

A GLOSSARY OF TERMS COMMONLY USED IN RACING CHEMISTRY

In addition to the normative references given in Clause 2 of ISO/IEC 17025:2005, the following is a collection of terms commonly used by racing chemists and which are specific to the discipline of racing chemistry. This collection has been derived from a draft *Glossary of Terms* produced by the “ISO 17025 Accreditation Committee” of the Association of Official Racing Chemists. It is not intended to be comprehensive, nor does it provide an authoritative interpretation of terms the use of which does vary from one region to another.

- **Racing Chemist**

A scientist engaged directly or via an authorized laboratory by a racing or equestrian authority to assist the science or practice of RACING CHEMISTRY.

[From the AORC; also known as *Racing Analyst*]

- **Racing Chemistry**

The discipline of finding and proving the presence or absence of substances in specimens, contrary to the rules of racing or equestrian events.

[From the AORC; an alternative definition could be the application of test methods and processes to provide evidentiary data for the identification, and if applicable quantification, of substances in SAMPLES contrary to the rules of racing and equestrian events.]

- **Horseracing Laboratory**

A laboratory that carries out RACING CHEMISTRY (in whole or in part) on official SAMPLES routinely for a horseracing authority.

- **Sample**

Material from any part, or in contact with any part, of the horse.

[From Article Six, Clause 2, of the *International Agreement on Breeding, Racing and Wagering* of the IFHA]

- **Test Sample**

A portion or aliquot taken from a SAMPLE and which may have been processed or subject to certain analytical procedures.

- **A-sample and B-sample**

A SAMPLE collected under a secure chain of custody shall be split into an A-sample and a B-sample. If the A-sample is reported to contain prohibited substances, the B-sample may be analysed for those substances, either automatically or optionally at the trainer’s or owner’s request.

[From Article Six, Clause 3, of the *International Agreement on Breeding, Racing and Wagering* of the IFHA; the A-sample may be referred to as a *Primary or First Sample*, and the B-sample as a *Referee Sample, Reserve Sample, Confirmatory Sample, Split Sample, or Secondary Sample*.]

● **Threshold**

An internationally or regionally agreed numerical value (usually the concentration of a specified substance) or some other indicator (such as a concentration ratio, or difference between the quantities, of two specified substances) in a specified matrix (e.g. blood or urine) below which the finding is not actionable.

[Thresholds can only be adopted for (i) substances endogenous to the horse, (ii) substances arising from plants traditionally grazed or harvested as equine feed, and (iii) substances in equine feed arising from contamination during cultivation, processing or treatment, storage or transportation -- from Article Six, Clauses 14-16, of the *International Agreement on Breeding, Racing and Wagering* of the IFHA]

● **Prohibited Substance**

A substance defined by a regulatory authority as one which may not be detected in a SAMPLE and, where relevant, at a concentration above its THRESHOLD. PROHIBITED SUBSTANCES may include drugs, metabolites, artefacts, toxins, or other substances as defined by each authority.

[See also Article Six, Clauses 10-11, of the *International Agreement on Breeding, Racing and Wagering* of the IFHA]

● **Positive**

This may mean one of the following:

- where the laboratory establishes the presence of a substance (usually a PROHIBITED SUBSTANCE) -- more appropriately referred to as a *Laboratory Positive*; or
- where a controlling authority inquires into a Laboratory Positive; or
- where the presence of the prohibited substance is accepted as factual (and in contravention of the rules) by the controlling authority or an inquiry board and is not dismissed on appeal -- more appropriately referred to as an *Official Positive*.

● **Negative**

This may mean one of the following:

- where the laboratory reports that, in accordance with established criteria, no substance in possible contravention of the rules has been found -- more appropriately referred to as a *Laboratory Negative*; or
- where the controlling authority takes the regulatory view that no substance in contravention of the rules has been found -- more appropriately referred to as an *Official Negative*.

● **Suspicious**

There is evidence from one or more tests for the presence of a substance (usually a PROHIBITED SUBSTANCE), but it does not meet the criteria for unequivocal identification and suggests additional testing may be required.

[May also be referred to as *Irregular*; results from SCREENING should never be referred to as POSITIVE.]

- **False Negative**

Failure to report the presence of a PROHIBITED SUBSTANCE in a SAMPLE, when in fact it is present and should have been reported.

- **False Positive**

The reporting of a PROHIBITED SUBSTANCE which is actually not present in the SAMPLE analysed.

- **Screening**

An analytical procedure applied to a TEST SAMPLE or series of TEST SAMPLES designed to differentiate between those that do not warrant further investigation and any that shows preliminary evidence of the possible presence of a PROHIBITED SUBSTANCE and requires follow-up or CONFIRMATORY ANALYSIS.

