

## Chemistry Reagents

### Hepatic Panel

Alanine Aminotransferase (ALT)  
 Aspartate Aminotransferase (AST)  
 Alkaline Phosphatase (ALP)  
 γ-Glutamyl Transferase (γ-GT)  
 Direct Bilirubin (D-Bil) DSA Method  
 Direct Bilirubin (D-Bil) VOX Method  
 Total Bilirubin (T-Bil) DSA Method  
 Total Bilirubin (T-Bil) VOX Method  
 Total Protein (TP)  
 Albumin (ALB)  
 Total Bile Acids (TBA)  
 Prealbumin (PA)  
 Cholinesterase (CHE)

### Renal Panel

Urea (UREA)  
 Creatinine (CREA) Modified Jaffé Method  
 Creatinine (CREA) Sarcosine Oxidase Method  
 Uric Acid (UA)  
 Carbon Dioxide (CO<sub>2</sub>)  
 Microalbumin (MALB)  
 β<sub>2</sub>-Microglobulin (β<sub>2</sub>-MG)  
 Cystatin C (CysC)  
 Retinol Binding Protein (RBP)  
 Total Protein In Urine & CSF (TPUC)

### Cardiac Panel

Creatine Kinase (CK)  
 Creatine Kinase-MB (CK-MB)  
 Lactate Dehydrogenase (LDH)  
 α-Hydroxybutyrate Dehydrogenase (α-HBDH)  
 Full Range C-reaction Protein (FR-CRP)

### Diabetes Panel

Glucose (Glu) GOD-POD Method  
 Glucose (Glu) HK Method  
 Hemoglobin A1c (HbA1c)  
 Fructosamine (FUN)  
 β-Hydroxybutyrate (β-HB)

### Inorganic & Anemia

Iron (Fe)  
 Ferritin (FER)  
 Transferrin (TRF)  
 Calcium (Ca)  
 Magnesium (Mg)  
 Phosphate Inorganic (P)  
 Unsaturated Iron Binding Capacity (UIBC)  
 Glucose-6-phosphate Dehydrogenase (G6PD)

### Lipid Panel

Total Cholesterol (TC)  
 Triglycerides (TG)  
 HDL-Cholesterol (HDL-C)  
 LDL-Cholesterol (LDL-C)  
 Apolipoprotein A1 (ApoA1)  
 Apolipoprotein B (ApoB)  
 Lipoprotein(a) (Lp(a))

### Immune Panel

Immunoglobulin A (IgA)  
 Immunoglobulin G (IgG)  
 Immunoglobulin M (IgM)  
 Complement C3 (C3)  
 Complement C4 (C4)

### Rheumatism Panel

C-reactive Protein (CRP)  
 Rheumatoid Factor (RF)  
 Antibodies Against Streptolysin O (ASO)

### Pancreatitis Panel

α-Amylase (α-AMY)  
 Lipase (LIP)

### Lung Panel

Adenosine Deaminase (ADA)  
 Angiotensin Converting Enzyme (ACE)

## Technical Specifications

**System Function:** Automatic, discrete, random access, STAT sample priority  
**Throughput:** 420 photometric tests per hour, up to 626 tests per hour with ISE  
**On-board tests:** 90 photometric tests + 3 ISEs + 3 serum indices

**Sample Handling**  
**Sample tray:** 102 sample positions,  
**Sample volume:** 1.5μL~45μL, step by 0.1μL  
**Sample probe:** Liquid level detection, collision protection, clog detection (optional), and auto-dilution, automatic hemolysis  
 Carry-over≤0.05μL

**Reagent Handling**  
**Reagent tray:** 92 reagent positions with 24-hour refrigeration 2~8°C,  
**Reagent volume:** 10μL~200μL, step by 0.5μL  
**Reagent probe:** Liquid level detection, collision protection, bubble detection, concentrated reagent with auto-dilution

**Built-in Bar Code Reader (optional):**  
 Sample and reagent bar code readers support Codabar, ITF (Interleaved Two of Five), Code128, Code39, UPC/EAN and code93,  
 Capable to connect with LIS in Bi-directional mode

**Reaction System**  
**Cuvettes:** 93 reusable cuvettes with 8-step auto-washing  
**Reaction temperature:** 37 ± 0.1°C  
**Reaction volume:** 100~300μL  
**Mixing system:** 2 independent mixers with speed detection

**Optical System**  
**Light source:** 12V 20W tungsten-halogen lamp  
**Photometer:** Grating system  
**Wavelength:** 340nm, 380nm, 412nm, 450nm, 505nm, 546nm, 570nm, 605nm, 660nm, 700nm, 740nm, 800nm  
**Absorbance range:** 0~3.5A

