical Oxygen Demand - Soluble</b>	Method 200106 (Validated), Referenced in SMEWW-APHA-AWWA-WEF Part 5220 D, 24th Ed. 2023. Chemical Oxygen Demand (COD). Closed Reflux, Colorimetric Method.
		<b>Inorganic Anions:</b> <i>Bromide (Br<sup>-</sup>), Chloride (Cl<sup>-</sup>), Fluoride (F<sup>-</sup>), Fluor, Nitrate (NO<sub>3</sub><sup>-</sup>, NO<sub>3</sub><sup>-</sup>-N), Nitrite (NO<sub>2</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>-N), Orthophosphate, (P, PO<sub>4</sub><sup>-3</sup>), Sulfate (SO<sub>4</sub><sup>-2</sup>) Bromate (BrO<sub>3</sub><sup>-</sup>), Chlorate (ClO<sub>3</sub><sup>-</sup>) and Chlorite (ClO<sub>2</sub><sup>-</sup>)</i>	EPA Method 300.0:1993 Rev. 2.1. Determination of Inorganic Anions by Ion Chromatography.
		<b>Total Chlorine (field analysis)</b>	SMEWW-APHA-AWWA-WEF Part 4500-Cl G. 24th Ed. 2023. Chlorine (Residual). DPD Colorimetric Method.

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Wastewater, Natural Water, Water for human use and consumption, Saline Water, Process Water  (Sampling & Analysis) (cont'd.)	<b>Oil and Grease</b>	ASTM D7678 – 17(2022). Standard Test Method for Total Oil and Grease (TOG) and Total Petroleum Hydrocarbons (TPH) in Water and Wastewater with Solvent Extraction using Mid-IR Laser Spectroscopy.
	Natural Water, (underground water) (Sampling & Analysis)	<b>Water Level (in situ)</b> ( <i>nivel freático</i> )	ISO 21413:2005 Manual methods for the measurement of a groundwater level in a well.
	Wastewater  (Sampling & Analysis)	<b>Oil and Grease</b>	SMEWW-APHA-AWWA-WEF Part 5520 D, 24th Ed. 2023. Soxhlet Extraction Method.
		<b>Calculation the:</b> <i>Chemical Demand for readily Biodegradable Oxygen (COD-FB) / Chemical Demand for slowly Biodegradable Oxygen (COD-LB) / Chemical Demand for Soluble non-Biodegradable oxygen (COD-NBS) / Chemical Demand for non-Biodegradable Particulate Oxygen (COD-NBP)</i>	Method 200110 (Validated), Referenciado in: SMEWW-APHA-AWWA-WEF Part 5210 B, 24th Ed. 2023. Biochemical Oxygen Demand (BOD). 5-Day BOD Test. / SMEWW-APHA-AWWA-WEF Part 5220 D, 24th Ed. 2023. Chemical Oxygen Demand (COD). Closed Reflux, Colorimetric Method.
	Wastewater, Natural Water, Water for human use and consumption and Process Water  (Sampling & Analysis)	<b>Total and Dissolved Metals:</b> <i>Silver, Aluminum, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Chrome, Copper, Mercury, Manganese, Molybdenum, Nickel, Lead, Antimony, Selenium, Thallium, Thorium, Uranium, Vanadium, Zinc</i> <i>Validated: Lithium, Bismuth, Boron, Sodium, Magnesium, Silicon, Silica, Silicate, Phosphorus, Potassium, Calcium, Titanium, Iron, Gallium, Germanium, Rubidium, Strontium, Zirconium, Niobium, Indium, Tin,</i>	EPA Method 200.8 Revision 5.4 (1994). Determination of trace elements in waters and wastes by Inductively Coupled Plasma - Mass Spectrometry. // Method 190911. Total Metals and Dissolved (Validated), Referenced in EPA Method 200.8. Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry. Revision 5.4. 1994.

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ENVIRONMENTAL - CHEMISTRY INORGANIC (cont'd.)		<i>Cesium, Lanthanum, Cerium, Terbium, Lutetium, Tantalum, Tungsten, Yttrium, Hafnium, Tellurium.</i>	
	Saline Water (Sampling & Analysis)	<b>Color</b> <i>True Color, Apparent Color</i>	Method 180921. Color in Saline Water (Validated). Referenced in SMEWW-APHA-AWWA-WEF. Part 2120 C. Color. Spectrophotometric-Single-Wavelength Method (Proposed). 24th Ed. 2023.
		<b>Total and Dissolved Metals</b> <i>Metals:</i> <i>Silver (Ag), Aluminum (Al), Arsenic (As), Boron (B), Barium (Ba), Beryllium (Be), Bismuth (Bi), Cadmium (Cd), Calcium (Ca), Cerium (Ce), Cobalt (Co), Chromium (Cr), Cesium (Cs), Copper (Cu), Iron (Fe), Potassium (K), Lithium (Li), Magnesium (Mg), Manganese (Mn), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Lead (Pb), Antimony (Sb), Selenium (Se), Strontium (Sr), Thorium (Th), Titanium (Ti), Thallium (Tl), Uranium (U), Vanadium (V), Zinc (Zn).</i>	Method 180810. Total Metals and Dissolved by ICP in Saline Water (Validated). Referenced in EPA Method 200.8. Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry. Revision 5.4. 1994.
	Natural water, Water for human use and consumption, Water Wastewater, Saline Water, Process water (Field measurement)	<b>Potential REDOX</b>	SMEWW-APHA-AWWA-WEF 2580 B. 24th Ed. 2023. Oxidation-Reduction Potential Measurement in Clear Water.
	Non-aqueous liquids	<b>pH</b>	EPA SW-846, Method 9045 D (Rev4) 2004, Soil and waste pH

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Soils, Sediments and Sludges  (Sampling & Analysis)	<b>Metals:</b>  <i>Aluminum (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Boron (B), Beryllium (Be), Cadmium (Cd), Calcium (Ca), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Lithium (Li), Magnesium (Mg), Manganese (Mn), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Phosphorus (P), Potassium (K), Selenium (Se), Silica (SiO<sub>2</sub>), Silver (Ag), Sodium (Na), Strontium (Sr), Thallium (Tl), Estaño, Titanium (Ti), Vanadium (V), Zinc (Zn), Thorium (Th), Uranium (U), Tungsten (W)</i>	EPA 3050-B (1996) Acid Digestion of Sediments, Sludges, and Soils // SW-846 Method EPA 6010D, Rev. 5, 2018. Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES)
		<b>Extractable Barium</b>	Alberta Environment 2009. SBN N°978-0-7785-7691-4. Soil Remediation Guidelines for Barite: Environmental Health and Human Health. Sección 6.2.2. Método Analítico para Bario Extraíble / Method EPA 6010D, Rev. 5, 2018. Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES).
		<b>True total Barium</b>	Alberta Environment 2009. SBN N°978-0-7785-7691-4. Soil Remediation Guidelines for Barite: Environmental Health and Human Health. Sección 2.2.1. Suelos (Métodos de fusión), 9.1.3 Bario total real / Method EPA 6010D, Rev. 5, 2018. Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES).
		<b>Inorganic Anions:</b> <i>Chloride (Cl<sup>-</sup>), Fluoride (F<sup>-</sup>), Nitrate (NO<sub>3</sub><sup>-</sup>, NO<sub>3</sub>-N), Nitrito (NO<sub>2</sub><sup>-</sup>, NO<sub>2</sub>-N), Orthophosphate (P, PO<sub>4</sub>-3), Sulfate (SO<sub>4</sub><sup>=</sup>).</i>	EPA Method 300.0:1993 Rev. 2.1. Determination of Inorganic Anions by Ion Chromatography.

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Soils, Sediments and Sludges (Sampling & Analysis) (cont'd.)	<b>Total, fixed and volatile solids)</b>  <b>Dry Material</b> <i>According D.S. 015-2017-VIVIENDA for sluge the PTAR.</i>	SMEWW-APHA-AWWA-WEF. Part 2540 G. 24th Ed. 2023. Total, Fixed, and Volatile Solids and Semisolid Samples
		<b>Calcination loss: total solids. Dry Material</b>	SMEWW-APHA-AWWA-WEF. Part 2540 G. 24th Ed. 2023 Total, Fixed, and Volatile Solids and Semisolid Samples
		<b>Calcination loss: total volatile solid</b>  <b>Organic Material</b> <i>According D.S. 015-2017-VIVIENDA for sludge the PTAR.</i>	SMEWW-APHA-AWWA-WEF. Part 2540 G. 24th Ed. 2023 Total, Fixed, and Volatile Solids and Semisolid Samples
		<b>Kjeldahl Total Nitrogen</b>	SMEWW-APHA-AWWA-WEF Part 4500-Norg-C, 24th Ed. 2023 Semi-Micro-Kjeldahl Method.
		<b>Nitrogen from Nitrate (N-NO<sub>3</sub>)</b>	SW-846 Method EPA 9056A, Rev. 1, 2007. Determination of Inorganic Anions by Ion Chromatography
		<b>Organic Nitrogen</b>	SMEWW-APHA-AWWA-WEF Part 4500-Norg-C, 24th Ed. 2023. Semi-Micro-Kjeldahl Method.
		<b>Ammonia (NH<sub>3</sub>, NH<sub>3</sub>-N) Ammonia Nitrogen (NH<sub>4</sub>, NH<sub>4</sub>-N)</b>	SMEWW-APHA-AWWA-WEF Part 4500-NH <sub>3</sub> C, 24th Ed. 2023. Titrimetric Method
		<b>Inorganic Nitrogen (Mineral Nitrogen)</b>	Official Mexican Standard NOM-021-SEMARNAT-2000 item 7.1.8 Method AS-08 Inorganic Nitrogen (December 31, 002). Fertility, salinity and soil classification specifications, study, sampling and analysis
		<b>Conductivity</b> (soil/water ratio 1:5)	Protocol of Analysis Methods for Soils and Sludge. Commission for Standardization and Accreditation of the Chilean Society of Soil Science on behalf of the Agricultural and Livestock Service. Method 5.1 Electrical conductivity.

