



Effective Date:
Monday, July 28, 2014

Test Updates

Immediate Action

In our continuing effort to provide you with the highest quality toxicology laboratory services available, we have compiled important changes regarding a number of tests we perform. Listed below are the types of changes that may be included in this notification, effective Monday, July 28, 2014

Test Changes - Tests that have had changes to the method/ CPT code, units of measurement, scope of analysis, reference comments, or specimen requirements.

Discontinued Tests - Tests being discontinued with alternate testing suggestions.

Please use this information to update your computer systems/records. These changes are important to ensure standardization of our mutual laboratory databases.

If you have any questions about the information contained in this notification, please call our Client Support Department at (866) 522-2206. Thank you for your continued support of NMS Labs and your assistance in implementing these changes.

The CPT Codes provided in this document are based on AMA guidelines and are for informational purposes only. NMS Labs does not assume responsibility for billing errors due to reliance on the CPT Codes listed in this document.



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Test Updates

Test Code	Test Name	Test Name	Method / CPT Code	Specimen Req.	Stability	Scope	Units	Reference Comments	Discontinue
6108B	Cadmium Exposure Profile (OSHA), Blood			•	•			•	
6108U	Cadmium Exposure Profile (OSHA), Urine			•	•			•	
0921UH	Cadmium, 24 Hour Urine			•	•			•	
0921B	Cadmium, Blood			•	•			•	
0921R	Cadmium, RBCs				•				
0921SP	Cadmium, Serum/Plasma			•					
0921U	Cadmium, Urine				•			•	
1006B	Carbon Monoxide - Iron Ratio Profile, Blood		•						
1006TI	Carbon Monoxide - Iron Ratio Profile, Tissue		•						
1042U	Cesium, Urine							•	
1273B	Chromium - Total, Blood (CSA)			•	•				
1273SP	Chromium - Total, Serum/Plasma (CSA)			•					
1273U	Chromium - Total, Urine (CSA)			•	•			•	
1265B	Chromium and Cobalt, Blood		•	•	•				
1265SP	Chromium and Cobalt, Serum/Plasma		•	•					
1265U	Chromium and Cobalt, Urine		•	•					
1261B	Chromium, Blood			•	•				
1261R	Chromium, RBCs			•	•			•	
1261SP	Chromium, Serum/Plasma			•					
1261U	Chromium, Urine			•	•				
1290UH	Cobalt, 24 Hour Urine			•	•				
1290B	Cobalt, Blood			•	•				
1290R	Cobalt, RBCs			•	•			•	
1290SP	Cobalt, Serum/Plasma			•					
1290U	Cobalt, Urine			•	•				
1330U	Copper, Urine			•	•				
1781SP	Diquat, Serum/Plasma								•
1781U	Diquat, Urine								•
8103B	Environmental Exposure Screen, Blood (Forensic)			•					
6303U	Firefighter Core Baseline Profile, Urine			•				•	
2150B	Gallium, Blood			•	•			•	
2150R	Gallium, RBCs				•				



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Test Code	Test Name	Test Name	Method / CPT Code	Specimen Req.	Stability	Scope	Units	Reference Comments	Discontinue
2150SP	Gallium, Serum/Plasma			•					
2150U	Gallium, Urine			•	•				
6210LI	General Unknown Panel, Liquid					•			
6210SL	General Unknown Panel, Solid					•			
2241U	Heavy Metals Panel 5A, Urine (CSA)			•	•				
2231B	ICP/MS Panel, Blood (Forensic)								•
2231H	ICP/MS Panel, Hair (Forensic)								•
2231SP	ICP/MS Panel, Serum/Plasma (Forensic)								•
2231TI	ICP/MS Panel, Tissue (Forensic)								•
2231U	ICP/MS Panel, Urine (Forensic)								•
6364R	Inorganic Panel 64, RBCs		•	•		•			
2492SP	Lead, Serum/Plasma							•	
2570B	Manganese, Blood			•	•			•	
2570R	Manganese, RBCs			•	•			•	
2570U	Manganese, Urine				•			•	
2697B	Metals Acute Poisoning Panel, Blood (CSA)			•		•		•	
6153R	Metals Panel 1, RBCs			•	•			•	
2664UH	Metals Panel 4 (Arsenic, Cadmium, Lead, Mercury), 24 Hour Urine				•			•	
2664U	Metals Panel 4 (Arsenic, Cadmium, Lead, Mercury), Urine							•	
2693B	Metals/Metalloids Acute Poisoning Panel, Blood			•					
2693R	Metals/Metalloids Acute Poisoning Panel, RBCs			•				•	
2693SP	Metals/Metalloids Acute Poisoning Panel, Serum/Plasma							•	
3782LI	Metals/Metalloids Panel (General Unknown), Liquid					•			
3782SL	Metals/Metalloids Panel (General Unknown), Solid					•			
2661SP	Metals/Metalloids Panel 1, Serum/Plasma							•	
2662B	Metals/Metalloids Panel 2, Blood		•	•	•			•	
2662SP	Metals/Metalloids Panel 2, Serum/Plasma		•						
2662U	Metals/Metalloids Panel 2, Urine		•		•			•	
2663B	Metals/Metalloids Panel 3, Blood			•		•		•	
2663SP	Metals/Metalloids Panel 3, Serum/Plasma		•					•	



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Test Code	Test Name	Test Name	Method / CPT Code	Specimen Req.	Stability	Scope	Units	Reference Comments	Discontinue
2663U	Metals/Metalloids Panel 3, Urine			•	•			•	
6311B	Metals/Metalloids Panel, Blood (CSA)			•				•	
2240U	Metals/Metalloids Panel, Urine (CSA)			•	•			•	
3069R	Mineral Profile (7), RBCs		•	•	•	•		•	
3066B	Mineral Profile, Blood		•	•	•	•			
3066R	Mineral Profile, RBCs		•	•	•	•		•	
3066SP	Mineral Profile, Serum/Plasma		•						
3090B	Molybdenum, Blood			•	•				
3090R	Molybdenum, RBCs			•	•			•	
3090SP	Molybdenum, Serum/Plasma			•					
3090U	Molybdenum, Urine			•	•			•	
3140B	Nickel, Blood			•	•				
3140R	Nickel, RBCs				•				
3140U	Nickel, Urine			•				•	
3340SP	Paraquat, Serum/Plasma								•
3340U	Paraquat, Urine								•
4124B	Rubidium, Blood		•	•	•			•	
4124R	Rubidium, RBCs		•	•	•				
4124SP	Rubidium, Serum/Plasma			•					
4124U	Rubidium, Urine		•		•				
4180B	Selenium, Blood			•	•				
4180R	Selenium, RBCs			•	•			•	
4180SP	Selenium, Serum/Plasma			•					
6317U	Semi Conductor Panel, Urine		•	•		•		•	
4478SP	Thorium, Serum/Plasma							•	
4765B	Vanadium, Blood		•	•	•				
4765R	Vanadium, RBCs		•		•				
4765SP	Vanadium, Serum/Plasma			•					
4765U	Vanadium, Urine		•		•			•	



Test Updates

Test Changes

6108B Cadmium Exposure Profile (OSHA), Blood

Summary of Changes: Specimen Requirements were changed.
Stability was changed.
Reference Comment was changed.

