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Developer and manufacturer is
Christmas+ CJSC

KNAPSACK FIELD LABORATORY FOR THE STUDY OF RESERVOIRS NKV-R AND ITS MODIFICATIONS



Knapsack field laboratory for the study of small reservoirs, small NKV-Rm, with a handbook, 18 indicators.

Knapsack field laboratory for the study of small reservoirs, small NKV-RmG with a kit for hydrobiological study, a GHS net and a handbook, 18 indicators.



Knapsack field laboratory for the study of reservoirs NKV-R with a net of hydrobiological GHS and a handbook, 23 indicators.



Knapsack field laboratory for the study of reservoirs NKV-R with a hydrobiological net, a set-laying for photocolorimetry "Ecotest-2020-K", a handbook and documentation, 23 indicators.



Purpose and scope

Knapsack field laboratory for the study of reservoirs is intended for the practical assessment of the ecological state of water bodies and soil by determining water quality indicators and the chemical composition of soil extracts, as well as hydrobiological indicators directly in the field.

Features

- allow to work in field and stationary conditions;
- maximally portable, easily portable;
- suitable for use in laboratory and off-laboratory conditions;
- economical, inexpensive to operate.

Methods and defined parameters

Hydrochemical analysis methods implemented in NKV-R and are convenient for:

- visual-colorimetric determination at the final stage instead of, or in addition to photometric;
- analytical solutions of a modified composition for simplified and accelerated dosage;
- portable means of dispensing solutions and samples.

Field laboratories for water analysis of the NKV type are original products developed and manufactured by Christmas+ CJSC.

Products are manufactured under the registered trademark "CHRISTMAS" (certificate No. 404860, No. 570418).

Composition

NKV-R is a knapsack containing sets (test kits) for chemical analysis of water, a set for hydrobiological studies of reservoirs, teaching aids "Guide to water analysis. Drinking and natural water, soil extracts", "Study of the ecological state of water bodies. Guidance on the application of NKV-R knapsack field laboratory", "Assessment of the ecological condition of the soil. Practical Guidelines", passport.

Structurally, a knapsack was designed taking into account the peculiarities of field work and expeditionary conditions: the folding front panel forms a table, which provides access to the laboratory kits located in the cells, and each set can be removed and used independently.

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IMITATIONS!**

Defined indicators and modifications of the NKV-R laboratory

Abbreviations: V – visual; VC – visual colorimetric; TK – test kit; TM – titrimetric; TS – test system; PM – photometric (with Ecotest-2020 portable photocolormeter).

