

# Critical Reporting Limits (CT)

## For Hair Drug Laboratory Testing and Reporting of Results

- Hair sample(s) tested for evidence of drug and/or excessive alcohol use (as per customer instructions) by Cellmark or Cellmark's appointed ISO17025 accredited laboratory using techniques known as liquid chromatography with tandem mass spectrometry (LC-MS/MS) and gas chromatography with tandem mass spectrometry (GC-MS/MS). All results will be assessed and reported by Cellmark's toxicologists.
- 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 EtPa) 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 on or after 10 February 2025) which have been established using the Society of Hair Testing (SoHT) recommendations and the results of extensive laboratory validation.
- The Uncertainty of Measurement (UM) at each quality control level is provided in the table below; the UM is not accounted for when reporting results.
- Cellmark reserves the right to amend 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 <sup>(1)</sup>	ISO 17025 Accredited <sup>(2)</sup>	Reporting cut-off (ng/mg) <sup>(3)</sup>	SoHT cut-off (ng/mg)	Estimated UM (±%) <sup>(4)</sup>				
				Low QC (ng/mg)	Low <sup>(5)</sup>	High QC (ng/mg)	High <sup>(5)</sup>	
Amphetamine	Yes	0.2	0.2	0.1	22	1	20	Amphetamine & Methamphetamines
Methamphetamine	Yes	0.2	0.2	0.1	21	1	22	
MBDB	Yes	0.2	0.2	0.1	28	1	25	
MDA	Yes	0.2	0.2	0.1	25	1	24	
MDEA	Yes	0.2	0.2	0.1	23	1	25	
MDMA	Yes	0.2	0.2	0.1	29	1	22	Benzodiazepines
7 aminoflunitrazepam	Yes	0.05	N/A	0.1	24	1	29	
Alprazolam	Yes	0.05	N/A	0.1	31	1	27	
Bromazepam	Yes	0.05	N/A	0.1	33	1	28	
Chlordiazepoxide	Yes	0.05	N/A	0.1	30	1	30	
Diazepam	Yes	0.05	N/A	0.1	27	1	23	
Flunitrazepam	Yes	0.05	N/A	0.1	26	1	24	
Lorazepam	Yes	0.05	N/A	0.1	30	1	28	
Midazolam	Yes	0.05	N/A	0.1	26	1	25	
Nitrazepam	Yes	0.05	N/A	0.1	33	1	32	
Nordiazepam	Yes	0.05	N/A	0.1	32	1	32	
Oxazepam	Yes	0.05	N/A	0.1	31	1	28	
Temazepam	Yes	0.05	N/A	0.1	32	1	30	Cannabinoids
THC	No	0.05	0.05	0.1	30	1.5	27	
CBD	No	0.05	0.05	0.1	32	1.5	32	
CBN	No	0.05	N/A	0.1	28	1.5	32	
Carboxy-THC	No	0.0005	0.0002	0.001	35	0.015	39	Cocaine
AEME	Yes	0.05	N/A	0.1	25	1	24	
Benzoyllecgonine	Yes	0.05	N/A	0.1	31	1	27	
Cocaethylene	Yes	0.05	N/A	0.1	29	1	25	
Cocaine	Yes	0.5	0.5	0.1	31	1	22	
Norcocaine	Yes	0.005	N/A	0.01	24	0.1	26	Opiates
Ketamine	Yes	0.2	0.2	0.1	27	1	25	
Norketamine	Yes	0.005	N/A	0.01	28	0.1	26	
Methadone	Yes	0.2	0.2	0.1	26	1	26	
EDDP	Yes	0.05	N/A	0.01	27	0.1	32	
Oxycodone	Yes	0.1	0.1	0.1	27	1	32	Tramadol
6-monoacetylmorphine	Yes	0.2	0.2	0.1	28	1	30	
Codeine	No	0.2	0.2	0.1	27	1	27	
Dihydrocodeine	Yes	0.2	0.2	0.1	30	1	26	
Heroin	Yes	0.2	0.2	0.1	32	1	26	
Morphine	Yes	0.2	0.2	0.1	32	1	27	Alcohol Markers
Tramadol	Yes	0.2	0.2	0.1	23	1	20	
N-desmethyiltramadol	Yes	0.05	N/A	0.1	25	1	23	
O-desmethyiltramadol	Yes	0.05	N/A	0.1	24	1	26	
EtG (3 or 6cm) <sup>(6)</sup>	Yes	0.03	0.03	0.006	32	0.03	28	
EtPa (3cm) <sup>(6)</sup>	No	0.35	0.35	0.1	32	0.5	12	
EtPa (6cm) <sup>(6)</sup>	No	0.45	0.45	0.1	32	0.5	12	

- All listed analytes were validated in the method(s) using certified reference material (CRM) as named; however, the possibility of closely related substances being present in the sample cannot be completely excluded.
- ISO 17025 accredited test. The collection of samples, interpretation of results and opinions expressed in the statement are outside the scope of Cellmark's UKAS accreditation.
- The estimated uncertainty of measurement has not been accounted for when reporting results.
- Uncertainty of Measurement for low and high quality controls has been determined at a 95% confidence interval.
- Uncertainty of Measurement correct as of January 2025. Please contact Cellmark for up-to-date information.
- For a 3 or 6 cm section of head hair - this is to assess chronic excessive alcohol consumption only.