Specimen Requirements: 2 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Please submit samples using the NMS Labs OSHA Cadmium Exposure kit.
 Collect sample at end of shift into the provided container labeled: Blood Collection Container - Cadmium.
 Clotted Blood specimens are not acceptable.
 Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin).
 Royal Blue top tube (Trace metal-free; Sodium Heparin). Green top tube (Sodium Heparin).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 3 month(s)
 Frozen (-70 °C): 6 month(s)
 Scope of Analysis: ICP/MS (82300, None): Cadmium
 Method (CPT Code)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally: Less than 3 mcg/L. May be elevated in smokers. Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides. Please contact NMS Labs if you need assistance in supplying your state with the required information.

6108U Cadmium Exposure Profile (OSHA), Urine

Summary of Changes: Specimen Requirements were changed.
Stability was changed.
Reference Comment was changed.



Test Updates

Test Changes

Specimen Requirements: 3 mL Urine
 Transport Temperature: Refrigerated
 Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)
 Light Protection: Not Required
 Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Nitric Acid (0.1 mL of 16M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
 Rejection Criteria: Received Room Temperature.
 Stability: Room Temperature: 5 day(s)
 Refrigerated: 14 day(s)
 Frozen (-20 °C): 30 day(s)
 Scope of Analysis: Colorimetry (82570): Creatinine
 Method (CPT Code) ICP/MS (82300, None): Cadmium, Cadmium (Creatinine corrected)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corrected)	mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information

0921UH Cadmium, 24 Hour Urine

Summary of Changes: Specimen Requirements were changed.
 Stability was changed.
 Reference Comment was changed.

Specimen Requirements: 2 mL 24 Hour Urine
 Transport Temperature: Refrigerated
 Specimen Container: Plastic container (Acid washed or Trace metal-free)
 Light Protection: Not Required
 Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
 Rejection Criteria: None
 Stability: Room Temperature: 7 day(s)
 Refrigerated: 14 day(s)
 Frozen (-20 °C): 3 month(s)
 Scope of Analysis: ICP/MS (82300, None): Urine Volume, Cadmium, Cadmium (Urine Volume corrected)
 Method (CPT Code)



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Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers

0921B Cadmium, Blood

Summary of Changes: Specimen Requirements were changed.
Stability was changed.
Reference Comment was changed.

Specimen Requirements: 2 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Green top tube (Sodium Heparin).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 3 month(s)
 Frozen (-70 °C): 6 month(s)
 Scope of Analysis: ICP/MS (82300, None): Cadmium
 Method (CPT Code)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally: Less than 5 mcg/L. May be elevated in smokers.

Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides. Please contact NMS Labs if you need assistance in supplying your state with the required information.

0921R Cadmium, RBCs

Summary of Changes: Stability was changed.

Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): Not Stable

0921SP Cadmium, Serum/Plasma



Test Updates

Test Changes

Summary of Changes: Specimen Requirements were changed.

- Specimen Requirements: 2 mL Serum or Plasma
- Transport Temperature: Refrigerated
- Specimen Container: Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)
- Light Protection: Not Required
- Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
- Rejection Criteria: Polymer gel separation tube (SST or PST).

0921U Cadmium, Urine

Summary of Changes: Stability was changed.
Reference Comment was changed.

Stability: Room Temperature: 5 day(s)
Refrigerated: 14 day(s)
Frozen (-20 °C): 30 day(s)

Scope of Analysis: Colorimetry (82570): Creatinine
Method (CPT Code) ICP/MS (82300, None): Cadmium, Cadmium (Creatinine corrected)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corrected)	mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information

1006B Carbon Monoxide - Iron Ratio Profile, Blood

Summary of Changes: Methods/CPT Codes were changed [ICP/OES (82375, 83540)]

Scope of Analysis: GC/MS (82375): Carbon Monoxide
Method (CPT Code) ICP/OES (82375, 83540): Iron, Carboxyhemoglobin

1006TI Carbon Monoxide - Iron Ratio Profile, Tissue

Summary of Changes: Methods/CPT Codes were changed [ICP/OES (82375, 83540, 80103)]

Scope of Analysis: GC/MS (82375, 80103): Carbon Monoxide
Method (CPT Code) ICP/OES (82375, 83540, 80103): Iron, Carboxyhemoglobin

1042U Cesium, Urine

Summary of Changes: Reference Comment was changed.



Test Updates

Test Changes

Scope of Analysis: ICP/MS (83018): Cesium
Method (CPT Code)

Compound Name	Units	Reference Comment
Cesium	mcg/L	Normally: Less than 12 mcg/L.

1273B Chromium - Total, Blood (CSA)

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.

Specimen Requirements: 2 mL Blood
Transport Temperature: Refrigerated
Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
Light Protection: Not Required
Special Handling: Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
Stability: Room Temperature: 30 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 3 month(s)
Frozen (-70 °C): 6 month(s)

1273SP Chromium - Total, Serum/Plasma (CSA)

Summary of Changes: Specimen Requirements were changed.

Specimen Requirements: 2 mL Serum or Plasma
Transport Temperature: Refrigerated
Specimen Container: Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)
Light Protection: Not Required
Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
Rejection Criteria: Gray top tube (Sodium Fluoride / Potassium Oxalate). Lavender top tube (EDTA). Polymer gel separation tube (SST or PST). Green top tube (Sodium Heparin).

1273U Chromium - Total, Urine (CSA)

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Reference Comment was changed.



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Test Changes

Specimen Requirements: 3 mL Urine
 Transport Temperature: Refrigerated
 Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)
 Light Protection: Not Required
 Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
 Rejection Criteria: Received Room Temperature.
 Stability: Room Temperature: 5 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 30 day(s)
 Scope of Analysis: Colorimetry (82570): Creatinine
 Method (CPT Code) ICP/MS (82495): Chromium - Total, Chromium - Total (Creatinine corrected)

Compound Name	Units	Reference Comment
Chromium - Total (Creatinine corrected)	mcg/g Creat	Normal urine values are less than 1.0 mcg/g Creatinine. The measurement of total chromium includes all forms of chromium, including hexavalent and trivalent chromium. However, this assay does not differentiate the individual forms that comprise the total chromium measurement.

1265B Chromium and Cobalt, Blood

Summary of Changes: Specimen Requirements were changed.
 Specimen Requirements (Rejection Criteria) were changed.
 Stability was changed.
 Methods/CPT Codes were changed [ICP/MS (82495, 83018)]

Specimen Requirements: 2 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Clotted Blood specimens are not acceptable. To reduce specimen contamination, powder-free gloves are recommended during collection. Blood should be drawn through an indwelling plastic intracath needle into a trace metal free evacuated tube



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(e.g. B/D Royal blue top Vacutainer®) containing EDTA as a preservative. If using a steel needle, contamination may be reduced by discarding the first tube.

Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.

Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).

Stability: Room Temperature: 30 day(s)

Refrigerated: 30 day(s)

Frozen (-20 °C): 3 month(s)

Frozen (-70 °C): 6 month(s)

Scope of Analysis: ICP/MS (82495, 83018): Chromium, Cobalt
Method (CPT Code)

1265SP Chromium and Cobalt, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.
Methods/CPT Codes were changed [ICP/MS (82495, 83018)]

Specimen Requirements: 2 mL Serum or Plasma

Transport Temperature: Refrigerated

Specimen Container: Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)

Light Protection: Not Required

Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.

Rejection Criteria: Gray top tube (Sodium Fluoride / Potassium Oxalate). Lavender top tube (EDTA). Polymer gel separation tube (SST or PST). Green top tube (Sodium Heparin).

Scope of Analysis: ICP/MS (82495, 83018): Chromium, Cobalt
Method (CPT Code)

1265U Chromium and Cobalt, Urine

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Methods/CPT Codes were changed [ICP/MS (82495, 83018)]

Specimen Requirements: 2 mL Urine

Transport Temperature: Refrigerated

Specimen Container: Plastic container (Acid washed or Trace metal-free)

Light Protection: Not Required

Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.

Rejection Criteria: None



Test Updates

Test Changes

Scope of Analysis: ICP/MS (82495, 83018): Chromium, Cobalt
Method (CPT Code)

1261B Chromium, Blood

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.

Specimen Requirements: 2 mL Blood
Transport Temperature: Refrigerated
Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
Light Protection: Not Required
Special Handling: Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
Stability: Room Temperature: 30 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 3 month(s)
Frozen (-70 °C): 6 month(s)

1261R Chromium, RBCs

Summary of Changes: Specimen Requirements (Specimen Container) were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Reference Comment was changed.

Specimen Requirements: 1 mL RBCs
Transport Temperature: Refrigerated
Specimen Container: Green top tube (Sodium Heparin), Light Green top tube (Lithium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
Light Protection: Not Required
Special Handling: Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
Rejection Criteria: Received Frozen. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
Stability: Room Temperature: 30 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): Not Stable
Scope of Analysis: ICP/MS (82495): Chromium
Method (CPT Code)



Test Updates

Test Changes

Compound Name	Units	Reference Comment
Chromium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 3.1 mcg/L (n=3019). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.

1261SP Chromium, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.

- Specimen Requirements: 2 mL Serum or Plasma
- Transport Temperature: Refrigerated
- Specimen Container: Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)
- Light Protection: Not Required
- Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
- Rejection Criteria: Gray top tube (Sodium Fluoride / Potassium Oxalate). Lavender top tube (EDTA). Polymer gel separation tube (SST or PST). Green top tube (Sodium Heparin).

1261U Chromium, Urine

Summary of Changes: Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.

- Specimen Requirements: 4 mL Urine
- Transport Temperature: Refrigerated
- Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)
- Light Protection: Not Required
- Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
- Rejection Criteria: Received Room Temperature.
- Stability: Room Temperature: 5 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 30 day(s)

1290UH Cobalt, 24 Hour Urine



Test Updates

Test Changes

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Specimen Container) were changed.
Stability was changed.

Specimen Requirements: 2 mL 24 Hour Urine
Transport Temperature: Refrigerated
Specimen Container: Plastic container (Acid washed or Trace metal-free)
Light Protection: Not Required
Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
Rejection Criteria: None
Stability: Room Temperature: 30 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 3 month(s)

1290B Cobalt, Blood

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.

Specimen Requirements: 2 mL Blood
Transport Temperature: Refrigerated
Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
Light Protection: Not Required
Special Handling: Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
Stability: Room Temperature: 30 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 3 month(s)
Frozen (-70 °C): 6 month(s)

1290R Cobalt, RBCs

Summary of Changes: Specimen Requirements (Specimen Container) were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Reference Comment was changed.



Test Updates

Test Changes

Specimen Requirements: 1 mL RBCs
 Transport Temperature: Refrigerated
 Specimen Container: Green top tube (Sodium Heparin), Light Green top tube (Lithium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
 Rejection Criteria: Received Frozen. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): Not Stable
 Scope of Analysis: ICP/MS (83018): Cobalt
 Method (CPT Code)

Compound Name	Units	Reference Comment
Cobalt	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 1.5 mcg/L (n=912). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.

1290SP Cobalt, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.

Specimen Requirements: 2 mL Serum or Plasma
 Transport Temperature: Refrigerated
 Specimen Container: Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)
 Light Protection: Not Required
 Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
 Rejection Criteria: Polymer gel separation tube (SST or PST).

1290U Cobalt, Urine

Summary of Changes: Specimen Requirements were changed.
Stability was changed.



Test Updates

Test Changes

Specimen Requirements: 2 mL Urine
Transport Temperature: Refrigerated
Specimen Container: Plastic container (Acid washed or Trace metal-free)
Light Protection: Not Required
Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
Rejection Criteria: None
Stability: Room Temperature: 30 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 3 month(s)

1330U Copper, Urine

Summary of Changes: Specimen Requirements were changed.
Stability was changed.

Specimen Requirements: 2 mL Urine
Transport Temperature: Refrigerated
Specimen Container: Plastic container (Acid washed or Trace metal-free)
Light Protection: Not Required
Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
Rejection Criteria: None
Stability: Room Temperature: 7 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 3 month(s)

8103B Environmental Exposure Screen, Blood (Forensic)

Summary of Changes: Specimen Requirements (Rejection Criteria) were changed.

Specimen Requirements: 10 mL Blood
Transport Temperature: Refrigerated
Specimen Container: Gray top tube (Sodium Fluoride / Potassium Oxalate) AND Royal Blue top tube (Trace metal-free; EDTA)
Light Protection: Not Required
Special Handling: Clotted Blood specimens are not acceptable.
Avoid seafood consumption for 48 hours prior to sample collection. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable. Studies have shown that cyanide has variable instability in biological specimens and is particularly unstable in some postmortem



Test Updates

Test Changes

specimens. The loss of cyanide can be minimized by shipping the sample to the laboratory for analysis as soon as possible, preferably using refrigerated or frozen transportation and preservation using sodium fluoride / potassium oxalate (grey-top tube). Samples should not be refrozen if previously thawed. The potential for increases in cyanide concentrations, although rare, have also been demonstrated and may be due to microbial action. Preservation with sodium fluoride may reduce this possibility.

Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).

6303U Firefighter Core Baseline Profile, Urine

Summary of Changes: Specimen Requirements were changed.
Reference Comment was changed.

Specimen Requirements: 5 mL Urine

Transport Temperature: Refrigerated

Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)

Light Protection: Not Required

Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.

