

# Critical Reporting Limits

## For Hair Drug Laboratory Testing and Reporting of Results

- Hair sample(s) are tested for evidence of drug and/or excessive alcohol use (as per the customer instructions) by Cellmark or Cellmark's appointed ISO17025 accredited laboratory (all results will be assessed and reported by Cellmark's toxicologists) using techniques known as liquid chromatography with tandem mass spectrometry (LC-MS/MS) or gas chromatography with tandem mass spectrometry (GC-MS/MS).
- Results for drugs and alcohol markers will be reported in nanograms of drug per milligram of hair (ng/mg).
- Alcohol marker analysis in hair (EtG and ethyl palmitate) can be used to indicate 'chronic excessive' alcohol consumption only (not abstinence).
- For any result to be reported as detected, it will need to fall above the reporting 'cut-off' concentrations detailed below (these cut-off levels apply to the testing of hair samples received at Cellmark after 12<sup>th</sup> June 2023) which have been established using the Society of Hair Testing (SoHT\*) recommendations and the results of extensive laboratory validation. If the benzoylecgonine/cocaine ratio is less than 5% then the result for benzoylecgonine will be reported as not detected.
- The Uncertainty of Measurement (UM) at each cut-off level is provided in the table below; the UM is not accounted for when reporting results.
- We reserve the right to amend these cut-off levels and update uncertainties if considered scientifically appropriate; customers will be kept informed.
- Every test report will include details of each drug compound that has been tested for, along with the reporting cut-off level and UM used for reporting the result.

Compound	UKAS Accredited <sup>(1)</sup>	Critical Reporting Limit			
		Reporting cut-off (ng/mg)	SoHT* cut-off (ng/mg)	Estimated Uncertainty of Measurement (± %) <sup>(2)</sup>	
Morphine	Yes	0.2	0.2	17	Opiates
Dihydrocodeine	Yes	0.2	0.2	20	
Codeine	Yes	0.2	0.2	22	
6-monoacetylmorphine (6-MAM)	Yes	0.2	0.2	21	
6-Acetylcodeine	Yes	0.2	n/a	19	
Diacetylmorphine (heroin)	Yes	0.2	0.2	26	
Amphetamine	Yes	0.2	0.2	26	Amphetamines
MDA	Yes	0.2	0.2	33	
Methamphetamine	Yes	0.2	0.2	32	
MDMA	Yes	0.2	0.2	32	
MDEA	Yes	0.2	0.2	32	
MBDB	Yes	0.2	n/a	34	
Diazepam	Yes	0.2	n/a	19	Benzodiazepines
Desmethyldiazepam	Yes	0.2	n/a	20	
Chlordiazepoxide	Yes	0.2	n/a	21	
Temazepam	Yes	0.2	n/a	16	
Flurazepam	Yes	0.2	n/a	20	
Midazolam	Yes	0.2	n/a	30	
Nitrazepam	Yes	0.2	n/a	20	Cocaine
Cocaine	Yes	0.5	0.5	30	
AEME	Yes	0.5	n/a	30	
Benzoylecgonine	Yes	0.05	n/a	38	
Cocaethylene	Yes	0.05	n/a	32	Cannabis
Norcocaine	Yes	0.05	n/a	32	
THC	Yes	0.05	0.05	36	Alcohol
Carboxy-THC	Yes	0.0004	0.0002	40	
Methadone	Yes	0.2	0.2	24	Alcohol
EDDP	Yes	0.2	n/a	27	
Ketamine	Yes	0.2	0.2	17	
Ethyl glucuronide (3 cm)	Yes	0.03	0.03	21	
Ethyl palmitate (6 cm)	Yes	0.35	0.35	27	
Ethyl palmitate (3 cm)	Yes	0.45	0.45	27	

<sup>(1)</sup> UKAS accredited test. The collection of samples, interpretation of results and opinions expressed in this statement are outside the scope of UKAS accreditation.

<sup>(2)</sup> Uncertainty of Measurement at the reporting cut-off has been determined at a 95% confidence interval.