



**Minimum amount of whole blood, serum or plasma required for hematology, serology, & clinical chemistry**

Department	Test	Minimum Sample volume (µL)	Form of Blood Sample
<b>Hematology</b>	Complete Blood Count <i>(includes WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, differential, WBC/RBC morphology &amp; platelet estimate)</i>	<b>150</b>	LTT; EDTA Blood <i>(preferred)</i> GTT; Heparin Blood <i>(Used when only a small volume of blood can be collected &amp; when hematology is combined with chemistry testing)</i>
	Mini Panel	<b>20</b>	<b>Serum only</b>
<b>Rodent Pathogen Testing</b>	Full Panel	<b>40</b>	<b>Serum only</b>
	Single Viral Test	<b>10</b>	<b>Serum only</b>
There is a <b>dead volume that needs to be added</b> to each group of analytes tested. <i>(e.g., ALB = 5 + 50 = 55µL; Complete panel + Troponin I = 172 + 52 + 50 = 274µL)</i>			
<b>Clinical Chemistry</b>	<b>Dead volume (required)</b>	<b>50</b>	
<b>Complete panel</b>	<i>Alb, TP, AlkPhos, ALT, AST, GGT, GLU, BUN, Creat, Ca, Phos, Bilirubin, Lytes, CO2</i>	<b>172</b>	<b>Serum, Plasma</b>
<b>Liver Panel</b>	<i>AST, ALT, Alk Phos, GGT, Bilirubin</i>	<b>112</b>	<b>Serum, Plasma</b>
<b>Lipid Panel</b>	<i>Chol, Trig, HDL, LDL</i>	<b>14</b>	<b>Serum, Plasma</b>
<b>Metabolic Panel</b>	<i>Glu, BUN, Creat, Lytes, CO2</i>	<b>61</b>	<b>Serum, Plasma</b>
<b>Electrolyte Panel</b>	<i>Na, K, Cl, CO2</i>	<b>45</b>	<b>Serum, Plasma</b>
<b>Individual Tests:</b>	AST	<b>35</b>	<b>Serum, Plasma</b>
	Albumin	<b>5</b>	<b>Serum, Plasma</b>
	Alkaline Phosphatase	<b>7</b>	<b>Serum, Plasma</b>
	Amylase	<b>14</b>	<b>Serum, Plasma</b>
	ALT	<b>40</b>	<b>Serum, Plasma</b>
	Bilirubin - Total	<b>28</b>	<b>Serum, Plasma</b>
	Bilirubin - Direct	<b>31</b>	<b>Serum, Plasma</b>
	BUN	<b>3</b>	<b>Serum, Plasma</b>
	Calcium	<b>5</b>	<b>Serum, Plasma</b>
	Chlorine <i>(includes Na &amp; K)</i>	<b>30</b>	<b>Serum, Plasma</b>
	Cholesterol	<b>3</b>	<b>Serum, Plasma</b>
	CO <sub>2</sub> Enzymatic	<b>5</b>	<b>Serum, Plasma</b>
	CK - Total	<b>14</b>	<b>Serum, Plasma</b>
	Creatinine	<b>20</b>	<b>Serum, Plasma</b>
	CRP (C-Reactive Protein)	<b>12</b>	<b>Serum, Plasma</b>
	GGT	<b>32</b>	<b>Serum, Plasma</b>
	Globulin	<b>20</b>	<b>Serum, Plasma</b>
	Glucose	<b>3</b>	<b>Serum, Plasma</b>
	HDL	<b>3</b>	<b>Serum, Plasma</b>
	Lactate Dehydrogenase	<b>14</b>	<b>Serum, Plasma</b>
	Lipase	<b>4</b>	<b>Serum, Plasma</b>
	LDL	<b>3</b>	<b>Serum, Plasma</b>
	Magnesium	<b>4</b>	<b>Serum, Plasma</b>
Phosphorus	<b>3</b>	<b>Serum, Plasma</b>	
Protein, Total	<b>15</b>	<b>Serum, Plasma</b>	
Potassium <i>(includes Na &amp; Cl)</i>	<b>30</b>	<b>Serum, Plasma</b>	
Sodium <i>(includes K &amp; Cl)</i>	<b>30</b>	<b>Serum, Plasma</b>	
Triglycerides	<b>5</b>	<b>Serum, Plasma</b>	
Troponin I	<b>52</b>	<b>Serum, Plasma</b>	
Uric Acid	<b>5</b>	<b>Serum, Plasma</b>	

<b>Hematology only</b>	<b>EDTA;LTT</b>	Collect whole blood into a <b>EDTA</b> > <b>Do not</b> centrifuge.
<b>Chemistry</b>	<b>Serum; RTT or Eppendorf</b>	Collect blood into a <b>plain tube or RTT (no anti-coagulants)</b> & deliver to Diagnostic Lab as soon as possible. If there is a delay; centrifuge 30 min after collection to obtain separated serum.
	<b>Heparinized Plasma</b>	Collect blood into a <b>HEPARIN TUBE</b> & deliver to Diagnostic Lab as soon as possible. If there is a delay, > centrifuge 30 min after collection to obtain <b>Plasma</b> .
<b>Hematology &amp; Chemistry</b>	<b>GTT;Heparin Blood</b> <i>(Used when only a small volume of blood can be collected &amp; when hematology is combined with chemistry testing)</i>	Collect blood into a <b>HEPARIN TUBE</b> > <b>Do not</b> centrifuge. Turn into the Diagnostic Lab ASAP.

**All Samples!**

**Multiply** the amount of serum/plasma by **2.5** to obtain the amount of whole blood required.  
**Thoroughly mix** all blood in their collection tubes (regardless of the presence anti-coagulants).