Rejection Criteria: Received Room Temperature.

Scope of Analysis: Colorimetry (82570): Creatinine

Method (CPT Code) ICP/MS (82300, None): Cadmium, Cadmium (Creatinine corrected)

ICP/MS (83018): Antimony, Antimony (Creatinine corrected)

ICP/MS (83825): Mercury, Mercury (Creatinine corrected)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corrected)	mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information

2150B Gallium, Blood

Summary of Changes: Specimen Requirements were changed.
Stability was changed.
Reference Comment was changed.



Test Updates

Test Changes

Specimen Requirements: 2 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Clotted Blood specimens are not acceptable.
 Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Green top tube (Sodium Heparin).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 3 month(s)
 Frozen (-70 °C): 6 month(s)
 Scope of Analysis: ICP/MS (83018, None): Gallium
 Method (CPT Code)

Compound Name	Units	Reference Comment
Gallium	mcg/L	Normally: Less than 1.0 mcg/L.

2150R Gallium, RBCs

Summary of Changes: Stability was changed.

Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): Not Stable

2150SP Gallium, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.

Specimen Requirements: 2 mL Serum or Plasma
 Transport Temperature: Refrigerated
 Specimen Container: Plasma: Royal Blue top tube, plastic (Trace metal-free; EDTA), Serum: Royal Blue top tube, plastic (Trace metal-free; No additive)
 Light Protection: Not Required
 Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
 Rejection Criteria: Glass container. Polymer gel separation tube (SST or PST).

2150U Gallium, Urine

Summary of Changes: Specimen Requirements were changed.
 Stability was changed.



Test Updates

Test Changes

Specimen Requirements: 2 mL Urine
Transport Temperature: Refrigerated
Specimen Container: Plastic container (Acid washed or Trace metal-free)
Light Protection: Not Required
Special Handling: Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
Rejection Criteria: None
Stability: Room Temperature: 30 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 3 month(s)

6210LI General Unknown Panel, Liquid

Summary of Changes: Scope of Analysis was changed.
Silicon and Sodium were removed.

Scope of Analysis:
Method (CPT Code)

6210SL General Unknown Panel, Solid

Summary of Changes: Scope of Analysis was changed.
Silicon and Sodium were removed.

Scope of Analysis:
Method (CPT Code)

2241U Heavy Metals Panel 5A, Urine (CSA)

Summary of Changes: Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.

Specimen Requirements: 6 mL Urine
Transport Temperature: Refrigerated
Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)
Light Protection: Not Required
Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection. Avoid seafood consumption for 48 hours prior to sample collection.
Rejection Criteria: Received Room Temperature.
Stability: Room Temperature: 5 day(s)
Refrigerated: 14 day(s)
Frozen (-20 °C): 14 day(s)

6364R Inorganic Panel 64, RBCs



Effective Date:
Monday, July 28, 2014

Test Updates

Test Changes

Summary of Changes: Specimen Requirements were changed.
Scope of Analysis was changed.
Order of Reporting was changed.
Methods/CPT Codes were changed [ICP/MS (82300, 83885)]

Specimen Requirements: 5 mL RBCs
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Avoid seafood consumption for 48 hours prior to sample collection. Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
 Rejection Criteria: Received Frozen.
 Scope of Analysis: ICP/MS (83655): Lead
 Method (CPT Code) ICP/MS (82175): Arsenic
 ICP/MS (82108): Aluminum
 ICP/MS (82300, 83885): Cadmium, Nickel
 ICP/MS (83825): Mercury

2492SP Lead, Serum/Plasma

Summary of Changes: Reference Comment was changed.

Scope of Analysis: ICP/MS (83655): Lead
 Method (CPT Code)

Compound Name	Units	Reference Comment
Lead	mcg/dL	Normally less than 0.5 mcg/dL.

2570B Manganese, Blood

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Reference Comment was changed.



Test Updates

Test Changes

Specimen Requirements: 2 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Clotted Blood specimens are not acceptable.
 Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Lavender top tube (EDTA). Green top tube (Sodium Heparin).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 3 month(s)
 Frozen (-70 °C): 6 month(s)
 Scope of Analysis: ICP/MS (83785): Manganese
 Method (CPT Code)

Compound Name	Units	Reference Comment
Manganese	mcg/L	Normally: 5 - 18 mcg/L.

2570R Manganese, RBCs

Summary of Changes: Specimen Requirements (Specimen Container) were changed.
 Specimen Requirements (Rejection Criteria) were changed.
 Stability was changed.
 Reference Comment was changed.

Specimen Requirements: 1 mL RBCs
 Transport Temperature: Refrigerated
 Specimen Container: Green top tube (Sodium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
 Rejection Criteria: Received Frozen. Light Green top tube (Lithium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): Not Stable
 Scope of Analysis: ICP/MS (83785): Manganese
 Method (CPT Code)



Test Updates

Test Changes

Compound Name	Units	Reference Comment
Manganese	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 4.7 to 20 mcg/L (n=2022).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.

2570U Manganese, Urine

Summary of Changes: Stability was changed.
Reference Comment was changed.

Stability: Room Temperature: 5 day(s)
Refrigerated: 14 day(s)
Frozen (-20 °C): 30 day(s)

Scope of Analysis: Colorimetry (82570): Creatinine
Method (CPT Code) ICP/MS (83785): Manganese, Manganese (Creatinine corrected)

Compound Name	Units	Reference Comment
Manganese (Creatinine corrected)	mcg/g Creat	Normally less than 4 mcg/g creatinine

2697B Metals Acute Poisoning Panel, Blood (CSA)

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Scope of Analysis was changed.
Order of Reporting was changed.
Reference Comment was changed.

Specimen Requirements: 7 mL Blood
Transport Temperature: Refrigerated
Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
Light Protection: Not Required
Special Handling: Clotted Blood specimens are not acceptable. Collect sample in Glass Container (see Specimen Container).
Avoid seafood consumption for 48 hours prior to sample collection. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria: Plastic container. Plastic tube. Glass container. Light Green top tube (Lithium Heparin). Royal Blue top tube glass (Trace metal-free; EDTA). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).



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Test Changes

Scope of Analysis: ICP/MS (None, 82300): Cadmium, Chromium, Cobalt, Molybdenum, Nickel,
Method (CPT Code) Selenium, Vanadium
ICP/MS (83018): Antimony
ICP/MS (82175): Arsenic
ICP/MS (83018): Bismuth
ICP/MS (83018): Tellurium
ICP/OES (84630): Zinc
ICP/OES (82525): Copper
ICP/MS (83825): Mercury

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally: Less than 3 mcg/L. May be elevated in smokers. Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides. Please contact NMS Labs if you need assistance in supplying your state with the required information.

6153R Metals Panel 1, RBCs

Summary of Changes: Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Reference Comment was changed.