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Soils, Sediments and Sludges (Sampling & Analysis) (cont'd.)	<b>Total organic carbon (TOC)</b>	Method 190908 Total organic carbon (Validated). Referenced in Official Mexican Standard NOM-021-SEMARNAT-2000 item 7.1.7, Method AS-07. Fertility, salinity and soil classification specifications. Studies, sampling and analysis. Organic material.
		<b>Free cyanide</b>	EPA Method 9013-A Rev. 2 (2014)/// SMEWW-APHA-AWWA-WEF Part 4500-CN -F, 24 <sup>th</sup> Ed. 2023 Cyanide Extraction procedure for Solids and oils // Cyanide. Selective Electrode Method.
		<b>Humidity</b>	Official Mexican Standard NOM-021-SEMARNAT-2000 item 7.1.5 AS-05 - Gravimetric Method (December 31, 2002). Fertility, salinity and soil classification specifications, study, sampling and analysis.
		<b>Soluble Salts (dissolved solids)</b>	NTP 339.152: 2002 (revised 2015) SOILS. Standard test method for determining the content of soluble salts in soils and groundwater.
		<b>Sulfides</b>	EPA: Method 9030 B / Method 9034. Acid-Soluble and Acid-Insoluble sulfides: Distillation / Titrimetric procedure for Acid-Soluble and Acid Insoluble Sulfides. 1996.
	Soils, Rocks, Limestone, Quicklime, Hydrated Lime, Cement Raw Material (Raw kiln feed flour for cement manufacturing)  (Sampling & Analysis)	<b>Sulfur Trioxide (SO<sub>3</sub>) (Azufre pirítico expresado como SO<sub>3</sub>)</b>	ASTM C25-24. Standard Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime. Section 23,24 Sulfur Trioxide.
	Soils (Sampling & Analysis)	<b>Sand Equivalent</b>	ASTM D2419 - 22 Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Soils (Sampling & Analysis) (cont'd.)	<i>Conductivity (Saturation Extract)</i>	Official Mexican Standard NOM-021-SEMARNAT-2000 (December 31, 2002). Specifications of fertility, salinity and soil classification, study, sampling and analysis. item 7.2.5, Method AS-18. Conductivity in the saturation extract.
		<b>Moisture</b>	NTP 339.127:1998 (revised 2019) Soils: Test method to determine the content soil moisture
		<b><i>pH measured in the saturation</i></b>	Official Mexican Standard NOM-021-SEMARNAT-2000 item 7.1.2 Method AS-02. pH measured in the Saturation Extract. (December 31, 2002). Fertility, salinity and soil classification specifications, study, sampling and analysis
		<i>pH 1:1 (v/v); 1:2 (p/v) Soil-water, Soil -KCl, Soil - CaCl<sub>2</sub>;</i>	Ministry of Agriculture - National Institute of Agrarian Innovation. Manual of procedures for soil and water analysis for irrigation purposes, 2017; item. 4.1 Determination of soil pH.
		<b>Sulfate</b>	NTP 339.178 2002 (revised 2015) SOILS. Standard test method for determining water soluble sulfate ion content for soils and ground water
		<b>Chloride</b>	NTP 339.177 2002 (revised 2015) SOILS. Test method for determination quantitative of soluble chlorides in soils and groundwater.
		<b>Granulometric analysis</b>	NTP 339.128 1999 (revised 2019) SOILS. Test method for granulometric analysis
		<b>Texture and textural class</b>	Mexican Official Standard NOM-021-SEMARNAT-2000 item 7.1.9 Method AS-09 (December 31, 2002). Fertility specifications, salinity and soil classification, study, sampling and analysis.

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Air (Analysis)	<b>Hydrogen Sulfide (H<sub>2</sub>S)</b>	COVENIN 3571: 2000. Air quality. Determination of the concentration of Hydrogen Sulfide (H <sub>2</sub> S) in the atmosphere. Except sampling
		<b>HIGH VOLUME FILTER METALS:</b> <i>Aluminum, Antimony, Arsenic, Barium, Boron, Beryllium, Bismuth, Cadmium, Calcium, Cerium, Chrome, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc.</i>	EPA Compendium IO-3.4. Determination of Metals in Ambient Particulate Matter using Inductively Coupled Plasma (ICP) Spectroscopy. 1999. Except Sampling.
		<b>METALS IN LOW VOLUME FILTER (Only Analysis):</b> <i>Silver, Aluminum, Arsenic, Boron, Barium, Beryllium, Bismuth, Calcium, Cadmium, Cerium, Cobalt, Chrome, Copper, Iron, Mercury, Potassium, Lithium, Magnesium, Manganese, Molybdenum, Sodium, Nickel, Phosphorus, Lead, Antimony, Selenium, Tin, Strontium, Titanium, Thallium, Vanadium, Zinc.</i>	SAG-190912 - Referenciado en EPA Compendium IO-3.4 (1999). Determination of Metals in Ambient Particulate Matter using Inductively Coupled Plasma (ICP) Spectroscopy.
	Air (Sampling & Analysis)	<b>Hydrogen Sulfide (H<sub>2</sub>S)</b>	COVENIN 3571:2000. Air quality. Determination of the concentration of Hydrogen Sulfide (H <sub>2</sub> S) in the atmosphere
		<b>Determination of Particulate Matter as PM<sub>2.5</sub> Low Vol.</b>	NTP 900.069:2017. ENVIRONMENTAL QUALITY MONITORING. Air quality. Reference method for the determination of fine particulate matter as PM 2.5 in the atmosphere. 1st Edition 2019-12-29

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Air (Sampling & Analysis) (cont'd.)	<b>Particulate Material PM 2.5 High volume</b>	Method 180925. Determination of particulate material PM 2.5 High volume in the Atmosphere (Validated). Referenced in EPA CFR40 Appendix J. Part 50 Method for the Determination of Particulate Matter as PM10 in the Atmosphere
		<b>Determination of Particulate Matter as PM1.</b>	Method 200118. PM1 particulate material with type 2.229 selective PM1 separator (Validated). Referenced in NTP 900.069:2017
		<b>Coarse Fraction or Coarse PM10 - PM2.5</b>	Calculation method referenced in NTP 900.030:2018 and NTP 900.069:2017
		<b>Particulate Matter (PM10; PM2.5)</b>	UNE-EN 16450:2017. Ambient air - Automated measuring systems for the measurement of the concentration of particulate matter (PM10; PM2,5)
		<b>Anions deposited on filters:</b> $\text{NO}_3^-$ , $\text{SO}_4^{2-}$ , $\text{Cl}^-$ , $\text{NH}_4^+$ , $\text{Na}^+$ , $\text{K}^+$ , $\text{Mg}^{2+}$ , $\text{Ca}^{2+}$	UNE-EN 16913:2018. Ambient air - Standard method for measurement of $\text{NO}_3^-$ , $\text{SO}_4^{2-}$ , $\text{Cl}^-$ , $\text{NH}_4^+$ , $\text{Na}^+$ , $\text{K}^+$ , $\text{Mg}^{2+}$ , $\text{Ca}^{2+}$ in PM2,5 as deposited on filters
		<b>Total Gaseous Mercury (Sampling and Analysis)</b>	Method 180901. Total Gaseous Mercury in Air Quality (Validated). Referenced in NIOSH 6009, Mercury 1994.
		<b>Nitrogen oxides:</b> $\text{NO}_x$ : $\text{NO} + \text{NO}_2$ Nitric Oxide (NO)	Method 201120 Validated – Referenced in Peter O. Warner. Analysis of Air Pollutants, Spanish Ed 1981. Cap. 3, pp. 147-151. Determination of Nitrogen Oxides in Air Quality $\text{NO}_x$ ( $\text{NO}_2 + \text{NO}$ )
		<b>METALS IN HIGH VOLUME FILTER: Silica (<math>\text{SiO}_2</math>)</b>	Method 201010 Validated - Referenced in EPA Compendium IO-3.4. (1999) Determination of Metals in Ambient Particulate Matter using Inductively Coupled Plasma (ICP) Spectroscopy

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FIELDS OF TESTING	MATERIAL/MATRIX	DETERMINANT(S)/ANALYTE(S)	METHOD REFERENCE
<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Air (Sampling & Analysis) (cont'd.)	<b>Ammonia (NH<sub>3</sub>), Hydrogen sulfide (H<sub>2</sub>S)</b>	UNE-EN 13528-1:2003; UNE-EN 13528-2:2003; UNE-EN 13528-3:2004. Ambient air quality - Diffusive samplers for the determination of concentrations of gases and vapours: Requirements and test methods: Part 1- General requirements; -Part 2 - Specific requirements and test methods Part 3: Guide to selection, use and maintenance.
		<b>PM<sub>10</sub> particulate matter (low volume)</b>	NTP 900.030:2018. ENVIRONMENTAL MANAGEMENT. Air quality. Reference method for the determination of breathable particulate matter such as PM <sub>10</sub> in the atmosphere.
		<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	EPA N° EQN-1277-026. 1977 Sodium Arsenite Method for the Determination of Nitrogen in the Atmosphere.
	Air (field measurement) (cont'd.)	<b>Determination of Ozone (O<sub>3</sub>)</b>	NTP-ISO 13964:2020 Air quality. Determination of ozone in ambient air. Ultraviolet photometric method.
		<b>Determination of Ozone (O<sub>3</sub>) (cont'd.)</b>	ISO 13964:1998. Air quality - Determination of ozone in ambient air -Ultraviolet photometric method.
		<b>Determination of Carbon Monoxide (CO)</b>	NTP-ISO 4224:2019 Ambient air. Determination of carbon monoxide. Non-dispersive infrared spectrometry method. 1st Edition 2020.  EPA CFR 40, Appendix C to Part 50. Measurement Principle and Calibration Procedure for the Measurement of Carbon Monoxide in the Atmosphere (Non-Dispersive Infrared Photometry).

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Air (field measurement) (cont'd.)	<b>Determination of Nitrogen Dioxide (NO<sub>2</sub>)</b>	EPA CFR 40, Appendix F to Part 50. Measurement Principle and Calibration Procedure for the Measurement of Nitrogen Dioxide in the Atmosphere (Gas Phase Chemiluminescence).  NTP-ISO 7996:2019. Ambient air. Determination of the mass concentration of nitrogen oxides. Chemiluminescence method.
		<b>Determination of Sulfur Dioxide (SO<sub>2</sub>)</b>	NTP ISO 10498: 2017. Determination of sulfur dioxide. Ultraviolet fluorescence method
		<b>Determination of Hydrogen Sulfide (H<sub>2</sub>S)</b>	Method 180806. Measurement of hydrogen sulfide in air quality (Validated). Referenced in NTP ISO 10498: 2017. Determination of sulfur dioxide. Ultraviolet fluorescence method.
	Gaseous Emissions (Sampling & Analysis)	<b>Hydrogen Sulfide (H<sub>2</sub>S)/ Total Reduced sulfur (TRS)</b>	EPA 40 CFR, Appendix A-6 to Part 60. Method 16A - Determination of total reduced sulfur emissions from stationary sources (impinger technique). 2017.
		<b>Metals:</b> <i>Silver (Ag), Arsenic (As), Barium (Ba), Beryllium (Be), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Mercury (Hg), Copper (Cu), Manganese (Mn), Nickel (Ni), Phosphorus (P), Lead (Pb), Antimony (Sb), Selenium (Se), Thallium (Tl), Zinc (Zn).</i>	EPA-40 CFR, Appendix A-8 to Part 60. Method 29. Determination of Metals Emissions from Stationary Sources. 2017
		<b>Metals:</b> <i>Vanadium (V), Iron (Fe), Tin (Sn), Titanium (Ti)</i>	Method 180924 (Validated). Referenced in EPA-40 CFR, Appendix A-8 to Part 60. Method 29. Determination of Metals Emissions from Stationary Sources. 2019.