Determined indicator	Method	Product description (unit)	Sample size, ml	NKV-R	NKV-R	NKV-Rm	NKV-RmG
				3.130	3.130.1	3.130.2	3.130.2.1
Hydrochemical indicators							
Ammonium (NH ₄ ⁺) (ammonium nitrogen)	VC, with Nessler's reagent PM, with Nessler's reagent (430 nm)	TK «pH, coolant, ammonium»	5	+	+	+	+
Total hardness (sum of Ca ²⁺ and Mg ²⁺)	TM, drip titration with a titrant, containing indicator and EDTA		5	–	+	–	–
Hydrogen ion exponent (pH)	VC, with universal indicator		2,5-10	+	+	+	+
Total iron (the sum of Fe ²⁺ and Fe ³⁺)	VC, with universal indicator	TS «pH»	5	+	+	+	+
	VC, with o-phenanthroline		–	+	+	+	+
	PM, with o-phenanthroline (502 nm)		10	+	+	+	+
Iron (2) (Fe ²⁺)	VC, with potassium thiocyanate	TK «Iron»	10	–	+	–	–
	VC, with aaa-dipyridine		–	+	+	+	+
	VC, with griss reagent		–	+	+	+	+
Carbonates (CO ₃ ²⁻)	TM, with hydrochloric acid, phenolphthalein and mixed indicator	TS «Common Iron»	10	+	+	+	+
Hydrocarbonates (HCO ₃ ⁻)	TM, with hydrochloric acid, phenolphthalein and mixed indicator		–	+	+	+	+
Alkalinity (OH ⁻) free, general	TM, with hydrochloric acid, phenolphthalein and mixed indicator		10	+	+	+	+
Dissolved oxygen (dissolved O ₂)	TM	TK «Carbonates, alkalinity»	10	+	+	+	+
Biochemical Oxygen Demand (BOD)	TM		10	+	+	+	+
Copper (Cu ²⁺)	VC, with sodium diethyldithiocarbamate		130	+	+	–	–
Nickel (Ni ²⁺)	VC, with dimethylglyoxime	TK «RK-BPC»	130	+	+	–	–
Nitrates (NO ₃ ⁻)	VC, with griss reagent	TS «Copper»	–	+	+	+	+
Nitrites (NO ₂ ⁻)	VC, with griss reagent	TS «Nickel»	–	+	+	+	+
	VC, with griss reagent	TK «Nitrates»	3	+	+	–	–
	VC, with griss reagent	TS «Nitrate test»	–	+	+	+	+
Sulphates (SO ₄ ²⁻)	TM, with barium chloride in the presence of orthanil K	TS «Nitrite Test»	–	+	+	+	+
Orthophosphates (total concentration of H ₂ PO ₄ ⁻ , HPO ₄ ²⁻ , PO ₄ ³⁻ и H ₃ PO ₄)	VC, with ammonium molybdate and ascorbic acid	TK «Sulphates»	2,5	+	+	+	+
	PM, with ammonium molybdate and ascorbic acid (660 nm)		10	+	+	–	–
	VC, with ammonium molybdate and ascorbic acid after acid hydrolysis		10	–	+	–	–
Polyphosphates and esters of phosphoric acid	VC, with ammonium molybdate and ascorbic acid after acid hydrolysis	TK «Phosphates»	50	+	+	–	–
	PM, with ammonium molybdate and ascorbic acid after acid hydrolysis (600 nm)		50	–	+	–	–
	VC, with potassium iodide and starch		50	+	+	+	+
Active chlorine (Cl ₂ , hypochlorides, chloramines, etc.)	VC, with potassium iodide and starch	TS «Active chlorine»	–	+	+	+	+
Chlorides (Cl ⁻)	TM, with silver nitrate	TK «Chlorides»	10	+	+	+	+
Chromats (Cr ⁶⁺)	VC, with diphenylcarbazide	TS «Chromat test»	–	+	+	+	+
Organoleptic indicators							
Turbidity	V	TK «Turbidity / transparency»	300	+	+	+	+
Transparency	V		300	+	+	+	+
Color	VC, film cobalt chrome scale		12	+	+	+	+
	VC, chrome-cobalt scale (model solutions)	TK «Color»	12	+	+	+	+
	PM, cobalt chrome scale (400 nm)		5	–	+	–	–
Smell	–	–	–	+	+	+	+
Soil and chemical indicators							
Carbonates and bicarbonates (CO ₃ ²⁻ ; HCO ₃ ⁻)	Water extract (1: 5). TM, with hydrochloric acid, phenolphthalein and mixed indicator	TK «Carbonates, alkalinity»	10 (water extract)	+	+	+	+
Hydrogen ion exponent (pH)	Salt extract (1: 2.5) (KCl 1 mol / L) VC, with universal indicator	TK «Soil Acidity»	5 (salt extract)	+	+	+	+
Sulphates (SO ₄ ²⁻)	Water extract (1: 5). TM, with chloride barium in the presence of orthanil K	TK «Sulphates»	2,5 (water extract)	+	+	+	+
Chlorides (Cl ⁻)	Water extract (1: 5). TM, with silver nitrate	TK «Chlorides»	1-250 (water extract)	+	+	+	+
Other indicators							
Moisture, wealth, acidity of the soil	By definite tables	Assessment of the ecological condition of the soil. Practical Guide		+	+	+	+
Biotic indices of Woodviss, Scott, Mayer, creek rating	By definite tables	Application guidelines of the NKV-R knapsack field laboratory. Study of the ecological state of water bodies. Set for hydrobiological study		+	+	–	+
Characteristics of the channel, habitats, coastal waters, etc.	Using categories and scores and compiling special tables and visual assessment protocols	Application guidelines of the NKV-R knapsack field laboratory. Study of the ecological state of water bodies.		+	+	+	+
Pollution of water, the state of species and the reservoir in general	According to the definitive tables of indicator properties of some species of higher aquatic vegetation	Application guidelines of the NKV-R knapsack field laboratory. Study of the ecological state of water bodies.		+	+	+	+
Temperature	0-50 °C, thermometer	–		+	+	+	+

Technical specifications

lifespan is at least 100 analyzes for each of the indicators (with the exception of turbidity and transparency – without restrictions);
 • the shelf life of the laboratory is 2 years, subject to transportation rules, conditions and shelf life of solutions and reagents;
 • overall dimensions of a large knapsack (NKV-R) is not more than 40×30×85 cm, weight is not more than 17 kg; small knapsack (NKV-Rm) not more than 40×30×55 cm, weight is

not more than 10 kg.

To replace the expired, or after the expiration date of the chemical reagents and solutions from the laboratory, a replenishment kit is supplied, based on 100 analyzes for each determined component. The replenishment kit is laid separately from the laboratory and is not included in its composition (delivered upon order). The weight of the replenishment kit: NKV-R is no more than 7 kg, NVK-Rm is no more than 5 kg.

Delivery is carried out in the manner prescribed at ordering.

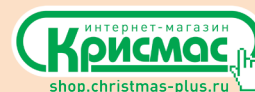
Detailed product information: https://shop.christmas-plus.ru/catalog/rantsevye_laboratorii_dlya_analiza_vody/



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The quality management system of the enterprise is certified for compliance with the requirements of the international standard ISO 9001