Specimen Requirements: 8 mL RBCs
Transport Temperature: Refrigerated
Specimen Container: Green top tube (Sodium Heparin), Light Green top tube (Lithium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
Light Protection: Not Required
Special Handling: Submit in container with a non-Potassium based preservative/anticoagulant. Tubes containing Potassium based preservatives/anticoagulants are not acceptable. Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
Rejection Criteria: Received Room Temperature. Received Frozen. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Lavender top tube (EDTA). Yellow top tube (ACD - Acid Citrate Dextrose).
Stability: Room Temperature: Not Stable
Refrigerated: 14 day(s)
Frozen (-20 °C): Not Stable
Scope of Analysis: ICP/MS (82495): Chromium
Method (CPT Code) ICP/OES (84630): Zinc
ICP/OES (82525): Copper
ICP/OES (84132): Potassium
ICP/OES (83735): Magnesium
ICP/OES (82310): Calcium



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Test Updates

Test Changes

Compound Name	Units	Reference Comment
Calcium	mg/dL	NMS Labs derived data for 2.5th - 97.5th percentile range is <RL to 2.3 mg/dL (n=1091). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mg/dL units.
Chromium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 3.1 mcg/L (n=3019). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Copper	mcg/dL	NMS Labs derived data for 2.5th - 97.5th percentile range is 59 - 91 mcg/dL (n=1999). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/dL units.
Magnesium	mg/dL	NMS Labs derived data for 2.5th - 97.5th percentile range is 4.2 - 5.9 mg/dL (n=2812). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mg/dL units.
Potassium	mEq/L	NMS Labs derived data for 2.5th - 97.5th percentile range is 82 - 100 mEq/L (n=541). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mEq/L units.
Zinc	mcg/dL	NMS Labs derived data for 2.5th - 97.5th percentile range is 794 - 1470 mcg/dL (n=2940). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/dL units.

2664UH Metals Panel 4 (Arsenic, Cadmium, Lead, Mercury), 24 Hour Urine

Summary of Changes: Stability was changed.
Reference Comment was changed.

Stability: Room Temperature: 7 day(s)
Refrigerated: 14 day(s)
Frozen (-20 °C): 14 day(s)



Test Updates

Test Changes

Scope of Analysis: ICP/MS (82175): Urine Volume, Arsenic, Arsenic (Urine Volume corrected)
 Method (CPT Code) ICP/MS (83655): Urine Volume, Lead, Lead (Urine Volume corrected)
 ICP/MS (82300, None): Urine Volume, Cadmium, Cadmium (Urine Volume corrected)
 ICP/MS (83825): Urine Volume, Mercury, Mercury (Urine Volume corrected)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers

2664U Metals Panel 4 (Arsenic, Cadmium, Lead, Mercury), Urine

Summary of Changes: Reference Comment was changed.

Scope of Analysis: Colorimetry (82570): Creatinine
 Method (CPT Code) ICP/MS (82175): Arsenic, Arsenic (Creatinine corrected)
 ICP/MS (82300, None): Cadmium, Cadmium (Creatinine corrected)
 ICP/MS (83655): Lead, Lead (Creatinine corrected)
 ICP/MS (83825): Mercury, Mercury (Creatinine corrected)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corrected)	mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information

2693B Metals/Metalloids Acute Poisoning Panel, Blood

Summary of Changes: Specimen Requirements were changed.
 Specimen Requirements (Rejection Criteria) were changed.

Specimen Requirements: 6 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Clotted Blood specimens are not acceptable. Collect sample in Glass Container (see Specimen Container).
 Avoid seafood consumption for 48 hours prior to sample collection. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).

2693R Metals/Metalloids Acute Poisoning Panel, RBCs



Test Updates

Test Changes

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Specimen Container) were changed.
Specimen Requirements (Rejection Criteria) were changed.
Reference Comment was changed.

Specimen Requirements: 9 mL RBCs
 Transport Temperature: Refrigerated
 Specimen Container: Green top tube (Sodium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Collect sample in Glass Container (see Specimen Container).
 Avoid seafood consumption for 48 hours prior to sample collection. Centrifuge and separate RBCs into an acid washed glass vial within two hours of collection.
 Rejection Criteria: Received Frozen. Plastic container. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
 Scope of Analysis: ICP/MS (83655): Lead
 Method (CPT Code) ICP/MS (82175): Arsenic
 ICP/MS (83018): Bismuth
 ICP/MS (83825): Mercury
 ICP/MS (84255): Selenium
 ICP/MS (83018): Thallium
 ICP/MS (83018): Antimony

Compound Name	Units	Reference Comment
Selenium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 110 - 330 mcg/L (N=1656). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.

2693SP Metals/Metalloids Acute Poisoning Panel, Serum/Plasma

Summary of Changes: Reference Comment was changed.

Scope of Analysis: ICP/MS (82175): Arsenic
 Method (CPT Code) ICP/MS (83018): Bismuth
 ICP/MS (83825): Mercury
 ICP/MS (84255): Selenium
 ICP/MS (83655): Lead
 ICP/MS (83018): Antimony
 ICP/MS (83018): Thallium

Compound Name	Units	Reference Comment
Lead	mcg/dL	Normally less than 0.5 mcg/dL.



Test Updates

Test Changes

3782LI Metals/Metalloids Panel (General Unknown), Liquid

Summary of Changes: Scope of Analysis was changed.
Silicon and Sodium were removed.

Scope of Analysis: ICP/MS (None): Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron,
Method (CPT Code) Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Gallium, Germanium, Gold, Indium, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Palladium, Platinum, Potassium, Selenium, Silver, Strontium, Tellurium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc

3782SL Metals/Metalloids Panel (General Unknown), Solid

Summary of Changes: Scope of Analysis was changed.
Silicon and Sodium were removed.

Scope of Analysis: ICP/MS (None, None): Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth,
Method (CPT Code) Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Gallium, Germanium, Gold, Indium, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Palladium, Platinum, Potassium, Selenium, Silver, Strontium, Tellurium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc

2661SP Metals/Metalloids Panel 1, Serum/Plasma

Summary of Changes: Reference Comment was changed.

Scope of Analysis: ICP/MS (83655): Lead
Method (CPT Code) ICP/MS (82175): Arsenic
ICP/MS (83825): Mercury

Compound Name	Units	Reference Comment
Lead	mcg/dL	Normally less than 0.5 mcg/dL.

2662B Metals/Metalloids Panel 2, Blood

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Reference Comment was changed.
Methods/CPT Codes were changed [ICP/MS (82300, 83785, 83885)]



Test Updates

Test Changes

Specimen Requirements: 2 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Clotted Blood specimens are not acceptable.
 Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 30 day(s)
 Scope of Analysis: ICP/MS (83018): Thallium
 Method (CPT Code) ICP/MS (82300, 83785, 83885): Cadmium, Manganese, Nickel

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally: Less than 3 mcg/L. May be elevated in smokers. Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides. Please contact NMS Labs if you need assistance in supplying your state with the required information.