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Gaseous Emissions  (Sampling & Analysis) (cont'd.)	<b><i>Determination of sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) and sulfur dioxide (SO<sub>2</sub>) emissions from stationary sources</i></b>	EPA 40 CFR, Appendix A-6 to Part 60. Method 8 - Determination of sulfuric acid mist and sulfur dioxide emissions from stationary sources. 2019
		<b><i>Sulfur dioxide in emissions (SO<sub>2</sub>)</i></b>	NTP 900.006.2021. ENVIRONMENTAL MANAGEMENT. Atmospheric Emissions. Determination of sulfur dioxide emissions from stationary sources
		<b><i>Ammonia (NH<sub>3</sub>)</i></b>	EPA CTM-027 Procedure for Collection and Analysis of Ammonia in Stationary Sources. 1997 // SMEWW Part 4500-NH <sub>3</sub> -D, 24th Ed. 2023. Nitrogen (Ammonia). Ammonia-Selective Electrode Method.
		<b><i>Determination of Particulate Matter Emissions from Stationary Sources</i></b>	-EPA-40 CFR, Appendix A-3 to Part 60. Method 5. Determination of Particulate Matter Emissions from Stationary Sources. 2020.  -NTP 900.005.2021 ENVIRONMENTAL MANAGEMENT Atmospheric Emissions. Determination of particulate matter emissions from stationary sources.  - EPA-40 CFR, Appendix A-1 to Part 60. Method 1- Sample and Velocity Traverses for Stationary Sources. 2023.  -NTP 900.001:2021. ENVIRONMENTAL MANAGEMENT. Atmospheric Emissions. Methods for the determination of transversal sampling points for the measurement of speed in stationary sources.  - EPA-40 CFR, Appendix A-1 to Part 60. Method 1A-Sample and Velocity Traverses for Stationary

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ENVIRONMENTAL - CHEMISTRY INORGANIC (cont'd.)	Gaseous Emissions (Sampling & Analysis) (cont'd.)	<b>Determination of Particulate Matter Emissions from Stationary Sources</b> (cont'd.)	<p>Sources with Small Stacks or Ducts. 2017.</p> <p>- EPA-40 CFR, Appendix A-1 to Part 60. Method 2-Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube). 2017.</p> <p>-NTP 900.002:2021. ENVIRONMENTAL MANAGEMENT. Atmospheric Emissions. Determination of chimney gas speed and volumetric flow (Type S Pilot Tube).</p> <p>- EPA-40 CFR, Appendix A-1 to Part 60. Method 2C - Determination of gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube). 2017.</p> <p>- EPA-40 CFR, Appendix A-2 to Part 60. Method 3 - Gas Analysis for the Determination of Dry Molecular Weight. 2017.</p> <p>- NTP 900.003:2021 MONITORING OF ATMOSPHERIC EMISSIONS. Gas analysis for the determination of molecular weight on a dry basis. 2nd Edition.</p> <p>- EPA-40 CFR, Appendix A-3 to Part 60. Method 4-Determination of Moisture Content in Stack Gases.2023.</p> <p>- NTP 900.004:2021. ENVIRONMENTAL MANAGEMENT. Atmospheric Emissions. Method for determining the moisture content in flue gases</p>

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Gaseous Emissions  (Sampling & Analysis) (cont'd.)	<b>Nitrogen Oxides (NO<sub>x</sub>)</b> , as NO <sub>2</sub> , including: <i>Nitric Oxide (NO)</i> <i>Nitrogen Dioxide (NO<sub>2</sub>)</i>	EPA-40 CFR Part 60, Appendix A. Method 7-Determination of Nitrogen Oxide Emissions from Stationary Sources. 2023.
		<b>Nitrogen Oxides (NO<sub>x</sub>)</b> , as NO <sub>2</sub> , including: <i>Nitric Oxide (NO)</i> <i>Nitrogen Dioxide (NO<sub>2</sub>)</i>	NTP 900.007:2021. ENVIRONMENTAL MANAGEMENT. Atmospheric emissions. Determination of nitrogen oxide emissions from stationary sources
		<b>Nitrogen Oxides (NO<sub>x</sub>)</b> , as NO <sub>2</sub> , including: <i>Nitric Oxide (NO)</i> <i>Nitrogen Dioxide (NO<sub>2</sub>)</i>	EPA-40 CFR Part 60, Appendix A. Method 7C - Determination of Nitrogen Oxide Emissions from Stationary Sources (Alkaline Permanganate / Colorimetric Method). 2020.
		<b>Hydrogen Chloride (HCl)</b>	EPA 40 CFR, Part 60, Appendix A-8, Method 26A. Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources Isokinetic Method. 2020.
		<b>Hydrogen Fluoride (HF)</b>	EPA 40 CFR, Part 60, Appendix A-8, Method 26A. Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources Isokinetic Method. 2020.
		<b>Hydrogen Halides (HX)</b> [HCl, HBr and HF]  <b>Halogens (X<sub>2</sub>)</b> [Cl <sub>2</sub> y Br <sub>2</sub> ]	EPA 40 CFR, Part 60, Appendix A-8, Method 26A. Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources Isokinetic Method. 2020.
	Gaseous Emissions  (Field measurement)	<b>Carbon Monoxide (CO)</b>	NTP 900.010:2021 MONITORING OF ATMOSPHERIC EMISSIONS. Determination of carbon monoxide emissions in stationary sources. Instrumental analyzer procedure. 2nd Edition.
		<b>Carbon Monoxide (CO)</b>	EPA 40 CFR, Appendix A-4 to Part 60, Method 10. Determination of Carbon Monoxide Emissions from Stationary Sources (Instrumental Analyzer Procedure). 2017

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Gaseous Emissions  (Field measurement)  (cont'd.)	<i>Carbon Dioxide (CO<sub>2</sub>)</i>	NTP 900.003:2021 MONITORING OF ATMOSPHERIC EMISSIONS. Gas analysis for the determination of molecular weight on a dry basis. 2nd Edition
		<i>Oxygen (O<sub>2</sub>)</i>	NTP 900.003:2021 MONITORING OF ATMOSPHERIC EMISSIONS. Gas analysis for the determination of molecular weight on a dry basis. 2nd Edition
		<i>Carbon Dioxide (CO<sub>2</sub>) Oxygen(O<sub>2</sub>)</i>	EPA METHOD 3A- Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)
		<b>NO<sub>x</sub> (NO, NO<sub>2</sub>), CO, O<sub>2</sub></b> (Applies to equipment with fuel: natural gas, liquid fuel, solid fuel)	US EPA OTM-38 Periodic Monitoring Method for Determination of Oxygen, Carbon Monoxide and Nitrogen Oxides from Stationary Sources using Portable Gas Analyzers. 2020.
		<b>NO<sub>x</sub> (NO, NO<sub>2</sub>), CO, O<sub>2</sub></b> (Applies to equipment with fuel: natural gas, liquid fuel)	EPA CTM-034. Determination of Oxygen, Carbon Monoxide and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) / September 1999.
		<b>Velocity and Volumetric Flow in emissions</b>	EPA-40 CFR, Appendix A-1 to Part 60. Method 2-Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube). 2017.  EPA-40 CFR, Appendix A-1 to Part 60. Method 2C - Determination of gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube). 2017.  NTP 900.002:2021. MONITORING OF ATMOSPHERIC EMISSIONS. Determination of velocity and volumetric flow in combustion

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Gaseous Emissions (Field measurement)  (cont'd.)	<b>Velocity and Volumetric Flow in emissions</b>  (cont'd.)	gases (Pitot tube type S). 2nd Edition.  <i>NTP 712.112:2022 ATMOSPHERIC EMISSIONS MONITORING. Determination of gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube). 1<sup>a</sup> Edition</i>
		<b>Sulfur dioxide in emissions (SO<sub>2</sub>)</b>	EPA-40 CFR, Appendix A-4 to Part 60. Method 6C. Determination of sulfur dioxide emissions from stationary sources (instrumental analyzer procedure). 2017.
		<b>Opacity</b>	Method 191105 Opacity. Referenced in IT-ATM-08.2 Non-standardized measurement methods Bacharach Opacity Measurement. European Regional Development Fund. Desarrollo Regional.
		<b>Nitrogen Oxides (NO<sub>x</sub>), as NO<sub>2</sub>, Nitric Oxide (NO) Nitrogen Dioxide (NO<sub>2</sub>)</b>	EPA CTM-022 Determination of Nitric Oxide, Nitrogen Dioxide and NO <sub>x</sub> Emissions from Stationary Combustion Sources by electrochemical analyzer. 1995
		<b>Hydrogen sulfide</b>  <b>Total hydrocarbons</b>	Method 201210 Validated. Referenced in US EPA OTM-38. Determination of Hydrogen sulfide, Total hydrocarbons using Portable Gas Analyzers Equipped with Electrochemical Sensors.
	Vegetable Tissues (Sampling & Analysis)	<b>Total Metals:</b> <i>Aluminum (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Beryllium (Be), Cadmium (Cd), Calcium (Ca), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Lithium (Li), Magnesium (Mg), Manganese (Mn), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Phosphorus (P),</i>	EPA Method 200.3, Rev. 1, April. 1991. Metals, Total Recoverable in Biological Tissues / EPA Method 200.7, Rev.4.4. EMMC Version 1994.

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ENVIRONMENTAL - CHEMISTRY INORGANIC (cont'd.)		Potassium (K), Selenium (Se), Silver (Ag), Sodium (Na), Strontium (Sr), Thallium (Tl), Uranium (U), Vanadium (V), Zinc (Zn).	
	Biological Tissues (Sampling & Analysis)	<b>Total Metals:</b> Aluminum (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Beryllium (Be), Cadmium (Cd), Calcium (Ca), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Lithium (Li), Magnesium (Mg), Manganese (Mn), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Phosphorus (P), Potassium (K), Selenium (Se), Silver (Ag), Sodium (Na), Strontium (Sr), Thallium (Tl), Uranium (U), Vanadium (V), Zinc (Zn).	EPA Method 200.3, Rev. 1, April.1991. Metals, Total Recoverable in Biological Tissues / EPA Method 200.7, Rev.4.4. EMMC Version 1994.  EPA Method 200.3, Rev. 1, April.1991. Metals, Total Recoverable in Biological Tissues / EPA Method 200.7, Rev.4.4. EMMC Version 1994 cont'd.)
	Natural Water, Water for human use and consumption (Sampling & Analysis)	<b>EDTA (Edetic Acid)</b>	Method 230112. EDTA Analysis in Water - Spectrophotometric Technique (Validate). 2023
	Natural Water, Saline Water and Process Water (Field measurement)	<b>Residual Chlorine (Free)</b>	Chlorine (Residual). DPD Colorimetric Method 240312 SMEWW-APHA-AWWA-WEF 4500 Cl G. 23rd Ed. (Validate)
	Sediments and Sludges	<b>Granulometric analysis</b>	NTP 339.128:1999 (Reviewed 2019) Soils. Test method for granulometric analysis // Government of Chile. Agricultural and Livestock Service SAG. Protocol of analysis methods for soils and sludge (2007). Item 10, Texture 4.1 to 4.3.
		<b>Texture</b>	Mexican Official Standard NOM-021-SEMARNAT-2000 item 7.1.9 Method AS-09 (December 31, 2002). Fertility specifications, salinity and soil classification, study, sampling, and analysis. //

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	(Sampling & Analysis) (cont'd.)	<b>Texture</b> (cont'd.)	Government of Chile. Agricultural and Livestock Service SAG. Protocol of analysis methods for soils and sludge (2007). Item 10, Texture 4.1 to 4.3.
	Soils (Sampling & Analysis)	<b>Conductivity</b> (soil/water ratio 1:1, 1:2, 1:5)	Ministry of Agriculture - National Institute of Agrarian Innovation. Manual of procedures for soil and water analysis for irrigation purposes, 2017; item. 4.2 Determination of electrical conductivity (EC. Soluble salts).
	Air (field measurement)	<b>Determination of the mass concentration of nitrogen oxides: NO<sub>x</sub>, NO, NO<sub>2</sub>.</b>	NTP-ISO 7996:2019 Ambient air. Determination of the mass concentration of nitrogen oxides. Chemiluminescence method 1st Edition.
	Gaseous Emissions (Sampling & Analysis)	<b>Determination of Particulate Matter Emissions from Stationary Sources</b>	<p>-EPA-40 CFR, Appendix A-3 to Part 60. Method 5. Determination of Particulate Matter Emissions from Stationary Sources. 2020.</p> <p>-NTP 900.005.2021 ENVIRONMENTAL MANAGEMENT Atmospheric Emissions. Determination of particulate matter emissions from stationary sources.</p> <p>- EPA-40 CFR, Appendix A-1 to Part 60. Method 1- Sample and Velocity Traverses for Stationary Sources. 2023.</p> <p>-NTP 900.001:2021. ENVIRONMENTAL MANAGEMENT. Atmospheric Emissions. Methods for the determination of transversal sampling points for the measurement of speed in stationary sources.</p> <p>- EPA-40 CFR, Appendix A-1 to Part 60. Method 1A-Sample and Velocity Traverses for Stationary Sources with Small Stacks or Ducts. 2017.</p>

