

Common Toxicology Laboratory Values

	Normal or therapeutic level		Toxic or action level*	
	Conventional units	SI units	Conventional units	SI units
Acetaminophen	10-30 µg/mL	66-199 µmol/L	>150 µg/mL	>993 µmol/L
Arsenic (blood)	<5 µg/L	<0.665 µmol/L		
Arsenic (urine)	< 50 µg/day	<6.65 µmol/day	>100 µg/day	>13.3 µmol/day
Caffeine	1-10 µg/mL	5.2-51 µmol/L	>25 µg/mL	>129 µmol/L
Carbamazepine	4-12 mg/L	17-51 µmol/L	>12 mg/L	>51 µmol/L
Carboxyhemoglobin	1-2%		>10%	
Cyanide	<1 µg/mL	<38.5 µmol/L		
Digoxin	0.8-2.0 ng/mL	1.1-2.6 nmol/L	>2.0 ng/L	>2.6 nmol/L
Ethanol	0 mg/dL	0 mmol/L	>100 mg/dL	>22 mmol/L
Ethylene glycol	0 mg/dL	0 mmol/L	>25 mg/dL	>4.0 mmol/L
Ethosuximide	40-100 mg/L	283-708 µmol/L		
Iron	80-180 µg/dL	14-32 µmol/L	>500 µg/dL	>90 µmol/L
Lead	<10 µg/dL	<0.48 µmol/L	> 25 µg/dL	>1.21 µmol/L
Lidocaine	1.5-5.0 µg/mL	6.4-21.4 µmol/L	>5.0 µg/mL	>21.4 µmol/L
Lithium	0.6-1.2 mEq/L	0.6-1.2 mEq/L	>2.0 mEq/L	>2.0 mEq/L
Mercury (blood)	<10 µg/L	<50 nmol/L	>35 µg/L	>175 nmol/L
Mercury (urine)	<20 µg/L	<100 nmol/L	>150 µg/L	>750 nmol/L
Methanol	0 mg/dL	0 mmol/L	>25 mg/dL	>7.8 mmol/L
Methemoglobin	<1%		>15-20%	
Phenobarbital	15-40 mg/L	65-172 µmol/L		
Phenytoin	10-20 mg/L	40-79 µmol/L		
Procainamide	4-10 µg/mL	17-42 µmol/L	>10 µg/mL	>42 µmol/L
Quinine	8-15 µg/mL	24.7-46.0 µmol/L	>15 µg/mL	>46.2 µmol/L
Salicylates	15-30 mg/dL	1.1-2.2 mmol/L	>100 mg/dL	>7.2 mmol/L
Thallium (blood)	<2.0 µg/L	<9.78 nmol/L	>100 µg/L	>0.490 µmol/L
Thallium (urine)	<5.0 µg/L	<24.5 nmol/L	>200 µg/L	>0.980 µmol/L
Theophylline	5-15 µg/mL	27.8-83 µmol/L	>20 µmol/L	>111 µmol/L
Valproic acid	50-120 mg/L	347-833 µmol/L		
Vitamin A	30-70 µg/dL 60-275 IU/dL	1.05-2.08 µmol/L		

Fact
6.6i

Normal Ammonia = 10-40 µmol/L

* = Values greater than or equal to the action level necessitate clinical intervention. Values less than this level may necessitate intervention based on the clinical condition of the patient.

Common Standard Lab Values

	Conventional Unit	SI Unit
Bicarbonate	18-24 mEq/L	18-24 mmol/L
BUN	7-18 mg/dL	2.5-6.4 mmol/L
Calcium	8.4-10.2 mg/dL	2.10-2.55 mmol/L
Chloride	98-106 mEq/L	98-106 mmol/L
Creatinine	0.6-1.2 mg/dL	0.053-0.106 mmol/L
Glucose	60-110 mg/dL	3.3-6.1 mmol/L
Lactate	<2 mEq/L	<2 mmol/L
Magnesium	1.3-2.1 mEq/L	0.65-1.05 mmol/L
Pco ₂ (arterial)	35-45 mm Hg	4.7-6.0 kPa
Pco ₂ (venous)	45-55 mm Hg	6.0-7.33 kPa
pH (arterial)	7.35-7.45	7.35-7.45
pH (venous)	7.33-7.40	7.33-7.40
PO ₂ (arterial)	90-100 mm Hg	12-13.3 kPa
Po ₁ (venous)	30-50 mm Hg	4.0-6.67 kPa
Potassium	3.5-5.0 mEq/L	3.5-5.0 mmol/L
Sodium	135-145 mEq/L	135-145 mmol/L
Others:		
AST (SGOT)	<35 IU/L	
ALT (SGPT)	<35 IU/L	
Anion Gap-	10-14 mEq/L	10-14 mmol/L
(Na + K) - (Cl + HCO ₃)		
Osmolality- (Calculated)	289-308 mOsm/kg	
2(Na)+Glucose/18 +BUN/2.8		

Reference: Goldfrank LR, Howland MA, Fomenbaum NE, Hoffman RS, Goldfrank's Toxicologic Emergencies. New York: The McGraw-Hill Con

Anion Gap 8-16

$Na - (Cl + HCO_2)$

$Na + \frac{BUN}{2.8} + \frac{Glucose}{18}$