2662SP Metals/Metalloids Panel 2, Serum/Plasma

Summary of Changes: Methods/CPT Codes were changed [ICP/MS (82300, 83785, 83885)]

Scope of Analysis: ICP/MS (83018): Thallium
 Method (CPT Code) ICP/MS (82300, 83785, 83885): Cadmium, Manganese, Nickel

2662U Metals/Metalloids Panel 2, Urine

Summary of Changes: Stability was changed.
 Reference Comment was changed.
 Methods/CPT Codes were changed [ICP/MS (82300,83785,83885)]

Stability: Room Temperature: 5 day(s)
 Refrigerated: 14 day(s)
 Frozen (-20 °C): 30 day(s)



Test Updates

Test Changes

Scope of Analysis: Colorimetry (82570): Creatinine
 Method (CPT Code) ICP/MS (83018): Thallium, Thallium (Creatinine corrected)
 ICP/MS (82300,83785,83885): Cadmium, Cadmium (Creatinine corrected),
 Manganese, Manganese (Creatinine corrected), Nickel, Nickel (Creatinine corrected)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corrected)	mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information
Manganese (Creatinine corrected)	mcg/g Creat	Normally less than 4 mcg/g Creatinine.
Nickel (Creatinine corrected)	mcg/g Creat	Normally less than 4 mcg/g creatinine.

2663B Metals/Metalloids Panel 3, Blood

Summary of Changes: Specimen Requirements (Rejection Criteria) were changed.
 Scope of Analysis was changed.
 Order of Reporting was changed.
 Reference Comment was changed.

Specimen Requirements: 5 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Yes
 Special Handling: Clotted Blood specimens are not acceptable.
 Avoid seafood consumption for 48 hours prior to sample collection. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Not received Light Protected. Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
 Scope of Analysis: ICP/MS (None, 82300): Cadmium, Chromium
 Method (CPT Code) H (84202): ZPP
 ICP/MS (83655): Lead
 ICP/MS (82175): Arsenic
 ICP/MS (83825): Mercury



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Compound Name	Units	Reference Comment
Cadmium	mcg/L	<p>Normally: Less than 3 mcg/L. May be elevated in smokers.</p> <p>Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides.</p> <p>Please contact NMS Labs if you need assistance in supplying your state with the required information.</p>

2663SP Metals/Metalloids Panel 3, Serum/Plasma

Summary of Changes: Reference Comment was changed.
Methods/CPT Codes were changed [ICP/MS (82300, 82495)]

Scope of Analysis: ICP/MS (82175): Arsenic
Method (CPT Code) ICP/MS (82300, 82495): Cadmium, Chromium
ICP/MS (83825): Mercury
ICP/MS (83655): Lead

Compound Name	Units	Reference Comment
Lead	mcg/dL	Normally less than 0.5 mcg/dL.

2663U Metals/Metalloids Panel 3, Urine

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Reference Comment was changed.

Specimen Requirements: 5 mL Urine
Transport Temperature: Refrigerated
Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)
Light Protection: Not Required
Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection. Avoid seafood consumption for 48 hours prior to sample collection.
Rejection Criteria: Received Room Temperature.
Stability: Room Temperature: 5 day(s)
Refrigerated: 14 day(s)
Frozen (-20 °C): 14 day(s)



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Test Changes

Scope of Analysis: Colorimetry (82570): Creatinine
 Method (CPT Code) ICP/MS (82175): Arsenic, Arsenic (Creatinine corrected)
 ICP/MS (83655): Lead, Lead (Creatinine corrected)
 ICP/MS (None, 82300): Cadmium, Cadmium (Creatinine corrected), Chromium,
 Chromium (Creatinine corrected)
 ICP/MS (83825): Mercury, Mercury (Creatinine corrected)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corrected)	mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information

6311B Metals/Metalloids Panel, Blood (CSA)

Summary of Changes: Specimen Requirements were changed.
Reference Comment was changed.

Specimen Requirements: 3 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Green top tube (Sodium Heparin).
 Scope of Analysis: ICP/MS (83825): Mercury
 Method (CPT Code) ICP/MS (82300, None): Cadmium
 ICP/MS (83018): Tellurium

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally: Less than 3 mcg/L. May be elevated in smokers. Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides. Please contact NMS Labs if you need assistance in supplying your state with the required information.

2240U Metals/Metalloids Panel, Urine (CSA)



Test Updates

Test Changes

Summary of Changes: Specimen Requirements were changed.
Stability was changed.
Reference Comment was changed.

Specimen Requirements: 9 mL Urine
 Transport Temperature: Refrigerated
 Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)
 Light Protection: Not Required
 Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
 Rejection Criteria: Received Room Temperature.
 Stability: Room Temperature: 5 day(s)
 Refrigerated: 14 day(s)
 Frozen (-20 °C): 14 day(s)
 Scope of Analysis: Colorimetry (82570): Creatinine
 Method (CPT Code) ICP/MS (83018): Bismuth
 ICP/MS (82175): Arsenic, Total Inorganic, Arsenic, Total Inorganic (Creatinine corrected)
 ICP/MS (None, 82495, 82300): Cadmium, Cadmium (Creatinine corrected)
 ICP/MS (83018): Beryllium, Beryllium (Creatinine corrected)
 ICP/MS (83825): Mercury, Mercury (Creatinine corrected)
 ICP/MS (None, 82495, 82300): Chromium, Chromium (Creatinine corrected)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corrected)	mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information

3069R Mineral Profile (7), RBCs

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Specimen Container) were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Scope of Analysis was changed.
Order of Reporting was changed.
Reference Comment was changed.
Methods/CPT Codes were changed [ICP/MS (82495, 83018x2, 83785, 84255)]



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Test Updates

Test Changes

Specimen Requirements: 4 mL RBCs
 Transport Temperature: Refrigerated
 Specimen Container: Green top tube (Sodium Heparin) AND Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
 Rejection Criteria: Received Room Temperature. Received Frozen. Plastic container. Light Green top tube (Lithium Heparin). Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
 Stability: Room Temperature: Not Stable
 Refrigerated: 14 day(s)
 Frozen (-20 °C): Not Stable
 Scope of Analysis: ICP/MS (82495, 83018x2, 83785, 84255): Chromium, Cobalt, Manganese, Molybdenum, Selenium
 Method (CPT Code) ICP/OES (84630): Zinc
 ICP/OES (82525): Copper

Compound Name	Units	Reference Comment
Chromium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 3.1 mcg/L (n=3019). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Copper	mcg/dL	NMS Labs derived data for 2.5th - 97.5th percentile range is 59 - 91 mcg/dL (n=1999). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/dL units.
Cobalt	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 1.5 mcg/L (n=912). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Manganese	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 4.7 to 20 mcg/L (n=2022). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.