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ENVIRONMENTAL - CHEMISTRY INORGANIC (cont'd.)	Gaseous Emissions (Sampling & Analysis) (cont'd.)	<b>Determination of Particulate Matter Emissions from Stationary Sources</b> (cont'd.)	<p>- NTP 712.115:2022 ATMOSPHERIC EMISSIONS MONITORING. Determination of the sampling point and velocity for stationary sources with small ducts or chimneys. 1st Edition-</p> <p>- EPA-40 CFR, Appendix A-1 to Part 60. Method 2-Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube). 2017.</p> <p>-NTP 900.002:2021. ENVIRONMENTAL MANAGEMENT. Atmospheric Emissions. Determination of chimney gas speed and volumetric flow (Type S Pilot Tube).</p> <p>- EPA-40 CFR, Appendix A-1 to Part 60. Method 2C - Determination of gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube). 2017.</p> <p>- NTP 712.112:2022 ATMOSPHERIC EMISSIONS MONITORING. Determination of gas velocity and volumetric flow rate in small chimneys or ducts (Standard Pitot Tube). 1st Edition.</p> <p>- EPA-40 CFR, Appendix A-2 to Part 60. Method 3 - Gas Analysis for the Determination of Dry Molecular Weight. 2017.</p> <p>- NTP 900.003:2021 MONITORING OF ATMOSPHERIC EMISSIONS. Gas analysis for the determination of molecular weight on a dry basis. 2nd Edition.</p> <p>- EPA METHOD 3A- Determination of Oxygen and Carbon Dioxide Concentrations in</p>

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ENVIRONMENTAL - CHEMISTRY INORGANIC (cont'd.)	Gaseous Emissions (Sampling & Analysis) (cont'd.)	<b>Determination of Particulate Matter Emissions from Stationary Sources</b> (cont'd.)	Emissions from Stationary Sources (Instrumental Analyzer Procedure).  - NTP 712.111:2021 ATMOSPHERIC EMISSIONS MONITORING. Determination of oxygen and carbon dioxide concentrations in emissions from stationary sources. Instrumental analyzer procedure. 1st Edition.  - EPA-40 CFR, Appendix A-3 to Part 60. Method 4-Determination of Moisture Content in Stack Gases.2023.  - NTP 900.004:2021. ENVIRONMENTAL MANAGEMENT. Atmospheric Emissions. Method for determining the moisture content in flue gases
		<b>Determination of cross points for velocity measurement in stationary sources and cyclonic flow.</b>	- EPA-40 CFR, Appendix A-1 to Part 60. Method 1- Sample and Velocity Traverses for Stationary Sources. 2023.  -NTP 900.001:2021. ENVIRONMENTAL MANAGEMENT. Atmospheric Emissions. Methods for the determination of transversal sampling points for the measurement of speed in stationary sources.  - EPA-40 CFR, Appendix A-1 to Part 60. Method 1A-Sample and Velocity Traverses for Stationary Sources with Small Stacks or Ducts. 2017.  - NTP 712.115:2022 ATMOSPHERIC EMISSIONS MONITORING. Determination of the sampling point and velocity for stationary sources with small ducts or chimneys. 1st Edition.

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<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b> (cont'd.)	Gaseous Emissions (Sampling & Analysis) (cont'd.)	<b>Carbon Dioxide (CO<sub>2</sub>)</b> <b>Oxygen (O<sub>2</sub>)</b>	NTP 712.111:2021 MONITORING OF ATMOSPHERIC EMISSIONS. Determination of oxygen and carbon dioxide concentrations in emissions from stationary sources. Instrumental analyzer procedure. 1st Edition
<b>OCCUPATIONAL HEALTH &amp; SAFETY - CHEMISTRY ORGANIC</b>	Air (Sampling & Analysis)	<b>Volatile Organic Compounds:</b> <i>2-chloro-1,3-butadiene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 2,2-Dichloropropane, Bromochloromethane / Chlorobromomethane, Chloroform, Tetrahydrofuran, 1,1,1-trichloroethane / Methylchloroform, 1,2-Dichloroethane, 1,1-Dichloropropene, Benzene, Carbon Tetrachloride, Trichloroethylene, 1,2-Dichloropropane, Dibromomethane, 1,4-Dioxane, Methyl, Bromodichloromethane, cis-1,3-Dichloropropene, 1,2,3-Trichloropropane, trans-1,3-Dichloropropene, Toluene, 1,1,2-Trichloroethane, Ethyl, 1,3-Dichloropropane, Dibromochloromethane, Tetrachloroethylene, 1,2-Dibromoethane, Chlorobenzene, 1,1,1,2-Tetrachloroethane, Ethylbenzene, m-Xylene, p-Xylene, Styrene, Bromoform, cis-1,4-Dichloro-2-butene, 1,1,2,2-Tetrachloroethane, trans-1,4-dichloro-2-butene,</i>	ASTM D3686-20 & ASTM D3687-19. Standard Practice for Sampling Atmospheres to Collect Organic Compound Vapors (Activated Charcoal Tube Adsorption Method) / ASTM D3687-19 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method

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OCCUPATIONAL HEALTH & SAFETY - CHEMISTRY ORGANIC (cont'd.)	Air (Sampling & Analysis) (cont'd.)	Isopropylbenzene, Bromobenzene, 2-Chlorotoluene, n-Propylbenzene, 4-Chlorotoluene, 4-Chlorotoluene, 1,3,5-Trimethylbenzene, Tert-Butylbenzene, 1,2,4-Trimethylbenzene, 1,2,4-Trimethylbenzene, 1,3-Dichlorobenzene, Sec- Butylbenzene, 1,4-Dichlorobenzene, p- Isopropyltoluene, 1,2-Dichlorobenzene, n- Butylbenzene, Nitrobenzene, 1,2-Dibromo-3- chloropropane, 1,2,4-Trichlorobenzene, Naphthalene, Hexachlorobutadiene, 1,2,3-Trichlorobenzene, Ciclohexano, Clorobromometano, Metilciclohexano, Metilcloroformo, n-heptano, n-hexano, n-octano, metilacrilato	ASTM D3686-20 & ASTM D3687-19. Standard Practice for Sampling Atmospheres to Collect Organic Compound Vapors (Activated Charcoal Tube Adsorption Method) / ASTM D3687-19 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method (cont'd.)
		<b>Volatile organic compounds (VOCs)</b>	JIS A 1969: 2005. Indoor Air - Sampling and Analysis of Volatile Organic Compounds by Solvent Desorption/Capillary Gas Chromatography Diffusive Sampling.
	Air (Analysis)	<b>Volatile Organic Compounds:</b> 2-chloro-1,3-butadiene, cis- 1,2-Dichloroethene, trans- 1,2-Dichloroethene, 2,2- Dichloropropane, Bromochloromethane / Chlorobromomethane, Chloroform, Tetrahydrofuran, 1,1,1-trichloroethane / Methylchloroform,	ASTM D3687-19 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method

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<b>OCCUPATIONAL HEALTH &amp; SAFETY - CHEMISTRY ORGANIC</b> (cont'd.)	Air (Analysis) (cont'd.)	<p>1,2-Dichloroethane, 1,1-Dichloropropene, Benzene, Carbon Tetrachloride, Trichloroethylene, 1,2-Dichloropropane, Dibromomethane, 1,4-Dioxane, Methyl, Bromodichloromethane, cis-1,3-Dichloropropene, 1,2,3-Trichloropropane, trans-1,3-Dichloropropene, Toluene, 1,1,2-Trichloroethane, Ethyl, 1,3-Dichloropropane, Di</p> <p>bromochloromethane, Tetrachloroethylene, 1,2-Dibromoethane, Chlorobenzene, 1,1,1,2-Tetrachloroethane, Ethylbenzene, m-Xylene, p-Xylene, p-Xylene, Styrene, Bromoform, cis-1,4-Dichloro-2-butene, 1,1,2,2-Tetrachloroethane, trans-1,4-dichloro-2-butene, Isopropylbenzene, Bromobenzene, 2-Chlorotoluene, n-Propylbenzene, 4-Chlorotoluene, 4-Chlorotoluene, 1,3,5-Trimethylbenzene, Tert-Butylbenzene, 1,2,4-Trimethylbenzene, 1,2,4-Trimethylbenzene, 1,3-Dichlorobenzene, Sec-Butylbenzene, 1,4-Dichlorobenzene, p-Isopropyltoluene, 1,2-Dichlorobenzene, n-Butylbenzene, Nitrobenzene,</p>	ASTM D3687-19 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method (cont'd.)

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<b>OCCUPATIONAL HEALTH &amp; SAFETY - CHEMISTRY ORGANIC</b> (cont'd.)	Air (Analysis) (cont'd.)	1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Naphthalene, Hexachlorobutadiene, 1,2,3-Trichlorobenzene, Cyclohexane, Chlorobromomethane, Methylcyclohexane, Methyl chloroform, n-heptane, n-hexane, n-octane, methyl acrylate	ASTM D3687-19 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method (cont'd.)
<b>OCCUPATIONAL HEALTH &amp; SAFETY - CHEMISTRY INORGANIC</b>	Air (Sampling & Analysis)	<b>Metals:</b> Aluminum, Arsenic, Barium, Beryllium, Calcium, Cadmium, Cobalt, Chrome, Copper, Iron, Potassium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Lead, Antimony, Selenium, Tin, Strontium, Titanium, Thallium, Vanadium, Zinc, Lanthanum, Lithium, Silver, Tellurium, Tungsten, Zirconium	NIOSH 7301, Issue 1. ELEMENTS by ICP (Aqua Regia Ashing), 2003.
		<b>Metals:</b> Aluminum, Arsenic, Barium, Beryllium, Boron, Bismuth, Calcium, Cadmium, Cobalt, Chrome, Copper, Iron, Potassium, Magnesium, Manganese, Molybdenum, Nickel, Sodium, Phosphorus, Lead, Antimony, Selenium, Tin, Strontium, Titanium, Thallium, Vanadium, Zinc, Gallium, Gold, Indium, Tellurium, Palladium, Platinum, Neodymium	NIOSH 7303, Issue 1. ELEMENTS by ICP 7303 (Hot Block/HCl/HNO3 Digestion), 2003.
		<b>Mercury</b>	NIOSH 6009 Issue 2. Mercurio - 1994 Lectura CVAES

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OCCUPATIONAL HEALTH & SAFETY - CHEMISTRY INORGANIC (cont'd.)	Air (Sampling & Analysis) (cont'd.)	<b>Hydrofluoric acid</b>	NIOSH 7906. Issue 2, 2014. PARTICULATE FLUORIDES and HYDROFLUORIC ACID 7906 by Ion Chromatography.
		<b>Volatile Acids:</b> <b>Hydrochloric Acid (HCl), Hydrobromic Acid (HBr), Nitric Acid (HNO<sub>3</sub>)</b>	NIOSH 7907. Issue 1, 2014. VOLATILE ACIDS by Ion Chromatography (Hydrogen Chloride, Hydrogen Bromide, Nitric Acid).
		<b>Non Volatile Acids:</b> <b>Sulfuric Acid, Phosphoric Acid</b>	NIOSH 7908. Issue 1, 2014. NON-VOLATILE ACIDS (Sulfuric Acid and Phosphoric Acid).
		<b>Silica Crystalline (SiO<sub>2</sub>) (Sampling and Analysis)</b>	NIOSH 7601. Issue 3, 2003. Silica, Crystalline, by VIS
		<b>Asbestos (Sampling and Analysis)</b>	NIOSH 7400, Issue 2, 1994. Asbestos and Other Fibers by PCM, Fifth Edition, Issue 3, 29 April 2019
		<b>Sulfur dioxide (SO<sub>2</sub>)</b>	UNE-EN 838:2010 Workplace exposure - Procedures for measuring gases and vapours using diffusive samplers - Requirements and test methods.
		<b>Nitrogen dioxide (NO<sub>2</sub>)</b>	
		<b>Ozone (O<sub>3</sub>)</b>	
		<b>Hydrogen sulfide (H<sub>2</sub>S)</b>	
		<b>Ammonia (NH<sub>3</sub>)</b>	
	Air (Analysis)	<b>Metals</b> <i>Aluminum, Arsenic, Barium, Beryllium, Calcium, Cadmium, Cobalt, Chrome, Copper, Iron, Potassium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Lead, Antimony, Selenium, Tin, Strontium, Titanium, Thallium, Vanadium, Zinc, Lanthanum, Lithium, Silver, Tellurium, Tungsten, Zirconium</i>	NIOSH 7301, Issue 1. ELEMENTS by ICP (Aqua Regia Ashing), 2003. Except Sampling.
		<b>Metals</b> <i>Aluminum, Arsenic, Barium, Beryllium, Boron, Bismuth, Calcium, Cadmium, Cobalt, Chrome, Copper, Iron, Potassium, Magnesium,</i>	NIOSH 7303, Issue 1. ELEMENTS by ICP 7303 (Hot Block/HCl/HNO <sub>3</sub> Digestion), 2003. Except Sampling.



