

**Set of glassware for
demonstration
experiments in
chemistry**

**LABOTRIX GLASSWARE
C1**

PRODUCT PASSPORT

Kyiv

2026

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1. General Information about the Product

- 1.1. **Product name** — Chemistry Demonstration Glassware Set.
- 1.2. **Trademark** — Labotrix.
- 1.3. **Model** — Glassware C1; full trade designation — LABOTRIX GLASSWARE C1.
- 1.4. **Manufacturer** — Labotrix Group Limited, China.
- 1.5. **Intended use:** a set of laboratory glassware and equipment for conducting demonstration experiments in chemistry lessons at educational institutions. The set is used by the teacher to explain chemical phenomena, processes, and properties of substances in front of the class. The set is used when teaching both inorganic and organic chemistry: it allows students to observe key chemical reactions and phenomena and better absorb the theoretical material.
- 1.6. **Design features:** the set combines an extended range of glass laboratory ware made of chemically resistant and heat-resistant glass, metal and porcelain auxiliary equipment, an electronic scale for measuring mass, and a device for demonstrating the electrical conductivity of solutions. The set enables a wide range of demonstration experiments in inorganic and organic chemistry, as provided for by the school curriculum.
- 1.7. **Digital learning support:** together with the product, the right of access to an online teaching support course is transferred; the course is hosted in a learning management system (LMS) and is designed for 70 academic hours of lessons. The course is compiled to match the current curricula of general secondary education institutions of Ukraine. The materials are grouped into research modules in the subjects of physics, biology, chemistry, STEM, and every topic contains a lesson plan, a list of the required equipment, an experiment scenario, a step-by-step laboratory work instruction with an explanation of the expected result, a video demonstration of working techniques, interactive exercises and tasks for independent study, suitable both for individual and for group work. All modules are compiled for this very equipment and have been tested on it, therefore the course works along the direct chain "equipment → methodology → learning outcomes". A language-model-based assistant with retrieval over the course knowledge base (Retrieval-Augmented Generation) is built into the course: for the topic of the lesson it selects appropriate experiments, sets out the sequence of conducting the study in methodological terms, examines typical student errors and gives personal advice on how to get rid of them, changes the level of difficulty to match the preparation of a particular class and helps to draw up a report on the study and to organize the conclusions. The knowledge base of the assistant is localized and aligned with the Ukrainian curriculum. The license for the course and the accompanying software is valid for 12 months from the date on which access is transferred; the content, the interface and the answers of the assistant are provided exclusively in Ukrainian. Work with the course develops attention, logical and visual thinking and creative abilities, while joint research tasks foster cooperation skills: students work through the material individually or in groups, gaining learning independence and experience of interaction.

2. Technical Specifications

- Brand — Labotrix
- Model — Glassware C1
- SKU — LTX-GLASSWARE-C1
- Product type — set of dishware for demonstration chemistry experiments
- Number of items in the set (piece) — 55
- Material of the glassware — heat-resistant glass, chemically resistant glass
- Measuring cylinder with spout, volume (ml) — 100
- Tall laboratory glass beakers, volume (ml) — 50, 100
- Low glass laboratory beakers, volume (ml) — 250
- Graduated conical flasks, volume (ml) — 50, 100, 250
- Flat-bottom heat-resistant flasks, volume (ml) — 250
- Test tubes with flared and straight rims, dimensions (mm) — d16-21 × h150-200
- Bottles with stopper and cap, volume (ml) — 50
- Heat-resistant funnels, dimensions (mm) — d60, d75 × h110-130
- Cylindrical separating funnel, volume (ml) — 60
- Chemically resistant dropper bottle, volume (ml) — 30
- Watch glass, diameter (mm) — 45
- Glass stirring rods, length (mm) — 200
- Mortar with pestle, porcelain, diameter (mm) — 60
- Evaporating dish, porcelain, volume (ml) — 50
- Pasteur pipettes, volume (ml) — 3, 5
- Test tube racks, number of holes (piece) — 6, 10, 20
- Device for demonstrating conductivity — 1 pcs
- Portable electronic scales — 1 pcs
- Universal spirit burner with tripod — 1 pcs
- Safety goggles and gloves — included in the set
- Filter paper, diameter (mm) — 90
- Digital learning support — online course in a learning management system (LMS)
- Course volume (academic hour) — 70
- Course subjects — physics, biology, chemistry, STEM
- Composition of the materials — research modules, experiment scenarios, step-by-step laboratory work instructions, video demonstrations, interactive exercises and tasks
- Compatibility of the materials with the equipment — full, along the chain "equipment → methodology → learning outcomes"
- Language-model-based assistant — built into the course, with retrieval over a localized knowledge base (Retrieval-Augmented Generation)
- Validity period of the license for the course and the software (month) — 12
- Language of the course, of the interface and of the answers of the assistant — Ukrainian
- Language of marking and operating documentation — Ukrainian
- Product marking — trademark, model and a space for the inventory number
- Packaging — a foam insert securing each item in a separate compartment to prevent damage to the glass, and 2 plastic storage boxes

