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**Lab Dept:** Urine/Stool

**Test Name:** SPECIFIC GRAVITY, URINE

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***General Information***

**Lab Order Codes:** USG

**Synonyms:** N/A

**CPT Codes:** 81003 – Urinalysis; automated, without microscopy

**Test Includes:** Specific gravity measurement by colorimetric reagent strip.

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***Logistics***

**Test Indications:** Useful for evaluating the concentrating and excretory power of the kidney.

**Lab Testing Sections:** Urinalysis

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 2 - 4 hours

**Special Instructions:** Indicate method of collection on request form (catheterized, clean-catch, or void). Deliver to lab within 30 minutes of collection. Refrigerate specimen if there is a delay in transport of 30 minutes or more.

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***Specimen***

**Specimen Type:** Urine

**Container:** Urine cup

**Draw Volume:** Entire urine collection

**Processed Volume:** Minimum volume: 1 mL

**Collection:** Collect a clean-catch urine specimen as follows:

**Males:** Clean glans with soap and water. Rinse area with wet gauze pads. While holding foreskin retracted, begin voiding. After several mL's have passed, collect midstream portion without stopping flow of urine. Place the cap on the cup and tighten securely. Refrigerate specimen after collection and promptly forward to the lab.

**Females:** Thoroughly clean urethral area with soap and water. Rinse area with wet gauze pads. While holding labia apart, begin voiding. After several mL's have passed, collect midstream portion without stopping the flow of urine. Place the cap on the cup and tighten securely. Refrigerate specimen after collection and promptly forward to the lab.

Note: Indicate type of specimen (catheterized or void) and time of collection on the label.

**Special Processing:** N/A

**Patient Preparation:** See above

**Sample Rejection:** Less than 1 mL urine; mislabeled or unlabeled specimens

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### ***Interpretive***

**Reference Range:**

<b>Age:</b>	<b>Specific Gravity:</b>
Infant (0 days - 1 year):	1.002 - 1.006
>1 year:	1.001 - 1.030

**Critical Values:** N/A

**Limitations:** Radiographic dyes in urine increase the specific gravity by hydrometer or refractometer. Glucose or protein may also increase specific gravity out of proportion to osmolality, as measured by hydrometer or refractometer. Strip method urine specific gravity was reported as having a significant positive bias at urine pH  $\leq 6$  and negative bias at pH  $> 7$  compared to specific gravity by refractometer. Urine osmolality is considered preferable in some settings. Benitez et al suggest that osmolality is the only accurate measure of urine concentration in newborn infants.

**Methodology:** Colorimetric (Reagent Strip)

**References:** Bayer Multistix® 10 SG Reagent Strips Package Insert (1992)

Benitez O, et al (1986) Inaccuracy in neonatal measurement of urine concentration with a refractometer. J Pediatr 108(4):613-616

Strasinger SK (1989) Urinalysis and Body Fluids, 2<sup>nd</sup> ed, FA Davis Company

**Updates:**

6/13/2012: Reference range  $\geq 1$  year previously listed as 1.001-1.035.  
9/23/15: Updated ref ranges.