- **Target Screening**

A SCREENING procedure that targets a specific substance or a specific group of substances (usually PROHIBITED SUBSTANCES).

[Also known as *Specific Screening*]

- **Broad-Spectrum Screening**

A SCREENING procedure that can detect a broad variety of substances (mostly PROHIBITED SUBSTANCES).

- **Confirmation or Confirmatory Analysis**

An analytical procedure applied to a sample to identify and establish the presence of a substance (usually a PROHIBITED SUBSTANCE).

[Also known as *Confirmatory Method* or *Confirmatory Procedure*; it may be applied to any SAMPLE].

- **Action Level or Decision Limit**

An in-house limit (usually applied during SCREENING and expressed as a concentration, but can also be just an instrument response or a relative concentration) below which a laboratory does not normally pursue the possible presence of a PROHIBITED SUBSTANCE.

[Also known as *Recommended Limit of Detection* (RLOD) or *Screening Limit of Detection* (SLOD) when applied to the detection of certain common equine therapeutic substances].

- **Reporting Level**

The concentration, as instructed by the authority or determined by the laboratory in consultation with the authority, of a specified PROHIBITED SUBSTANCE (usually a legitimate equine therapeutic substance or a normally occurring substance) below which a laboratory does not normally report its presence in a SAMPLE.

[Also known as *Regulatory Level* or *Recommended Limit of Reporting* (RLOR)].

- **System Blank**

A REAGENT BLANK or NEGATIVE CONTROL analysed concomitantly with the TEST SAMPLE to demonstrate the absence of contamination during analysis.

- **Reagent Blank**

A non-biological test portion (i.e., an equivalent amount of a suitable solvent in place of a TEST SAMPLE and free of the analyte in question) analysed concomitantly with the TEST SAMPLE to demonstrate the absence of contamination during analysis.

- **Negative Control**

A portion of a matrix similar to that of the TEST SAMPLE (and negative to the analyte in question) to which the complete analytical procedure is applied in order to demonstrate that the apparatus and reagents employed are free of the analyte.

[May also be referred to as *Matrix Blank* or *Sample Blank* when the analyte in question is not a THRESHOLD substance].

- **Carryover**

A process by which material from one sample is transferred to the next through contact with a device used on both samples, such as an injector port, pipette tip or injection needle.

[Also known as *Injector Memory* when the CARRYOVER occurs via the injector of an instrument].

- **Positive Control**

A reference material or test portion used for obtaining reference data or other quality control purposes (such as to monitor if a certain test procedure is working).

- **Spiked Sample or Spiked Control**

A SAMPLE to which a quantity of a substance (usually a PROHIBITED SUBSTANCE) has been added, usually with knowledge of the resulting concentration, and is used for quality control purposes.

- **Administration Sample**

A SAMPLE collected after the administration of a substance (usually a PROHIBITED SUBSTANCE) to a horse or some other species.

- **Administration Control**

A portion of an ADMINISTRATION SAMPLE or an isolate therefrom, that is analyzed concomitantly with the test portion for quality control purposes.

- **Single-Blind Sample**

A SAMPLE revealed to be for performance evaluation where the identity of the PROHIBITED SUBSTANCE present or its concentration or frequently both are not revealed.

- **Double-Blind Sample**

An unrevealed SAMPLE for performance evaluation that may contain an unrevealed PROHIBITED SUBSTANCE.

- **Negative Exchange Sample**

A SAMPLE already determined as a *Laboratory Negative* that is exchanged with another laboratory for testing, as a quality assurance measure against FALSE NEGATIVE.

- **Random Testing, or Horse-In-Training Testing, or Testing in Training**

The testing of SAMPLES collected from horses while in training and other than on specific occasions.

[RANDOM TESTING may also mean the process of random selection of specific tests as applied to a SAMPLE].

- **Elective Testing**

An analytical service provided for guidance before a competition, where, subject to the authority's conditions, a submitted SAMPLE is analysed by the laboratory for the PROHIBITED SUBSTANCES requested (usually limited to legitimate equine therapeutic substances).

- **Detection Time or Detection Period**

The period after an administration of a substance (usually a PROHIBITED SUBSTANCE) to a horse during which the substance or its metabolites can be detected in SAMPLES collected from the horse.

[The DETECTION TIME of a substance observed in SAMPLES from a horse can be highly variable and is dependent on a number of factors, such as the form/dose/route/frequency of the substance administered, the individual variability of the horse, the analysis method used for detection, etc.]

- **Withdrawal Time or Withdrawal Period**

The period after administration for which the substance (usually a legitimate equine therapeutic substance) or its metabolites can be found in a given percentile of the horse population (e.g. 80, 90, 95%) with a given statistical protection (confidence limit).