- Documentation supplied — product passport with warranty card and operating manual
- Storage conditions for the set — in the standard boxes in the laboratory assistant's room or chemistry classroom
- Surface care — metal and porcelain items may be wiped with a dry or slightly damp cloth
- User requirements — the chemistry teacher or laboratory assistant prepares the workplace and conducts the experiments
- Service life (year) — 5
- Warranty period (month) — 12

3. Package Contents

- Laboratory chemistry stand — 1 pcs
- Device for producing and collecting gases — 1 pcs
- Device for demonstrating conductivity — 1 pcs
- Portable electronic scales — 1 pcs
- Measuring cylinder with spout and plastic base, glass, 100 ml — 1 pcs
- Tall laboratory beaker with scale and pour spout, heat-resistant glass, 50 ml — 2 pcs
- Tall laboratory beaker with scale and pour spout, heat-resistant glass, 100 ml — 2 pcs
- Low laboratory beaker with scale and pour spout, heat-resistant glass, 250 ml — 1 pcs
- Graduated conical flask, chemically resistant glass, 50 ml — 2 pcs
- Graduated conical flask, chemically resistant glass, 100 ml — 1 pcs
- Graduated conical flask, chemically resistant glass, 250 ml — 1 pcs
- Flat-bottom heat-resistant flask, glass, 250 ml — 2 pcs
- Test tube with flared rim, glass, d16 × h150 mm — 30 pcs
- Test tube with straight rim, glass, d21 × h200 mm — 6 pcs
- Bottle with stopper and cap, glass, 50 ml — 20 pcs
- Heat-resistant funnel, glass, d60 × h110 mm — 1 pcs
- Heat-resistant funnel, glass, d75 × h130 mm — 1 pcs
- Chemically resistant dropper bottle, glass, 30 ml — 3 pcs
- Cylindrical separating funnel, chemically resistant, graduated, glass, 60 ml — 1 pcs
- Spoon, metal, 140 mm — 1 pcs
- Watch glass, d45 mm — 3 pcs
- Weighing bottle, glass, d30 mm — 2 pcs
- Stirring rod, glass, 200 mm — 10 pcs
- Mortar with pestle, porcelain, d60 mm — 1 pcs
- Spot plate with wells, porcelain — 1 pcs
- Evaporating dish, porcelain, 50 ml — 1 pcs
- Spoon, porcelain, 140 mm — 1 pcs
- Combustion spoon, metal — 1 pcs
- Pasteur pipette, polymer, 3 ml — 2 pcs
- Pasteur pipette, polymer, 5 ml — 2 pcs
- Medical tweezers, metal — 1 pcs
- Test tube holder, metal — 1 pcs
- Test tube rack, plastic, 6 holes, d22 mm — 1 pcs
- Test tube rack, plastic, 10 holes, d18 mm — 2 pcs
- Test tube rack, plastic, 20 holes, d18 mm — 1 pcs