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<b>OCCUPATIONAL HEALTH &amp; SAFETY - CHEMISTRY INORGANIC</b> (cont'd.)	Air (Analysis) (cont'd.)	<i>Manganese, Molybdenum, Nickel, Sodium, Phosphorus, Lead, Antimony, Selenium, Tin, Strontium, Titanium, Thallium, Vanadium, Zinc, Gallium, Gold, Indium, Tellurium, Palladium, Platinum, Neodymium</i>	NIOSH 7303, Issue 1. ELEMENTS by ICP 7303 (Hot Block/HCl/HNO <sub>3</sub> Digestion), 2003. Except Sampling. (cont'd.)
		<b>Silica Crystalline</b> (SiO <sub>2</sub> ) (Only Analysis)	NIOSH 7601. Issue 3, 2003. Silica, Crystalline, by VIS. (EXCEPT SAMPLING).
		<b>Asbestos</b> (Only Analysis)	NIOSH 7400, Asbestos and Other Fibers by PCM Fifth Edition, Issue 3, 29 April 2019 (EXCEPT SAMPLING).
		<b>Determination of filter weight and weight of respirable particles.</b> (Only Analysis)	Method 180910. Determination of weight and weight filter respirable particles (validated) Referenced in NIOSH 0600, Issue 3. Particulates Not Otherwise Regulated, Respirable - 1998 (EXCEPT SAMPLING).
		<b>Determination of weight and weight particle filter totals</b> (inhalable powder) (Only Analysis)	Method 180911. Determination of weight and weight particle filter totals (inhalable powder) - (validated). Referenced in NIOSH 0500, Issue 2. Particulates Not Otherwise Regulated, Total - 1994. (EXCEPT SAMPLING).
	Air (Field measurement)	<b>Clean rooms: Particle count</b>	UNE EN ISO 14644-1: 2016. Clean rooms and local annexes controlled. Part 1. Classification of air cleaning by concentration of particles.
<b>ENVIRONMENTAL-SENSORY</b>	Wastewater, Natural Water, Water for human use and consumption and Saline Water  (Sampling & Analysis)	<b>Odor</b>	SMEWW-APHA-AWWA-WEF 2150 B. 24th Ed. 2023. Odor. Threshold Odor Test.
	Water for human use and consumption  (Sampling & Analysis)	<b>Flavor</b>	SMEWW-APHA-AWWA-WEF 2160 B. 24th Ed. 2023. Taste. Flavor Threshold Test (FTT).

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ENVIRONMENTAL - MICROBIOLOGY	Wastewater, Natural Water, Water for human use and consumption and Saline Water  (Sampling & Analysis)	<b>Microcystin-LR</b>	SAG-180917 Rev. 0 (Validated) 2018. Immunoassay method for the quantification of microcystin-LR
		<b>Virus</b> (Somatic Coliphages)	Virus (somatic Coliphages) referenciado en SMEWW-APHA-AWWA-WEF 9224 B, 23rd Ed. 2017. Detection of Coliphages. Somatic Coliphage Assay.
		<b>Salmonella</b> Detection of <i>Salmonella</i> spp	UNE-EN ISO 19250: 2013 Water Quality - Detection of <i>Salmonella</i> spp.
		<b>Vibrio cholerae</b>	SMEWW-APHA-AWWA-WEF Part 9278. Procedures. Item 1, 2.d.1, ( except for the latex test), 4, 5, 6 (No identification of serogroup O139). 24th Ed. 2023.
		<b>Fecal Streptococcus</b> (Membrane Filter Techniques)	SMEWW-APHA-AWWA-WEF Part 9230 C (item 3 c) , 23th Ed. 2017 <i>Fecal Enterococcus/Streptococcus Groups. Membrane Filter Techniques.</i>
		<b>Fecal Streptococcus</b> (Multiple-Tube Technique)	SMEWW-APHA-AWWA-WEF Part 9230 B, 23th Ed. 2017 <i>Fecal Enterococcus/Streptococcus Groups. Membrane Filter Techniques.</i>
		<b>Fecal Enterococci</b> (Membrane Filter Techniques)	SMEWW-APHA-AWWA-WEF Part 9230 C (item 3.b) 24th Ed. 2023. Fecal Enterococci. Membrane Filter Techniques
		<b>Fecal Enterococci</b> (Multiple-Tube Technique)	SMEWW-APHA-AWWA-WEF Part 9230 B, 24th Ed. 2023. Fecal Enterococci. Multiple-Tube Technique.

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<b>ENVIRONMENTAL - MICROBIOLOGY</b> (cont'd.)	Wastewater, Natural Water, Water for human use and consumption and Saline Water <i>Process Water</i> <i>(Distilled water, Deionized water</i>  (Sampling & Analysis)	<b><i>Fecal Coliform</i></b> <i>(Thermotolerant)</i> <i>(Multiple-Tube Technique)</i>	SMEWW-APHA-AWWA-WEF Part 9221 E-1, 24th Ed. 2023. Multiple-Tube Fermentation Technique for Members of the Coliform Group. Thermotolerant (Fecal) Coliform Procedure. Thermotolerant coliform test (EC medium)
		<b><i>Fecal Coliform</i></b> <i>(Thermotolerant)</i> <i>(Membrane Filter Techniques)</i>	MEWW-APHA-AWWA-WEF Part 9222 D, 24th Ed. 2023. Membrane Filter Technique for Members of the Coliform Group. Thermotolerant (Fecal) Coliform Membrane Filter Procedure.
		<b><i>Total Coliform</i></b> <i>(Membrane Filter Techniques)</i>	SMEWW-APHA-AWWA-WEF Part 9222 B, 24th Ed. 2023. Membrane Filter Technique for Members of the Coliform Group. Standard Total Coliform Membrane Filter Procedure. Procedure using Endo Media.
		<b><i>Total Coliform</i></b> <i>(Multiple-Tube Technique)</i>	SMEWW-APHA-AWWA-WEF Part 9221 B, 24th Ed. 2023. Multiple-Tube Fermentation Technique for Members of the Coliform Group. Standard Total Coliform Fermentation Technique.
		<b><i>Escherichia coli</i></b> <i>(Multiple-Tube Technique)</i>	SMEWW-APHA-AWWA-WEF part 9221 G. (Item 2), 24 <sup>th</sup> Ed. 2023. Multiple-Tube Fermentation Technique for Members of the Coliform Group. Other <i>Escherichia coli</i> Procedures. <i>Escherichia coli</i> Test (Indole Production)
		<b><i>Escherichia coli</i></b> <i>(Membrane Filter Techniques)</i>	SMEWW-APHA-AWWA-WEF Part 9222 H. Membrane Filter Technique for Members of the Coliform Group. Partitioning <i>E. coli</i> from MF Total Coliform Using EC-MUG Broth. 24th Ed. 2023.
		<b><i>Heterotrophic Bacteria</i></b> <i>(Pour Plate Method)</i>	SMEWW-APHA-AWWA-WEF Part 9215B, 24th Ed. 2023. Heterotrophic Plate Count. Pour Plate Method.

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<b>ENVIRONMENTAL - MICROBIOLOGY</b> (cont'd.)	Wastewater, Natural Water, Water for human use and consumption and Saline Water <i>Process Water (Distilled water, Deionized water, Reverse osmosis water)</i>  (Sampling & Analysis) (cont'd.)	<i>Heterotrophic Plate Count.</i> <i>Membrane Filter Procedure.</i>	SMEWW-APHA-AWWA-WEF Part 9215 D, 24th Ed. 2023. Heterotrophic Plate Count. Membrane Filter Method.
	<i>Water for human use and consumption</i> <i>Process Water (Distilled water, Deionized water, Reverse osmosis water)</i>  (Sampling & Analysis)	<b><i>Pseudomonas aeruginosa</i></b> <i>Detection and enumeration of Pseudomonas aeruginosa</i>	ISO 16266. Water quality - Detection and enumeration of <i>Pseudomonas aeruginosa</i> - Method by membrane filtration.
	Water for human use and consumption  (Sampling & Analysis)	<b><i>Staphylococcus aureus</i></b>	SMEWW-APHA-AWWA-WEF Part 9213 B (Item 6), 24th Ed. 2023. Recreational Waters. Swimming Pools. Test for Staphylococci or <i>Staphylococcus aureus</i>
	Soils, Sediments, Sludges and Biosolids (Sampling & Analysis)	<b><i>Total Coliform</i></b>	SM 9221 B. 24th Ed. 2023. Multiple-Tube Fermentation Technique for Members of the Coliform Group. Standard Total Coliform Fermentation Technique. EPA Method 1680. Item 11 y Item 14.
		<b><i>Escherichia coli</i></b>	EPA Method 1680 Fecal Coliforms in Sewage Sludge (Biosolids) by Multiple-Tube Fermentation using Lauryl Tryptose Broth (LTB) and EC Medium, 2014 // SM Part 9221 G. (Item 2). 24th Ed. 2023. Multiple-Tube Fermentation. Technique for Members of the Coliform Group. Other <i>Escherichia coli</i>

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<b>ENVIRONMENTAL - MICROBIOLOGY</b> (cont'd.)	Soils, Sediments, Sludges and Biosolids (Sampling & Analysis) (cont'd.)	<i>Escherichia coli</i> (cont'd.)	Procedures. Escherichia coli. Test (Indole Production)
		<i>Salmonella sp.</i>	EPA Method 1682 Method 1682: Salmonella in Sewage Sludge (Biosolids) by Modified Semisolid Rappaport-Vassiliadis (MSRV) Medium, 2006.
		<i>Fecal Coliforms</i>	EPA Method 1680: Fecal Coliforms in Sewage Sludge (Biosolids) by Multiple-Tube Fermentation using Lauryl Tryptose Broth (LTB) and EC Medium, 2014.
	Wastewater, Natural Water, Water for human use and consumption and Process Water (Distilled water, Deionized water, Reverse osmosis water) (Sampling & Analysis)	<i>Fungal Count by Pour Plate Method (Molds and Yeasts).</i>	SMEWW-APHA-AWWA-WEF Part 9610 B, 24th Ed. 2023. Detection of Fungi. Pour Plate Technique.
	Natural Water, Water for human use and consumption and Process Water (Distilled water, Deionized water, Reverse osmosis water) (Sampling & Analysis)	<i>Clostridium perfringens Count</i>	UNE-EN ISO 14189:2017 (corrected version July 2018) Water quality - Enumeration of Clostridium perfringens - Method using membrane filtration (ISO 14189:2013)
<b>OCCUPATIONAL HEALTH &amp; SAFETY - MICROBIOLOGY</b> <b>OCCUPATIONAL</b>	Air (Sampling & Analysis)	<i>Bacteria</i>	NIOSH 0800 BIOAEROSOL SAMPLING (Indoor Air). Culturable organisms: bacteria, fungi, thermophilic actinomycetes
		<i>Fungi</i>	NIOSH 0800 BIOAEROSOL SAMPLING (Indoor Air). Culturable organisms: bacteria, fungi, thermophilic actinomycetes.