**ISE Module (Optional):** K<sup>+</sup>, Na<sup>+</sup>, Cl<sup>-</sup>

**Control and Calibration:**  
**Calibration mode:** K factor, Linear (two points and multi-points), Logit-Log 4P, Logit-Log 5P, spline, exponential, polynomial, parabola, Logit-log3P, broken line Westgard multi-rule, Levey-Jennings, Cumulative sum check, Twin plot

**Operation Unit:**  
**Operation system:** Windows 10  
**Interface:** RS-232 serial port

**Working Conditions**  
**Power supply:** 220V-240V, 50/60Hz, ≤1000VA or 110V-130V, 60Hz, ≤1000VA

**Water consumption:** ≤20 L/H  
**Dimension:** 1050 mm (W) \* 720 mm (D) \* 1150 mm (H)  
**Weight:** ≤200 Kg

**Avantor Performance Materials India Private Limited.**  
 19th Floor, Building No. 5 - Tower C  
 DLF Cyber City, Phase - III, Gurgaon - 122002 Haryana  
 t +91 124 4656700 - f +91 124 4656799  
 product.info@avantorsciences.com

**Avantor Performance Materials India Private Limited.**  
 Tiffany, 5<sup>th</sup> Floor, Hiranandani Business Park  
 Thane (W), Mumbai - 400607  
 t +91-124-4656700  
 product.info@avantorsciences.com

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

P/N: ENG-BS-450-210285x6P-20191028  
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**mindray**  
 healthcare within reach

## BS-450

Clinical Chemistry Analyzer



**avantor**  
 delivered by VWR

order at  
[IN.VWR.COM](http://IN.VWR.COM)

# BS-450

Clinical Chemistry Analyzer



## Precise pipetting system

Highly polished probes are equipped with multiple technologies to ensure the accuracy and reliability. The minimum sample volume is as low as 1.5µL.



## Efficient washing system

Interior and exterior washing reduces the carry-over of sample probe to be less than 0.05%. Pre-warmed de-ionized water and detergent ensures the cleanliness of cuvettes.



## Intelligent mixing system

Stepper motors with speed monitoring optimizes the mixing effect.



## Advanced optical system

The technology-enhanced grating photometer effectively reduces the stray light and enhances the measuring accuracy of test results. The dot light source lowers the minimum reaction volume to 100µL and maximizes the cost efficiency. Prolong the service life of the lamp by auto sleep function.



## Reliable heating system

The maintenance-free direct solid heating technology stabilizes the reaction temperature at 37°C. 24-hour refrigeration maintains the temperature of reagent compartment between 2~8°C.



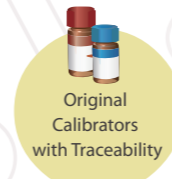
## New software platform

Inherited from Mindray high-end products, the user-friendly software integrates more practical functionalities and makes itself more easy-to-use. The step-by-step maintenance guide allows the maintenance easier and more comprehensive.



## Total solution for clinical chemistry

Dedicate to providing a total solution for clinical chemistry with traceability to ensure the ultimate accuracy of test results.



## Optimized integration of the whole system

All parameters are optimized during the integration to maximize the reliability of test results.



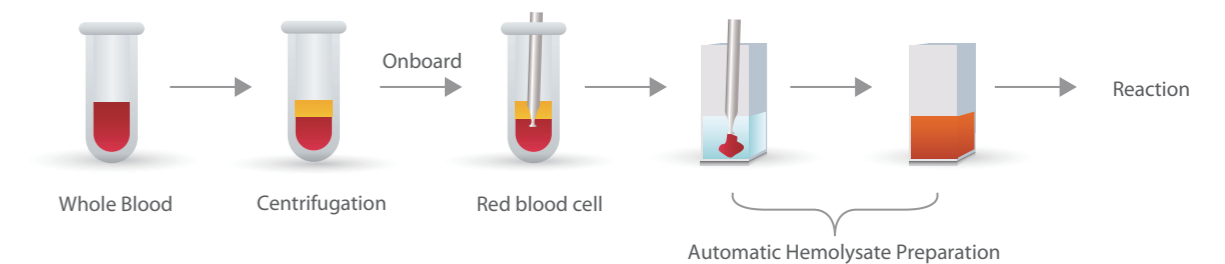
## HbA1c smart-sampling

The smart-sampling technology allows on-board hemolysis for HbA1c.



## HbA1c Smart-sampling Technology

BS-450 chemistry analyzer utilizes HbA1c smart-sampling technology, which allows onboard automatic hemolysate preparation for whole blood samples, thus achieving shorter turnaround time (TAT) and eliminating any biohazardous risks or any errors by manual operation.



Mindray HbA1c assays of enzymatic method, with application of specified protease and Fructosyl Peptide Oxidase (FPOX), has a good correlation with HPLC method. The enzymatic method is proven to have high precision, specificity and better performance to avoid interference from hemoglobin variants, and it is traceable to IFCC/NGSP reference methods.