- Connecting tube, polymer — 3 pcs
- Gas outlet tube with stopper, glass, 110 mm — 2 pcs
- Rubber stopper, 16 mm (14/20 mm) — 5 pcs
- Universal spirit burner with tripod — 1 pcs
- Solid fuel tablets, 8 pcs/pack — 2 pack
- Brass diffusion mesh — 1 pcs
- Wooden splints — 10 pcs
- Wash bottle, polypropylene, 500 ml — 1 pcs
- Brush for laboratory glassware, d13 mm — 1 pcs
- Brush for laboratory glassware, d20 mm — 1 pcs
- Safety glasses, plastic — 1 pcs
- Protective gloves, textured latex — 3 pair
- Rubberized apron — 1 pcs
- Cotton medical coat — 1 pcs
- Laboratory tray, plastic — 1 pcs
- Filter paper, d90 mm — 100 pcs/pack
- Stickers with the formulas of substances — included in the set
- Stickers with warning signs — included in the set
- Teaching guide for the teacher and the student — 1 pcs
- Foam insert — 1 pcs
- Storage box, plastic — 2 pcs
- Product Passport and Warranty Card — 1 pcs
- Right of access to the online course with a language-model-based assistant (license) — 1 pcs

The set is supplied with everything necessary for conducting demonstration experiments of the school chemistry course without additional equipment purchases. Reagents are purchased separately in accordance with the curriculum.

4. Safety Precautions

4.1. General requirements

- Before first use, read this passport and the user manual. Keep the documents together with the set.
- The set is operated by a chemistry teacher or laboratory assistant who has completed occupational safety training for working with chemical reagents and heating equipment.
- Demonstration experiments are conducted in a classroom equipped with fume hoods or a well-ventilated room, where students can observe the experiment from a safe distance.
- Check the unpacked set for mechanical damage and the integrity of the glassware. Dishware with cracks or chips must not be used.
- Keep the work area clean and orderly. Immediately remove spilled reagents and broken glass.

4.2. Working with Glass and Dishware

- All participants in the demonstrations must wear safety glasses when working with hot dishware and during heating.
- Before starting work, the dishware must be washed and dried. Wet glass is less resistant to impact and temperature changes.
- When moving dishware, carry it carefully in your hands or in special baskets, avoiding drops and mechanical damage.

- Immediately clean up broken glass while wearing protective gloves to avoid cuts.
- Carry large volumes of liquid in special baskets with handles for safety.

4.3. Work with hot substances and flame

- During demonstrations involving heating, make sure there are no flammable materials nearby and that the entire audience is at a safe distance.
- When heating dishware on a spirit burner, use tongs or special test tube holders, and never hold hot dishware with your hands.
- Carry hot dishware only on a metal tray and place it in a safe location out of reach of children.
- Extinguish the spirit burner using its cap or a special snuffer; never use water to extinguish it.
- Let hot dishware cool to room temperature before washing it with cold water.

4.4. Work with chemical reagents

- Use protective gloves when working with aggressive, corrosive substances and when working with hot solutions.
- Store reagents in their original containers with clear labeling. Never transfer them into unsuitable containers.
- If a substance contacts the skin or eyes, immediately rinse the affected area with plenty of water for several minutes.
- Do not allow students to take reagents on their own; the teacher controls all handling of chemical substances.

4.5. It is strictly prohibited

- Leaving a lit spirit burner unattended or next to flammable materials.
- Heating dishware with an airtight stopper that does not allow gases to escape during heating.
- Disassembling or modifying the equipment's design without permission from the school administration.
- Eating, drinking, or smoking in the room where chemical experiments are conducted.
- Allowing children direct contact with reagents and hot equipment.

5. Preparation for Use

- 5.1. Unpack the set and place all components on a clean, level surface protected from shocks and moisture. Check the package contents against Section 3.
- 5.2. When washing new dishware, use warm water and dishwashing detergent. Rinse well and dry each item with a soft cloth.
- 5.3. Before the demonstration, check that all devices are functioning properly, including the electronic scale and the conductivity demonstration device.
- 5.4. Prepare the necessary reagents and arrange them in a convenient order on the demonstration table; water for emergency rinsing and a first-aid kit must be nearby during the experiments.
- 5.5. Place the spirit burner on a level, fire-resistant surface; make sure there are no flammable materials nearby and that the fume hood is functioning correctly.

- 5.6. Rehearse the demonstration before the lesson to prevent possible complications and ensure the experiment runs smoothly in class.

6. Operating Procedure

6.1. General Sequence of the Demonstration Experiment

- Study the experiment description and the teaching guide in detail.
- Prepare all necessary reagents and dishware in advance and place them in a convenient location.
- Make sure that all students have a good view of the demonstration table from their seats.
- Conduct the experiment gradually, commenting on each step and drawing students' attention to the observed phenomena.