Test Updates

Test Changes

Compound Name	Units	Reference Comment
Molybdenum	mcg/L	<p>NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 2.6 mcg/L (n=956).</p> <p>The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.</p>
Selenium	mcg/L	<p>NMS Labs derived data: 2.5th - 97.5th percentile range is 110 - 330 mcg/L (N=1656).</p> <p>The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.</p>

3066B Mineral Profile, Blood

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Scope of Analysis was changed.
Order of Reporting was changed.
Methods/CPT Codes were changed [ICP/MS (82495, 83018x2, 83785, 84255)]

Specimen Requirements: 3 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: For Magnesium testing, please order Magnesium test 2551.
 Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Plastic container. Plastic tube. Light Green top tube (Lithium Heparin). Royal Blue top tube glass (Trace metal-free; EDTA). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 30 day(s)
 Scope of Analysis: ICP/MS (82495, 83018x2, 83785, 84255): Chromium, Cobalt, Manganese,
 Method (CPT Code) Molybdenum, Selenium
 ICP/OES (84630): Zinc
 ICP/OES (82525): Copper

3066R Mineral Profile, RBCs



Effective Date:
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Test Updates

Test Changes

Summary of Changes: Specimen Requirements were changed.
 Specimen Requirements (Rejection Criteria) were changed.
 Stability was changed.
 Scope of Analysis was changed.
 Order of Reporting was changed.
 Reference Comment was changed.
 Methods/CPT Codes were changed [ICP/MS (82495, 83018x2, 83785, 84255)]

Specimen Requirements: 5 mL RBCs
 Transport Temperature: Refrigerated
 Specimen Container: Green top tube (Sodium Heparin) AND Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
 Rejection Criteria: Received Room Temperature. Received Frozen. Plastic container. Light Green top tube (Lithium Heparin). Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
 Stability: Room Temperature: Not Stable
 Refrigerated: 14 day(s)
 Frozen (-20 °C): Not Stable
 Scope of Analysis: ICP/MS (82495, 83018x2, 83785, 84255): Chromium, Cobalt, Manganese,
 Method (CPT Code) Molybdenum, Selenium
 ICP/OES (84630): Zinc
 ICP/OES (82525): Copper
 ICP/OES (83735): Magnesium

Compound Name	Units	Reference Comment
Chromium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 3.1 mcg/L (n=3019). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Cobalt	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 1.5 mcg/L (n=912). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.



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Compound Name	Units	Reference Comment
Manganese	mcg/L	<p>NMS Labs derived data: 2.5th - 97.5th percentile range is 4.7 to 20 mcg/L (n=2022).</p> <p>The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.</p>
Molybdenum	mcg/L	<p>NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 2.6 mcg/L (n=956).</p> <p>The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.</p>
Selenium	mcg/L	<p>NMS Labs derived data: 2.5th - 97.5th percentile range is 110 - 330 mcg/L (N=1656).</p> <p>The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.</p>

3066SP Mineral Profile, Serum/Plasma

Summary of Changes: Methods/CPT Codes were changed [ICP/MS (82495, 83018x2, 83785, 84255)]

Scope of Analysis: ICP/MS (82495, 83018x2, 83785, 84255): Chromium, Cobalt, Manganese,
Method (CPT Code) Molybdenum, Selenium
ICP/OES (84630): Zinc
ICP/OES (82525): Copper

3090B Molybdenum, Blood

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.



Test Updates

Test Changes

Specimen Requirements: 2 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Clotted Blood specimens are not acceptable.
 Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Plastic tube. Light Green top tube (Lithium Heparin). Royal Blue top tube glass (Trace metal-free; EDTA). Tan top tube - glass (Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 3 month(s)
 Frozen (-70 °C): 6 month(s)

3090R Molybdenum, RBCs

Summary of Changes: Specimen Requirements (Specimen Container) were changed.
 Specimen Requirements (Rejection Criteria) were changed.
 Stability was changed.
 Reference Comment was changed.

Specimen Requirements: 1 mL RBCs
 Transport Temperature: Refrigerated
 Specimen Container: Green top tube (Sodium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
 Rejection Criteria: Received Frozen. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): Not Stable
 Scope of Analysis: ICP/MS (83018): Molybdenum
 Method (CPT Code)

Compound Name	Units	Reference Comment
Molybdenum	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 2.6 mcg/L (n=956).

The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.



Test Updates

Test Changes

3090SP Molybdenum, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.

- Specimen Requirements: 2 mL Serum or Plasma
- Transport Temperature: Refrigerated
- Specimen Container: Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)
- Light Protection: Not Required
- Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
- Rejection Criteria: Gray top tube (Sodium Fluoride / Potassium Oxalate). Polymer gel separation tube (SST or PST).

3090U Molybdenum, Urine

Summary of Changes: Specimen Requirements were changed.
Stability was changed.
Reference Comment was changed.

- Specimen Requirements: 3 mL Urine
- Transport Temperature: Refrigerated
- Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)
- Light Protection: Not Required
- Special Handling: Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
- Rejection Criteria: Received Room Temperature.
- Stability: Room Temperature: 5 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 30 day(s)
- Scope of Analysis: Colorimetry (82570): Creatinine
- Method (CPT Code) ICP/MS (83018): Molybdenum, Molybdenum (Creatinine corrected)

Compound Name	Units	Reference Comment
Molybdenum	mcg/L	Normally: Less than 160 mcg/L.
Molybdenum (Creatinine corrected)	mcg/g Creat	Normally: Less than 150 mcg/g creatinine.

3140B Nickel, Blood

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.



Test Updates

Test Changes

Specimen Requirements: 2 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Clotted Blood specimens are not acceptable.
 Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 3 month(s)
 Frozen (-70 °C): 6 month(s)

3140R Nickel, RBCs

Summary of Changes: Stability was changed.

Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): Not Stable

3140U Nickel, Urine

Summary of Changes: Specimen Requirements were changed.
 Specimen Requirements (Specimen Container) were changed.
 Reference Comment was changed.

Specimen Requirements: 3 mL Urine
 Transport Temperature: Refrigerated
 Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)
 Light Protection: Not Required
 Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
 Rejection Criteria: Received Room Temperature.
 Scope of Analysis: Colorimetry (82570): Creatinine
 Method (CPT Code) ICP/MS (83885): Nickel, Nickel (Creatinine corrected)

Compound Name	Units	Reference Comment
Nickel (Creatinine corrected)	mcg/g Creat	Normally: Less than 4 mcg/g Creatinine.



Test Updates

Test Changes

4124B Rubidium, Blood

Summary of Changes: Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Reference Comment was changed.
Methods/CPT Codes were changed [ICP/MS (83018)]

Specimen Requirements: 2 mL Blood
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Clotted Blood specimens are not acceptable.
 Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
 Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): 3 month(s)
 Frozen (-70 °C): 6 month(s)
 Scope of Analysis: ICP/MS (83018): Rubidium
 Method (CPT Code)

Compound Name	Units	Reference Comment
Rubidium	mcg/dL	Normally: 100 - 400 mcg/dL.