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<b>OCCUPATIONAL HEALTH &amp; SAFETY - MICROBIOLOGY OCCUPATIONAL</b> (cont'd.)	Air  (Sampling & Analysis) (cont'd.)	<b>Aerobics</b>	NIOSH 0800 BIOAEROSOL SAMPLING (Indoor Air). Culturable organisms: bacteria, fungi, thermophilic actinomycetes.
	Living Surfaces Regular and Irregular Inert Surfaces  (Sampling & Analysis)	<b>Mold and yeast count</b>	ICMSF Food Microorganisms. Its meaning and methods of enumeration. P.166-167 2nd Ed. Reprint 2000. Mould and yeast counts. Method of counting molds and yeasts by sowing in plate in the whole medium. RM N°461-2007 MINSA. 8.2; 8.4. Technical Guide for the Microbiological Analysis of Surfaces in contact with Food and Beverages
		<b>Mesophilic Aerobic Count</b>	ISO 4833-1:2013, <b>/Amd 1: 2022</b> Microbiology of the food chain -- Horizontal method for the enumeration of microorganisms -- Part 1: Colony count at 30 degrees C by the pour plate technique-- Amendment 1: Clarification of scope // RM N°461-2007 MINSA. 8.2; 8.4. Technical Guide for the Microbiological Analysis of Surfaces in Contact with Food and Beverages
		<b>Escherichia coli count</b>	Compendium of Methods for the Microbiological Examination of Foods / APHA. 5th Ed. 2015, Cap. 9, Parte 9.933. Enterobacteriaceae, Coliforms, and Escherichia coli as Quality and Safety Indicators. VRBA/MUG Method for E.coli and coliforms // RM N°461-2007 MINSA. 8.2; 8.4. Technical Guide for the Microbiological Analysis of Surfaces in Contact with Food and Beverages.
<b>ENVIRONMENTAL – PHYSICAL MEASUREMENTS</b>	Wastewater, Natural Water, Water for human use and consumption (Field measurement)	<b>Flow</b>	ISO 748:2021 Hydrometry- Measurement of liquid flow in open channels - Velocity area methods using point velocity measurements.

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<b>ENVIRONMENTAL – PHYSICAL MEASUREMENTS</b> (cont'd.)	Wastewater, Natural Water, Water for human use and consumption (Field measurement) (cont'd.)	<b>Flow</b>	NTP 214.060:2016. WASTEWATER. Sampling protocol for non-domestic wastewater that is discharged into the sewer system- Annex D, Flow measurement methods.
		<b>Transparency</b>	DIN EN ISO 7027-2:2019-06 Water quality - Determination of turbidity - Part 2: Semi-quantitative methods for the assessment of transparency of waters (ISO 7027-2:2019)
	Buildings (Field Measurement)	<b>Vibrations in buildings</b>	DIN 4150-3:2016 Vibrations in buildings – Part 3: Effects on structures
	Vibration of fixed structures (Field Measurement)	<b>Mechanical vibration and shock — Vibration of fixed structures</b> <b>Vibraciones y choques mecánicos - Vibración de estructuras fijas</b>	ISO 4866:2010 Mechanical vibration and shock - Vibration of fixed structures - Guidelines for the measurement of vibrations and evaluation of their effects on structures.
		<b>Vibraciones y choques mecánicos. Vibración de estructuras fijas.</b>	NTP-ISO 4866:2013 (revisada el 2019). Vibraciones y choques mecánicos. Vibración de estructuras fijas. Lineamientos para la medición de vibraciones y la evaluación de sus efectos sobre las estructuras. 1ª Edición.
<b>ENVIRONMENTAL – ACOUSTIC</b>	Environmental noise (Field measurement)	<b>Noise</b> <i>Determination of environmental noise</i>	ISO 1996-1:2016 / ISO 1996-2:2017(E) Acoustics — Description, Measurement and assessment of environmental noise Part 1: Basic quantities and assessment procedures / Acoustic – Description, Measurement and assessment of environmental noise. Part 2: Determination of sound pressure levels.
<b>ENVIRONMENTAL – CLIMATOLOGY</b>	Meteorological parameters (Field measurement)	<b>Meteorological parameters:</b> <i>Environmental temperature, RH, Atmospheric pressure, Wind speed, Direction of the wind, Precipitation</i>	ASTM D5741-96(2017). Standard Practice for Characterizing Surface Wind Using a Wind Vane and Rotating Anemometer.

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<b>ENVIRONMENTAL – CLIMATOLOGY</b> (cont'd.)	Meteorological parameters  (Field measurement)	<b>Meteorological parameters:</b> <i>Environmental temperature, RH (Relative Humidity) Atmospheric pressure, Wind speed, Direction of the wind, Precipitation Solar Radiation</i>	ASTM D5741-96(Reapproved 2017). Standard Practice for Characterizing Surface Wind Using a Wind Vane and Rotating Anemometer / EPA 454/B-08-002. March 2008 Quality Assurance Handbook for Air Pollution Measurement Systems Volume IV: Meteorological Measurements Version 2.0.
<b>OCCUPATIONAL HEALTH &amp; SAFETY – PHYSICAL MEASUREMENTS</b>	Occupational noise  (Field measurement)	<b>Noise</b> <i>Determination of exposure to noise at work</i>	UNE – EN ISO 9612 (2009). Acoustics - Determination of occupational noise exposure - Engineering method.
	Work environmental  (Field measurement)	<b>Ergonomics of thermal stress in hot environments</b>	ISO 7243:2017(E) Ergonomic of the thermal environment – Assessment of heat stress using the WBGT (wet bulb globe temperature) index.
		<b>Ergonomics of thermal stress of cold stress</b>	UNE ISO 11079:2007 Ergonomics of the thermal environment - Determination and interpretation of cold stress when using required clothing insulation (IREQ) and local cooling effects.
		<b>Lighting</b>	UNE-EN 12464-1:2022. Light and lighting - Lighting of work places - Part 1: Indoor work places. UNE-EN 12464-2:2016 Lighting of workplaces. Part 2: External workplaces
	Occupational Health (Field measurement)	<b>Vibration</b> <i>Measurement and evaluation of human exposure to hand-transmitted vibration</i>	UNE – EN ISO 5349-2:2002/A1:2016 Mechanical vibration - Measurement and evaluation of human exposure to hand-transmitted vibration - Part 2: Practical guidance for measurement at the workplace. (ISO 5349-2:2001/Amd 1:2015)
		<b>Vibration</b> <i>Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration</i>	NTP-ISO 2631-1:2011 (revised 2022) Mechanical vibration and shock. Evaluation of human exposure to whole-body vibration. Part 1: General requirements

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FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
<b>OCCUPATIONAL HEALTH &amp; SAFETY - PHYSICAL MEASUREMENTS</b> (cont'd.)	Occupational Health (Field measurement) (cont'd.)	<b>Vibration</b> <i>Vibration in buildings.</i>	NTP-ISO 2631-2:2012 (revised 2022) Mechanical Vibration and Shock. Evaluation of human exposure to whole-body vibration. Part 2: Vibration in buildings (1 Hz to 80 Hz)
	Air  (Field measurement)	<b>Electromagnetic Field</b> <b>(Magnetic Field Intensity)</b>	IEEE 644-2019. IEEE  Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines.
		<b>Volatile Organic Compounds,</b> <b>O<sub>2</sub>, CO, H<sub>2</sub>S, LEL,</b> <b>Methane (CH<sub>4</sub>), Formaldehyde (HCHO), CO<sub>2</sub>, Ozone,</b> <b>Chlorine (Cl<sub>2</sub>), Chlorine Dioxide (ClO<sub>2</sub>), Ammonia (NH<sub>3</sub>)</b>	Method 200130 Electrochemical technique with photoionization Detector. MultiRAE User's Guide Rev C May 2013 P/N: M01-4003-000 RAE, Systems Inc.
<b>PLASTIC MATERIALS - CHEMISTRY INORGANIC</b>	Plastic materials intended for food contact  (Analysis)	<b>Metals</b> <b>Determination of the specific migration of metals:</b> Aluminum, Barium, Zinc, Copper, Cobalt, Iron, Lithium, Manganese, Nickel, Antimony, Arsenic, Cadmium, Chromium, Lead, Mercury, Lanthanum, Europium, Gadolinium, Terbium	NTP 399.163-5:2023 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 5: Determination of the content and specific migration of metals in dyes and pigments  NTP 399.163-1:2023 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 1: General provisions and requirements. 3rd Edition.  NTP 399.163-2:2021 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 2: Food classification, simulants and test methods. 4 th Edition.

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PLASTIC MATERIALS - CHEMISTRY INORGANIC (cont'd.)	Plastic materials intended for food contact  (Analysis) (cont'd.)	<b>Determination of the specific migration of metals:</b> Aluminum, Barium, Zinc, Copper, Cobalt, Iron, Lithium, Manganese, Nickel, Antimony, Arsenic, Cadmium, Chromium, Lead, Mercury, Lanthanum, Europium, Gadolinium, Terbium // Boron, Tin, Silver	NTP 399.163-5:2023 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 5: Determination of specific metal content and migration in dyes and pigments.  // MERCOSUR/GMC/RES. N°15/10. MERCOSUR Technical Regulations on dyes in plastic containers and equipment intended to be in contact with food (Repeal of RES. GMC No. 28/93), ANNEX, No. 3. Tests for printed plastic containers and equipment and/or containing dyes in their formulation, intended to come into contact with food, Item 3.2 Determination of specific migration of metals and other elements.  NTP 399.163-1:2023 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 1: General provisions and requirements. 3rd Edition.  NTP 399.163-2:2021 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 2: Food classification, simulants and test methods. 4 th Edition.
		<b>Total (global) migration test in Materials and articles in contact with food-stuffs.</b>  (Food simulants: Acetic acid 3% m/V, 10% ,20%, 50% V/V Ethanol	NTP 399.163-6:2016/ENM 1:2017 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD Part 6: Total migration tests on packaging. Amendment 1. 1st Edition.  NTP 399.163-1:2023 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 1: General

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PLASTIC MATERIALS - CHEMISTRY INORGANIC (cont'd.)	Plastic materials intended for food contact  (Analysis) (cont'd.)	<b>Total (global) migration test in Materials and articles in contact with food-stuffs.</b>  (Food simulants: Acetic acid 3% m/V, 10% ,20%, 50% V/V Ethanol (cont'd.)	provisions and requirements. 3rd Edition. NTP 399.163-2:2021 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 2: Food classification, simulants and test methods. 4 th Edition.
		<b>Total (global) migration test in Materials and articles in contact with food-stuffs.</b> <b>In evaporable simulants</b>  (Food simulants: Acetic acid 3% m/V, 10% ,20%, 50%, 95% V/V Ethanol, Isooctano, Purified water	UNE-EN 1186-3:2023 Materials and articles in contact with foodstuffs - Plastics - Part 3: Test methods for overall migration in evaporable simulants UNE-EN 1186-1:2002 Materials and articles in contact with foodstuffs. Plastics. Part 1: Guide to the selection of conditions and test methods for overall migration.
	Ink and pigment for food contact plastics Analysis	<b>Determination of the content of heavy metals in dyes and pigments:</b> <i>Antimony, Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Zinc.</i>	NTP 399.163-5:2023. PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 5: Determination of the content and specific migration of metals in dyes and pigments.  NTP 399.163-1:2023 PLASTIC CONTAINERS AND ACCESSORIES IN CONTACT WITH FOOD. Part 1: General provisions and requirements. 3rd Edition
PLASTIC MATERIALS - CHEMISTRY INORGANIC	Plastic materials intended for food contact  (Analysis)	<b>Total (global) migration test in Materials and articles in contact with food-stuffs.</b> <b>Migration in vegetable oils.</b>	UNE-EN 1186-2:2023 Materials and articles in contact with foodstuffs - Plastics - Part 2: Test methods for overall migration in vegetable oils.
PLASTIC MATERIALS - CHEMISTRY ORGANIC	Plastic materials intended for food contact	<b>Residual Vinyl Chloride</b>	ISO 6401:2022 Plastics — Poly(vinyl chloride) — Determination of residual vinyl chloride monomer using gas-chromatographic method.

