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MINIMUM REQUIRED PERFORMANCE LEVELS FOR DETECTION OF *PROHIBITED SUBSTANCES*

In order to ensure that all *WADA*-accredited Laboratories can report the presence of *Prohibited Substances*, their *Metabolite(s)* or their *Marker(s)* in a uniform way, a minimum routine detection capability for testing methods has been established. It is recognized that some Laboratories will be able to identify a wider range or lower concentrations of *Prohibited Substances* than other Laboratories. While such individual capabilities are encouraged in order to improve the overall system, it is also recognized that there are Minimum Required Performance Levels (MRPL) at which all Laboratories shall operate.

The MRPL is an analytical parameter of technical performance with which the Laboratories shall comply when testing for the presence of a particular *Prohibited Substance*, its *Metabolite(s)* or *Marker(s)*. The MRPL is not a threshold, nor is it a limit of detection (LOD) or a limit of quantification (LOQ). *Adverse Analytical Findings* may result from concentrations below the MRPL listed in the table.

The following table lists general requirements for detection of concentrations of representative substances in the classes of *Prohibited Substances* and, where applicable, specific exceptions.

Minimum Required Performance Levels

Prohibited Class	Specific Examples/ Exceptions	Concentration
Stimulants[a,b]		0.5 µg/mL
	Strychnine	0.2 µg/mL
Narcotics[a]		0.2 µg/mL
	Buprenorphine	10 ng/mL
Anabolic Agents[b]		10 ng/mL
	Clenbuterol	2 ng/mL
	Methandienone[c]	2 ng/mL
	Methyltestosterone[d]	2 ng/mL
	Stanozolol[e]	2 ng/mL
	Epitestosterone	2 ng/mL
Hormone antagonists and modulators	Aromatase inhibitors, SERMs and other anti-estrogenic substances	50 ng/mL
β_2-agonists		100 ng/mL
β-blockers[a]		0.5 µg/mL
Diuretics[f]		0.25 µg/mL
Glucocorticosteroids[g]		30 ng/mL
Peptide Hormones	hCG	5 mIU/mL

[a] For a Non-Threshold Substance prohibited in-competition only, it is not recommended that Laboratories report below 10% (1/10th) of the MRPL.

[b] For the parent compound or metabolite(s).

[c] 17β-methyl-5β-androst-1-ene-3α,17α-diol.

[d] 17α-methyl-5β-androstane-3α,17β-diol.

[e] 3'-hydroxystanozolol.

[f] For thiazides: metabolites and/or degradation compounds.

[g] For glucocorticosteroids, Laboratories are not to report below the MRPL.

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Laboratories shall routinely detect substances at and above the concentrations given in the above table.

Test methods shall also reliably establish the presence of Threshold Substances at concentrations greater than the threshold taking into account measurement uncertainty. The thresholds are listed in the table below.

Thresholds

Compound	Threshold
Carboxy-THC [a]	> 15 ng/mL
Cathine [b]	> 5 µg/mL
Ephedrine	> 10 µg/mL
Epitestosterone* [c]	> 200 ng/mL
Methylephedrine	> 10 µg/mL
Morphine [d,e]	> 1 µg/mL
19-norandrosterone* [c]	> 2 ng/mL
Salbutamol [d,f]	> 1 µg/mL
T/E ratio* [g]	

[a] A urinary concentration of 11-nor-delta 9-tetrahydrocannabinol-9-carboxylic acid (carboxy-THC) greater than 15 ng/mL shall be reported as an *Adverse Analytical Finding*.

[b] Cathine at a urinary concentration greater than 5 µg/mL constitutes an *Adverse Analytical Finding* unless it may have been caused as a result of the administration of a permitted substance such as pseudoephedrine.

[c] Threshold adjusted only if specific gravity above 1.020.

[d] The threshold concentration is based on the sum of the glucuronide conjugate (expressed as the free drug) and free drug concentrations.

[e] Morphine at a urinary concentration greater than 1 µg/mL constitutes an *Adverse Analytical Finding* unless it may have been caused as a result of the administration of a permitted substance such as codeine.

[f] Salbutamol concentrations in urine greater than 1 µg/mL shall be reported as an *Adverse Analytical Finding*. Concentrations greater than 500 ng/mL and less than 1 µg/mL should be reported as consistent with the use of a β2-agonist.

[g] Refer to section S1-1b of the *Prohibited List*.

* An *Adverse Analytical Finding* shall be reported if an exogenous origin has been determined by any reliable analytical method (e.g. GC/C/IRMS) regardless of concentration or ratio (even if found below the threshold).