4124R Rubidium, RBCs

Summary of Changes: Specimen Requirements were changed.
Stability was changed.
Methods/CPT Codes were changed [ICP/MS (83018)]

Specimen Requirements: 1 mL RBCs
 Transport Temperature: Refrigerated
 Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
 Rejection Criteria: Received Frozen.
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): Not Stable
 Scope of Analysis: ICP/MS (83018): Rubidium
 Method (CPT Code)



Test Updates

Test Changes

4124SP Rubidium, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.

Specimen Requirements: 2 mL Serum or Plasma

Transport Temperature: Refrigerated

Specimen Container: Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)

Light Protection: Not Required

Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.

Rejection Criteria: Plastic container. Gray top tube (Sodium Fluoride / Potassium Oxalate). Polymer gel separation tube (SST or PST). Lavender top tube (EDTA).

4124U Rubidium, Urine

Summary of Changes: Stability was changed.
Methods/CPT Codes were changed [ICP/MS (83018)]

Stability: Room Temperature: 30 day(s)

Refrigerated: 30 day(s)

Frozen (-20 °C): 3 month(s)

Scope of Analysis: ICP/MS (83018): Rubidium

Method (CPT Code)

4180B Selenium, Blood

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.

Specimen Requirements: 2 mL Blood

Transport Temperature: Refrigerated

Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)

Light Protection: Not Required

Special Handling: Clotted Blood specimens are not acceptable.
Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.

Rejection Criteria: Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).

Stability: Room Temperature: 30 day(s)

Refrigerated: 30 day(s)

Frozen (-20 °C): 3 month(s)

Frozen (-70 °C): 6 month(s)

4180R Selenium, RBCs



Test Updates

Test Changes

Summary of Changes: Specimen Requirements were changed.
 Specimen Requirements (Specimen Container) were changed.
 Specimen Requirements (Rejection Criteria) were changed.
 Stability was changed.
 Reference Comment was changed.

Specimen Requirements: 1 mL RBCs
 Transport Temperature: Refrigerated
 Specimen Container: Green top tube (Sodium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
 Light Protection: Not Required
 Special Handling: Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
 Rejection Criteria: Received Frozen. Plastic container. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
 Stability: Room Temperature: 30 day(s)
 Refrigerated: 30 day(s)
 Frozen (-20 °C): Not Stable
 Scope of Analysis: ICP/MS (84255): Selenium
 Method (CPT Code)

Compound Name	Units	Reference Comment
Selenium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 110 - 330 mcg/L (N=1656). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.

4180SP Selenium, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.

Specimen Requirements: 2 mL Serum or Plasma
 Transport Temperature: Refrigerated
 Specimen Container: Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)
 Light Protection: Not Required
 Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
 Rejection Criteria: Gray top tube (Sodium Fluoride / Potassium Oxalate). Polymer gel separation tube (SST or PST).

6317U Semi Conductor Panel, Urine



Test Updates

Test Changes

Summary of Changes: Specimen Requirements were changed.
Scope of Analysis was changed.
Order of Reporting was changed.
Reference Comment was changed.
Methods/CPT Codes were changed [ICP/MS (82300, 84255)]

Specimen Requirements: 5 mL Urine
 Transport Temperature: Refrigerated
 Specimen Container: Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-free)
 Light Protection: Not Required
 Special Handling: Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection. Avoid seafood consumption for 48 hours prior to sample collection.
 Rejection Criteria: Received Room Temperature.
 Scope of Analysis: Colorimetry (82570): Creatinine
 Method (CPT Code) ICP/MS (82175): Arsenic, Arsenic (Creatinine corrected)
 ICP/MS (82300, 84255): Cadmium, Cadmium (Creatinine corrected), Selenium, Selenium (Creatinine corrected)
 ICP/MS (83018): Tellurium
 ICP/MS (83825): Mercury, Mercury (Creatinine corrected)

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Arsenic (Creatinine corrected)	mcg/g Creat	[Reference comment removed]
Cadmium (Creatinine corrected)	mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information

4478SP Thorium, Serum/Plasma

Summary of Changes: Reference Comment was changed.

Scope of Analysis: ICP/MS (83018): Thorium
 Method (CPT Code)

Compound Name	Units	Reference Comment
Thorium	mcg/L	Normally: Less than 0.5 mcg/L.

4765B Vanadium, Blood



Test Updates

Test Changes

Summary of Changes: Specimen Requirements were changed.
Specimen Requirements (Rejection Criteria) were changed.
Stability was changed.
Methods/CPT Codes were changed [ICP/MS (83018)]

Specimen Requirements: 2 mL Blood
Transport Temperature: Refrigerated
Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
Light Protection: Not Required
Special Handling: Clotted Blood specimens are not acceptable.
Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria: Glass container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
Stability: Room Temperature: 30 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 3 month(s)
Frozen (-70 °C): 6 month(s)
Scope of Analysis: ICP/MS (83018): Vanadium
Method (CPT Code)

4765R Vanadium, RBCs

Summary of Changes: Stability was changed.
Methods/CPT Codes were changed [ICP/MS (83018)]

Stability: Room Temperature: 30 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): Not Stable
Scope of Analysis: ICP/MS (83018): Vanadium
Method (CPT Code)

4765SP Vanadium, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.

Specimen Requirements: 2 mL Serum or Plasma
Transport Temperature: Refrigerated
Specimen Container: Plasma: Royal Blue top tube, plastic (Trace metal-free; EDTA), Serum: Royal Blue top tube, plastic (Trace metal-free; No additive)
Light Protection: Not Required
Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
Rejection Criteria: Glass container. Polymer gel separation tube (SST or PST).



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Test Updates

Test Changes

4765U Vanadium, Urine

Summary of Changes: Stability was changed.
Reference Comment was changed.
Methods/CPT Codes were changed [ICP/MS (83018)]

Stability: Room Temperature: 5 day(s)
Refrigerated: 30 day(s)
Frozen (-20 °C): 30 day(s)

Scope of Analysis: Colorimetry (82570): Creatinine
Method (CPT Code) ICP/MS (83018): Vanadium, Vanadium (Creatinine corrected)

Compound Name	Units	Reference Comment
Vanadium	mcg/L	Normally: Less than 1 mcg/L.



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Test Updates

Discontinued Tests

Test Code	Test Name	Alternative Test
1781SP	Diquat, Serum/Plasma	No Alternate Tests Available
1781U	Diquat, Urine	No Alternate Tests Available
2231B	ICP/MS Panel, Blood (Forensic)	No Alternate Tests Available
2231H	ICP/MS Panel, Hair (Forensic)	No Alternate Tests Available
2231SP	ICP/MS Panel, Serum/Plasma (Forensic)	No Alternate Tests Available
2231TI	ICP/MS Panel, Tissue (Forensic)	No Alternate Tests Available
2231U	ICP/MS Panel, Urine (Forensic)	No Alternate Tests Available
3340SP	Paraquat, Serum/Plasma	No Alternate Tests Available
3340U	Paraquat, Urine	No Alternate Tests Available