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<b>TOYS AND DESKTOP ITEMS - TOXICOLOGY - CHEMISTRY INORGANIC</b>	<p>Toys, toy parts and stationery based on: Coatings for paints, varnishes, lacquers, printing inks, polymers, foams or the like. Polymeric and similar materials. Paper and paperboard. Natural and synthetic textiles, Crystal, Ceramic, metallic materials. Wood, fiberboard, bone and leather. Compressed pill tablets, materials intended to leave a trace. Flexible modeling materials, including modeling clay and plaster. Liquid paints, finger paint, lacquers, varnishes, liquid ink and similar materials. Glue sticks.</p> <p>(Analysis)</p>	<p><b><i>Metal migration in toys and desktop items:</i></b>  <i>Arsenic, Aluminum, Antimony, Barium, Boron, Cadmium, Copper, Chromium, Cobalt, Tin, Strontium, Lead, Mercury, Manganese, Selenium, Nickel, Zinc.</i></p>	<p>UNE-EN 71-3:2020+A1:2021  Safety of toys - Part 3: Migration of certain elements.</p>
<b>TOYS - TOXICOLOGY - CHEMISTRY ORGANIC</b>	<p>toys and children's products (which are made of plastics, textiles, coatings and liquids)</p> <p>(Analysis)</p>	<p><b><i>Phthalate Esters</i></b></p>	<p>ISO 8124-6:2023 Safety of toys — Part 6: Certain phthalate esters.</p>
<b>ENVIRONMENTAL TOXICOLOGY - CHEMISTRY INORGANIC</b>	<p>Solid Waste (Sludge toxicity) or other solids, semi-solids or liquids, Soils, Sediments</p> <p>(Sampling &amp; Analysis)</p>	<p><b><i>Metals in TCLP (Toxicity Characteristic Leaching Procedure)</i></b>  <b><i>Metals:</i></b>  <i>Aluminum (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Boron (B), Beryllium (Be), Cadmium (Cd), Calcium (Ca), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Lithium (Li), Magnesium</i></p>	<p>EPA 1311 Rev.0:1992. Toxicity Characteristic Leaching Procedure / Method EPA 6010D, Rev. 5, 2018. Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES).</p>

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<b>ENVIRONMENTAL TOXICOLOGY - CHEMISTRY INORGANIC</b> (cont'd.)	Solid Waste (Sludge toxicity) or other solids, semi-solids or liquids, Soils, Sediments  (Sampling & Analysis (cont'd.))	(Mg), Manganese (Mn), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Phosphorus (P), Potassium (K), Selenium (Se), Silica (SiO <sub>2</sub> ), Silver (Ag), Sodium (Na), Strontium (Sr), Thallium (Tl), Estaño, Titanium (Ti), Vanadium (V), Zinc (Zn), Thorium (Th), Uranium (U), Tungsten (W)	EPA 1311 Rev.0:1992. Toxicity Characteristic Leaching Procedure / Method EPA 6010D, Rev. 5, 2018. Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES). (cont'd.)
	Liquid wastes, Solid waste, Multiphasic wastes, Sludge, Soil extracts Sediments	<b>Reactivity - Hydrocyanic Acid (HCN)</b>	USEPA, SW-846: Test Methods for Evaluating Solid Wastes, Physical Chemical Methods, Chapter 7, Cap. 7.3.1 y 7.3.2 / EPA 9014 Rev.1:2014. Cyanide in Waters and Extracts using Titrimetric and Manual Spectrophotometric Procedures.
		<b>Reactivity - Hydrogen Sulfide (H<sub>2</sub>S)</b>	USEPA, SW-846: Test Methods for Evaluating Solid Wastes, Physical Chemical Methods, Chapter 7, Cap. 7.3.1 y 7.3.2 / EPA 9034: 1996. Titrimetric Procedure for Acid-Soluble and Acid Insoluble Sulfides.
	Aqueous liquid waste, Non-aqueous liquid waste, Solid waste, (sampling & analysis)	<b>Corrosivity</b>	SW-846 EPA Method 1110A: 2004 Corrosivity Toward Steel
	Liquid wastes, Multiphasic wastes, Sludge, (sampling & analysis)	<b>Corrosivity - pH</b>	SW-846 EPA Method 9040C:2004. pH Electrometric measurement.
	Solid waste Soil (sampling & analysis)	<b>Corrosivity -pH</b>	EPA SW-846, Method 9045 D (Rev4) 2004. Soil and waste pH.
	Solid waste, Sludge, (sampling & analysis)	<b>Ignitability</b>	SW-846 EPA 1030 Rev.1:2014. Ignitability of Solids.
	Liquid wastes, (sampling & analysis)	<b>Ignitability</b>	ASTM D8175-18 Standard Test Method for Finite Flash Point Determination of Liquid Wastes by Pensky-Martens Closed Cup Tester

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<b>ENVIRONMENTAL TOXICOLOGY - CHEMISTRY INORGANIC</b> (cont'd.)	Solid waste, Liquid wastes, Multiphasic wastes  (sampling & analysis)	<b>Waste characterization: metals</b>	UNE-EN 13657:2003 (R-2019) Characterization of waste - Digestion for subsequent determination of aqua regia soluble portion of elements.
<b>ENVIRONMENTAL TOXICOLOGY - CHEMISTRY ORGANIC</b>	Solid Waste (Sludge toxicity) or other solids, semi-solids or liquids, Soils, Sediments  (Sampling & Analysis)	<b>Volatile Organic Compounds in TCLP (Toxicity Characteristic Leaching Procedure)</b>  1,1-Dichloroethene, Dichloromethane, Trans-1,2- Dichloroethylene, 1,1-Dichloroethane, 2,2- Dichloropropane, Cis-1,2-Dichloroethylene, Bromochloromethane, 1,1,1-Trichloroethane, 1,1- Dichloropropene, Carbon Tetrachloride, 1,2-Dichloroethane, trichloroethylene, 1,2-Dichloropropane, Dibromomethane, Cis-1,3-Dichloropropene, Trans-1,3- Dichloropropene, 1,1,2 Trichloroethane, 1,3-Dichloropropane, tetrachloroethylene, 1,2-Dibromoethane, Chlorobenzene, 1,1,1,2-Tetrachloroethane, Styrene, Cumene, 1,1,2,2 Tetrachloroethane, 1,2,3- Trichloropropane, n-Propylbenzene, Bromobenzene, 1,3,5- Trimethylbenzene, 2-Chlorotoluene, 4-Chlorotoluene, Tert-Butylbenzene, 1,2,4- Trimethylbenzene, Sec- Butylbenzene, p-Isopropyltoluene, 1,3 Dichlorobenzene, 1,4-Dichlorobenzene,	EPA 1311 Rev.0:1992. Toxicity Characteristic Leaching Procedure. / Method 8260D – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) Revision 4, June 2018.

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<b>ENVIRONMENTAL TOXICOLOGY - CHEMISTRY ORGANIC</b> (cont'd.)	Solid Waste (Sludge toxicity) or other solids, semi-solids or liquids, Soils, Sediments  (Sampling & Analysis) (cont'd.)	<i>n-Butylbenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Hexachlorobutadiene, Naphthalene, 1,2,3-Trichlorobenzene, Chloroform, Bromodichloromethane, Dibromochloromethane, Bromoform</i>	EPA 1311 Rev.0:1992. Toxicity Characteristic Leaching Procedure. / Method 8260D – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) Revision 4, June 2018. (cont'd.)
		<b>Pesticides in TCLP (Toxicity Characteristic Leaching Procedure)</b>  <i>Methamidophos, Malathion, Parathion, Pentachlorophenol, Lindane, Heptachlor, Aldrin, Heptachlor epoxide, Chlordane-Trans, Endosulfan I, Chlordane-Cis, Dieldrin, DDE-p, p (4,4-DDE), Endrin, Endosulfan II, DDD-p, p (4,4'-DDD), DDT-p, p (Dichloro Diphenyl Trichloro ethane)</i>	EPA 1311 Rev.0:1992. Toxicity Characteristic Leaching Procedure. / EPA Method 8270E, Rev 06. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) - 2018.
<b>ENVIRONMENTAL TOXICOLOGY - MICROBIOLOGY</b>	Solid waste, Multiphasic wastes  (sampling & analysis)	<b>Total Coliform</b>	SM 9221 B. 24th Ed. 2023  Multiple-Tube Fermentation Technique for Members of the Coliform Group. Standard Total Coliform Fermentation Technique. EPA Method 1680. Item 11 y Item 14.
		<b>Salmonella sp</b>	EPA Method 1682 Method 1682: Salmonella in Sewage Sludge (Biosolids) by Modified Semisolid Rappaport Vassiliadis (MSRV) Medium, 2006.



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<b>ENVIRONMENTAL TOXICOLOGY - MICROBIOLOGY</b> (cont'd.)	Solid waste, Multiphasic wastes  (sampling & analysis) (cont'd.)	<b><i>Escherichia coli</i></b>	EPA Method 1680  Fecal Coliforms in Sewage Sludge (Biosolids) by Multiple-Tube Fermentation using Lauryl Tryptose Broth (LTB) and EC Medium, 2014 // SM Part 9221 G. (Item 2). 24th Ed. 2023. Multiple-Tube Fermentation. Technique for Members of the Coliform Group. Other <i>Escherichia coli</i> Procedures. <i>Escherichia coli</i> . Test (Indole Production)
<b>FOODS - MICROBIOLOGY</b>	Foods (Sampling & Analysis)	<b><i>Mold count</i></b>	ICMSF Food Microorganisms. Its meaning and methods of enumeration. P.166-167 2nd Ed. Reprint 2000. Mould and yeast counts. Method of counting molds and yeasts by sowing in plate in the whole medium
		<b><i>Yeast count</i></b>	ICMSF Food Microorganisms. Its meaning and methods of enumeration. P.166-167 2nd Ed. Reprint 2000. Mould and yeast counts. Method of counting molds and yeasts by sowing in plate in the whole medium
		<b><i>Mesophilic Aerobic Count</i></b>	ISO 4833-1:2013, /Amd 1: 2022 Microbiology of the food chain -- Horizontal method for the enumeration of microorganisms -- Part 1: Colony count at 30 degrees C by the pour plate technique-- Amendment 1: Clarification of scope
		<b><i>Total Coliform Enumeration</i></b>	ISO 4831:2006. Except item 9.1, Microbiology of food and animal feeding stuffs -- Horizontal method for the detection and enumeration of coliforms -- Most probable number technique.