6.2. Measuring and Preparing Reagents

- Measure liquids in the measuring cylinder at eye level, using the lower edge of the meniscus for accurate measurements.
- To measure mass, use the electronic scale, which allows you to quickly and accurately determine the quantity of dry substance.
- Measure loose substances using a special spoon and spatula in the required quantity.

6.3. Heating Dishware and Substances

- Position the dishware on the stand so that the flame of the spirit burner covers the lower third of the dishware for even heating.
- Place a glass rod inside the dishware for even heat distribution and to avoid splashing.
- Let dishware cool naturally, avoiding pouring cold water over it during significant temperature changes.

6.4. Electrical Conductivity Demonstration

- Use the conductivity demonstration device to detect ions in solutions.
- Immerse the electrodes in the solution slowly and observe the indicator light when conductive ions are present.

6.5. Completing the Experiment

- Record the observations and results in the demonstration experiment log.
- Pour the remaining solutions into special disposal containers; do not pour them down the sink without permission.
- When washing dishware, use hot water and a bottle brush. If necessary, soak stubborn residue.

6.6. Work with the online course

- Obtain an account at the educational institution and activate the right of access to the course; the validity period of the license is counted from the date on which access is transferred.
- Select the topic of the lesson in the course list: every topic is accompanied by a plan, a list of equipment, an experiment scenario, a step-by-step instruction, a video demonstration and interactive tasks.

- Formulate a query to the assistant on the topic of the lesson — it will suggest appropriate experiments, set out the sequence of actions, examine typical errors and advise how to correct them.
- Set the level of difficulty of the tasks to match the preparation of the class; on the basis of the results of the work the assistant will help to draw up the report and to organize the conclusions.

7. Care, Maintenance and Troubleshooting

7.1. Cleaning

- After each experiment, wash all dishware with hot water and detergent, using a brush and a bottle brush.
- To remove stubborn residue, soak the dishware in hot water for 30–40 minutes, then clean it with a brush.
- Wipe metal parts with a dry cloth immediately after washing to prevent oxidation and rusting.
- Wipe the electronic scale only with a dry, soft cloth, without moistening it.
- Clean stoppers and lids with a soft brush and air-dry them, wiping with a lint-free cloth.

7.2. Periodic inspection

- Monthly, inspect all dishware for cracks, chips, and hairline cracks that could lead to leaks.
- Check the tightness of stoppers and lids; replace damaged ones with new ones purchased separately.
- Once a month, check the accuracy of the electronic scale by weighing an object of known mass; if there are deviations, contact the service center for calibration. Calibration weights are not included in the set.
- Check that the conductivity demonstration device is functioning properly; if it malfunctions, replace the battery with one of the appropriate size or contact an authorized service center.

7.3. Possible malfunctions and methods of their elimination

Symptom	Possible cause	User actions
The glassware becomes dull or cloudy	Mineral deposits from hard water; minor scratches on the glass	Rinse the dishware in distilled water; shallow scratches do not affect functionality
The electronic scale does not turn on	Battery discharged	Replace the battery with a new one of the appropriate size (batteries are not included in the set)
The conductivity demonstration device does not light up	Contacts oxidized; battery discharged	Wipe the contacts with a dry cloth; replace the battery
The stopper gets stuck in the glassware	Dried liquid; improper storage	Carefully warm the neck with warm water and turn the stopper; do not use force

Symptom	Possible cause	User actions
The glassware has cracked or broken	Impact, drop, thermal shock	Clean up fragments while wearing protective gloves; replace with similar dishware

8. Storage and Transportation Conditions

- Store the set in a dry closed room at a temperature not lower than +5 and not higher than +40 °C and relative humidity up to 80 % without condensation.
- Pack the dishware into the container in layers, separating each layer with foam or paper to prevent the components from damaging each other.
- Keep the set away from dust, direct sunlight, vibration and mechanical impacts.
- Store any reagents that may be included in the set in a cool, well-ventilated place, in their original containers, away from children.
- When transporting, pack the set in rigid packaging with reliable fixation of all components, preventing them from shifting inside the packaging.
- The storage period before commissioning is unlimited provided that the stated requirements are observed.

9. Warranty Obligations

- 9.1. The warranty period of operation of the product is 12 months from the date of sale specified in the warranty card.
- 9.2. The manufacturer guarantees that the product conforms to the declared technical specifications provided that the transportation, storage and operating rules set out in this passport are observed.
- 9.3. During the warranty period, defects of the product that have arisen through the fault of the manufacturer are remedied free of charge. The method of remedy (repair, replacement of a component or replacement of the product) is determined by the service center.
- 9.4. Warranty service is provided on presentation of a correctly and completely filled-in warranty card and of a document confirming the fact and the date of purchase.
- 9.5. The warranty does not cover cases where the malfunction is caused by:
 - mechanical damage, in particular cracks, chips and deformation of the housing and of the components of the product;
 - violation of the operating, storage or transportation rules set out in this passport;
 - ingress of liquid or foreign objects into the product, and also the action of insects and animals;
 - independent disassembly, repair or modification of the product, in particular repair at unauthorized workshops;
 - use of the product other than for its intended purpose;
 - force majeure circumstances (fire, flood, earthquake, etc.).

9.6. The warranty does not cover the natural wear of the coating and of the appearance of the product, nor consumables.

10. Product Disposal

- The product is not electrical or electronic equipment, therefore the marking in the form of a crossed-out container does not apply to it.
- After the end of the service life, the product is disposed of according to the rules established at the institution that operated it, with prior separation by materials.
- Hand over the packaging elements (cardboard, polymer materials) to the corresponding streams of recyclable materials.

Contacts

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Conditions of use and storage of the product

The product is intended for educational work in general secondary education institutions and is used only under the control and supervision of a teaching staff member; the recommended age of students — from 10 years, that is, students of grade 5 and of higher grades. Keep the product in a dry, clean and ventilated room at a temperature from +5 to +40 °C and relative air humidity up to 80 % without condensation, separately from heat sources and out of direct sunlight, moisture and dust. Use the product exclusively for its intended purpose and do not allow drops, impacts or other mechanical damage. If you notice damage, a crack or any malfunction, stop working with the product immediately and inform the teacher or the responsible person of the educational institution; repairing the product on your own is prohibited.

WARRANTY CARD

Name:	Set of glassware for demonstration experiments in chemistry
Product model:	LABOTRIX GLASSWARE C1
Serial number:	
Date of sale:	
Warranty period:	12 months from the date of sale
Trading organization:	
Signature of the seller:	

The goods have been received in working order, without visible damage, complete, and have been checked in my presence. I have no claims regarding the quality of the goods; I have read and agree to the operating and warranty service conditions.

Full name of the buyer _____

Telephone of the buyer _____ Signature of the buyer _____

Dear Customer!

Thank you for choosing Labotrix products. After-sales service of this product is provided in accordance with the regulations of the company and the legislation of the country of sale. So that we can serve you quickly and without unnecessary formalities, check that this warranty card is filled in correctly at the moment of purchase and keep it together with the payment document throughout the entire warranty period. When applying for repair, hand the product over to the seller or to the service center together with the filled-in card.

Procedure for applying

1. The right to free warranty service of the product is valid for 12 months from the date of sale specified in the warranty card. Within this period, components that have failed because of a manufacturing defect are repaired or replaced at no cost to the buyer.
2. Before applying, make sure that the malfunction is not caused by the reasons listed in section 9 of this passport and, if possible, use the table of possible malfunctions in subsection 7.3.
3. After the end of the 12-month warranty period, repairs are performed on a paid basis; the cost of the work and of the spare parts is determined depending on the nature of the malfunction.

Grounds for refusal of warranty service

The company reserves the right to refuse free service or to perform the work on a paid basis if at least one of the following circumstances is established:

- absence of the warranty card, its incomplete or corrected completion, and also the absence of a document confirming the purchase;
- non-conformity of the serial number of the product with the number specified in the card, or damage to the factory marking;
- traces of independent disassembly, repair or modification of the product;
- damage caused by violation of the operating rules, connection to an unsuitable power source or external mechanical impact;
- damage as a result of force majeure circumstances.

Service Records

Date of entry	Description of the malfunction	Work performed	Position, signature, full name of the responsible person