STAT AMERICA®
Substance Testing Applications & Technologies of America

Understanding Dilute Specimens

1. What does "dilute" mean?

A dilute specimen is a urine specimen that has a greater concentration of water than that of a normal urine specimen. Dilute specimens are generally caused by oral hydration of fluids and are usually more clear in appearance than normal urine. It is possible that a specimen could be dilute due to inadvertent over-hydration, several medications taken by the donor or existing medical conditions. However, it is also possible that the donor has intentionally over-hydrated, or water-loaded, to avoid the detection of the presence of drugs in the specimen.

2. How does the testing laboratory determine if a specimen is dilute?

The first step in urine-specimen screening is called validity testing. Validity testing determines the authenticity and concentration of the urine specimen. To make this determination, testing laboratories measure the specimen's specific gravity[1] and creatinine[2] levels. The range for specific gravity in a normal urine sample is greater-than-or-equal-to 1.003. The range for creatinine in a normal urine specimen is greater-than-or-equal-to 20 mg/dL. If BOTH the specific gravity and creatinine levels fall below the normal range, the specimen is considered dilute. Although a specimen is considered dilute, the testing laboratory still screens the specimen for the presence of drugs, and dilute specimens can occasionally yield a positive result. If a dilute specimen is positive, the result is treated as a positive result and forwarded to STAT America's medical review department. Pursuant to the reporting policy of STAT America, dilute specimens that are negative for the presence of drugs will be reported as "negative-dilute."

3. What should I do when I receive a negative-dilute specimen?

STAT America recommends that you review your corporate drug-testing policy **(or federal drug-testing regulations, if DOT)** dealing with negative-dilute specimens. If your corporate drug-testing policy does not address negative-dilute specimens, STAT America recommends that your course of action be consistent and that your corporate drug-testing policy be amended to address this situation. It is important to note that when specimens are screened for the presence of drugs that the testing laboratories use cutoff levels in determining whether a specimen is positive. It is possible that intentional or inadvertent over-hydration, or water loading, before specimen collection may lower a drug's concentration below the testing cutoff levels, thus preventing the reporting of a positive drug-test result. Questions regarding dilute specimens may be directed to STAT America's medical review department. Companies may choose to accept the negative-dilute result as a negative result, while some companies may elect to send the donor back for an additional test. If your company has a "one test only" policy and the donor's test result is negative-dilute, STAT America recommends that the donor be given the option of medical review to present potential medical explanations. If your company allows for a second test, please see "Question 4" for additional information.

4. How should I inform the donor if a second specimen is to be collected?

STAT America recommends informing the donor that his or her specimen was dilute, and that most likely it was due to fluid hydration before voiding the specimen. The donor should be informed that per company policy a second test is required and that a second dilute specimen or otherwise invalid specimen may or will result in refusal to hire or termination of employment. Before going for the second collection, the donor will need a new chain-of-custody form and should be given instructions to consume minimal fluids for a six-to-eight hour period before collection and provide the first voided specimen of the day. This can easily be achieved by instructing the donor to go to the collection site first thing in the morning. If your drug-testing policy requires a normal-negative result and it limits the number of times the donor may retest, it is important to inform the donor of this policy. If the second result is also negative-dilute, you may choose to have the donor speak with STAT America's medical review department to present potential medical explanations for the dilute urine specimen before taking final action based on the test result.

---

[1] Specific Gravity – a ratio comparing the density of the urine to the density of water.
[2] Creatinine – a byproduct of protein metabolism that occurs in human urine.