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FOODS - MICROBIOLOGY (cont'd.)	Foods (Sampling & Analysis) (cont'd.)	<b><i>Staphylococcus aureus</i></b> <i>Enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species)</i>	ISO 6888-1:2021/ Amd 1:2023 Microbiology of the food chain- Horizontal method for the enumeration of coagulase-positive staphylococci ( <i>Staphylococcus aureus</i> and other species) Part 1: Method using Baird - Parker agar medium- Amendment 1.
		<b><i>Escherichia coli</i></b> <i>Presumptive listing of Escherichia coli</i>	ISO 7251:2005, Microbiology of food and animal feeding stuffs -- Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> -- Most probable number technique. Except 9.1
		<b><i>Salmonella sp.</i></b>  <b><i>Salmonella sp.</i></b> (cont'd.)	ISO 6579-1:2017/AMD 1:2020, Microbiology of the food chain — Horizontal method for the detection, enumeration, and serotyping of <i>Salmonella</i> — Part 1: Detection of <i>Salmonella</i> spp. — Amendment 1: Broader range of incubation temperatures, amendment to the status of Annex D, and correction of the composition of MSRV and SC. <b><u>Except 9.1 and Annex D</u></b>
CHEMICAL PRODUCTS - BIOCIDES ACTIVITY	Disinfectants, Cleaning products	<b><i>Bactericidal activity (microbial confrontation)</i></b>	UNE-EN 1040:2006 Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of basic bactericidal activity of chemical disinfectants and antiseptics - Test method and requirements (phase 1).
		<b><i>Fungicidal activity (microbial confrontation)</i></b>	UNE-EN 1275:2007 Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of basic fungicidal or basic yeasticidal activity of chemical disinfectants and antiseptics - Test method and requirements (phase 1).

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<b>ELECTRIC AND MAGNETIC FIELD LEVELS GENERATED BY AC POWER SYSTEMS</b>	Non-ionizing radiation: Measurement procedures with regard to public exposure	<b><i>Electric and magnetic fields</i></b>	UNE-EN 62110:2013/AC:2015. Electric and magnetic fields levels generated by AC power systems – Measurement procedures with regard to public exposure
<b>MEASUREMENT OF DC MAGNETIC, AC MAGNETIC AND AC ELECTRIC FIELDS</b>	Non-ionizing radiation: 1 Hz to 100 kHz with regard to exposure of human beings	<b><i>Electric and magnetic fields</i></b>	IEC 617862:2014 Measurement of DC magnetic, AC magnetic and AC electric fields from 1 Hz to 100 kHz with regard to exposure of human beings - Part 2: Basic standard for measurements
<b>ELECTRICAL INSULATING LIQUIDS</b>	Dielectric oil (sampling & analysis)	<b><i>PCBs</i></b>	ASTM D4059 - 00 (Reapproved 2018). Standard Test Method for Analysis of Polychlorinated Biphenyls in Insulating Liquids by Gas Chromatography
		<b><i>PCBs</i></b>	EPA SW-846 Method 9079 Screening Test Method for Polychlorinated Biphenyls in Transformer Oil
<b>SOIL MECHANICS PHYSICO-CHEMICAL TESTS</b>	Soils (Sampling & Analysis)	<b><i>Liquid limit, plastic limit, and plasticity index of soils.</i></b>	NTP 339.129:1999 (revised 2019) SOILS. Test method to determine the liquid limit, plastic limit and soil plasticity index. ASTM D4318-17e1 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
		<b><i>Classification of soils (SUCS)</i></b>	NTP 339.134:1999 (revised 2019) SOILS. Method for soil classification for engineering purposes (unified soil classification system, SUCS)  ASTM D2487-17e1 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
		<b><i>Soil compaction (MODIFIED PROCTOR)</i></b>	NTP 339.141 1999 (revised 2019) SOILS. Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56 000 ftlb/ft <sup>3</sup> (2 700 kN-m/m <sup>3</sup> ))

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<b>SOIL MECHANICS PHYSICOCHEMICAL TESTS</b> (cont'd.)	Soils (Sampling & Analysis) (cont'd.)	<b>Soil compaction (MODIFIED PROCTOR)</b> (cont'd.)	ASTM D1557 - 12 (2021) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft <sup>3</sup> (2,700 kN-m/m <sup>3</sup> ))
		<b>Relative specific weight or Specific Gravity of soils</b>	NTP 339.131 1999 (revised 2019) SOILS. Test Method to determine the relative specific weight of solid particles in a soil.  ASTM D854-14 Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer
		<b>pH</b>	NTP 339.176: 2002 (revised 2015). Soils. Standardized test method for the determination of the pH value in soils and ground-water.
		<b>Moisture</b>	NTP 339.127 1998 (revised 2019) SOILS. Test method to determine the moisture content of a soil.
		<b>Classification of soils AASHTO</b>	NTP 339.135:1999 (revised 2019) SOILS Method for classifying soils for use on transport road.
		<b>Organic Matter</b>	AASHTO T 267, Standard Method of Test for Determination of Organic Content in Soils by Loss of Ignition.
	Soil and rock	<b>Moisture</b>	ASTM D2216-19 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
	Aggregates for concrete: Fine aggregate, Coarse aggregate	<b>Inalterability of aggregates (Durability)</b>	NTP 400.016:2020 AGGREGATES. Determination of the inalterability of aggregates by means of sodium sulfate or magnesium sulfate.
		<b>Resistance to degradation (abrasion)</b>	NTP 400.019:2020 AGGREGATES. For resistance to degradation of small size coarse aggregate by abrasion and impact in the Los Angeles machine. Standard test method.

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SOIL MECHANICS PHYSICOCHEMICAL TESTS (cont'd.)	Aggregates for concrete: Fine aggregate, Coarse aggregate (cont'd.)	<b>Resistance to degradation (abrasion)</b> (cont'd.)	ASTM C131/C131M-20 Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
		<b>Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.</b>	ASTM D4791-19 Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.
		<b>Sulfate</b>	NTP 400.042:2016 AGGREGATES. Standard test method for quantitative determination of water-soluble chloride and sulfate ion content for aggregates in concrete.
		<b>Chloride</b>	NTP 400.042:2016 AGGREGATES. Standard test method for quantitative determination of water-soluble chloride and sulfate ion content for aggregates in concrete.
	Aggregates for concrete: Coarse aggregate	<b>Granulometric analysis. fine and coarse aggregates</b>	NTP 400.012:2021 AGGREGATES. Sieve analysis of fine and coarse aggregate. Test method.
		<b>Relative density (specific weight) and absorption coarse aggregate</b>	NTP 400.021:2020 AGGREGATES. Relative density (specific weight) and absorption of coarse aggregate. Test method.
	Aggregates for concrete: Fine aggregate	<b>Sand Equivalent</b>	ASTM D2419 - 22 Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
		<b>Organic impurities in fine aggregate (Color)</b>	NTP 400.024:2020 AGGREGATE. Test method to determine organic impurities in fine aggregate for concrete.
	Water for concrete	<b>Alkalies (Na<sub>2</sub>O + 0.658 K<sub>2</sub>O)</b>	ASTM C114 - 18 Métodos de prueba estándar para el análisis químico del cemento hidráulico. Ítem 19.2.1.2 (Validado).



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FIELDS OF TESTING	MATERIAL/MATRIX	DETERMINANT(S)/ANALYTE(S)	METHOD REFERENCE
SOIL MECHANICS PHYSICOCHEMICAL TESTS (cont'd.)	Soils (Sampling & Analysis)	<b>Sand Equivalent</b>	ASTM D2419 - 22 Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.  NTP 339.146:2000 (2019) Standard test method for the sand equivalent value of soils and fine aggregate. 1st Edition
		<b>Classification of soils AASHTO</b>	NTP 339.135:1999 (Reviewed 2019) SOILS Method for classifying soils for use on transport road  ASTM D3282-15 Standard Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
		<b>Test Method for California Bearing Ratio (CBR)</b>	D1883-21 Standard Test Method for California Bearing Ratio (CBR) of Laboratory-Compacted Soils.
	Aggregates for concrete: Coarse aggregate	<b>Resistance to degradation (abrasion)</b>	ASTM C535-16 Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.  NTP 400.020:2020 AGGREGATES. Determination of wear resistance in coarse aggregates of large size abrasion and impact in the Los Angeles machine. Test method.
	Aggregates for concrete: Fine aggregate, Coarse aggregate	<b>Lightweight Particles in Aggregate.</b>	ASTM C123/C123M Standard Test Method for Lightweight Particles in Aggregate.  NTP 400.023:2020 AGGREGATES. Test method for determining light particles in aggregate.
		<b>Clay Lumps and Friable Particles</b>	NTP 400.015:2020 AGGREGATES. Determination of the content of clay lumps and friable particles in aggregates. Test method. 4th Edition.

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<b>SOIL MECHANICS PHYSICOCHEMICAL TESTS</b> (cont'd.)	Aggregates for concrete: Fine aggregate, Coarse aggregate (cont'd.)	<b>Clay Lumps and Friable Particles</b> (cont'd.)	ASTM C142/C142M-17(2023) Standard Test Method for Clay Lumps and Friable Particles in Aggregates
		<b>Bulk Density ("Unit Weight") and Voids in Aggregate</b>	NTP 400.017:2020 AGGREGATE. Test method for determining mass per unit volume or density ("Unit Weight") and voids in aggregates. ASTM C29/C29M-23 Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate.
	Aggregates for concrete: Fine aggregate	<b>Sand Equivalent</b>	ASTM D2419 - 22 Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.  NTP 339.146:2000 (2019) Standard test method for the sand equivalent value of soils and fine aggregate. 1st Edition
<b>PAPER – PHYSICAL MEASUREMENTS</b>	Paper and/or cardboard	<b>Grammage</b>	NTP-ISO 536:2022 Paper and Cardboard. Determination of Grammage
<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b>	Natural Water, Water for human use and consumption, Wastewater, Saline Water and Process Water (Sampling & Analysis)	Organochlorine Pesticides: Lindane, Heptachlor, Aldrin, Heptachlor-epoxide, Chlordane-Trans, Endosulfan I, Chlordane-Cis, Dieldrin, DDE-p,p, Endrin, Endosulfan II, DDD-p,p, DDT-p,p, Pentachlorophenol, Methoxychlor, Hexachlorobenzene	EPA Method 8270E, Rev 06. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). 2018.
	Natural Water, Water for human use and consumption, Wastewater, Saline Water and Process Water (Sampling & Analysis)	Total Petroleum Hydrocarbons (TPH) (C <sub>6</sub> - C <sub>10</sub> )	EPA Method 8015C Revision 3. Nonhalogenated Organics by Gas Chromatography. 2007.

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FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
<b>ENVIRONMENTAL - CHEMISTRY ORGANIC</b> (cont'd.)	Natural Water, Water for human use and consumption, Wastewater, Saline Water and Process Water (Sampling & Analysis)	POLYCLIC AROMATIC HYDROCARBONS (PAH's): Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo [a] anthracene, Chrysene, Benzo [b]fluoranthene, Benzo [k] fluoranthene, Benzo [a] pyrene, Indeno [1,2,3-cd] pyrene, Dibenzene [a,h]anthracene, Benzo [g,h,i] perylene. // Total Petroleum Hydrocarbons (Aromatic Fraction).	EPA Method 8270E, Rev 06. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). 2018.
<b>ENVIRONMENTAL - CHEMISTRY INORGANIC</b>	Polymeric materials <b><u>Plastics Analysis</u></b>	Qualitative identification of polymers by FTIR	ASTM E1252-98(2021) Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis <u>Item 7.9 by ATR determination.</u>
<b>PHYSICAL TEST CONSTRUCTION SECTOR</b>	Aggregates for concrete:	Flattening and Elongation Indices of Road Aggregates	INV E – 230 – 13 Flattening and Elongation Indices of Road Aggregates
	Coarse aggregate	Determination of the percentage of fractured faces	D5821-13(2017) Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate