

Laboratory	Central Forensic Science Laboratory, CFIs Complex, Plot No. 2, Dakshin Marg, Chandigarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Forensic Testing	Issue Date	02.01.2015
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	BALLISTICS			
1.	Firearms/parts thereof/ firearm manufacturing tools	Examination of firearms/parts thereof/firearm manufacturing tools		
		Component check & test firing	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Examination for serviceability/working condition of firearm		
		Test firing	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Examination of firearm, prone to accidental discharge		
		Trigger pull and drop test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Identification of firearm for type, make and model		
		Class characteristic test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Examination of firearm, whether its parts have been tampered with		
	Component check	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative	
	Restoration of erased markings on firearm			

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	Firearms/parts thereof/ firearm manufacturing tools	Component check	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Barrel wash examination		
		Chemical test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Limit of identification: 0.01µg nitrite Limit of dilution: 1 : 500,000 Limit of identification: 0.1µg lead Limit of dilution: 1 : 500,000
2.	Ammunition/part thereof	Examination of ammunition or parts thereof/manufacturing tools		
		Component check & test firing	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Identification of ammunition/ parts thereof for type, make and calibre		
		Class characteristic test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Identification of bullet/slug/parts thereof		
	Class characteristics test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative	
	Identification of shots and pellets			

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	Ammunition/part thereof	Physical test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Identification of wads/wad pieces		
		Physical test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Identification of propellant charge	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Limit of identification: 0.01µg nitrite
		Physical test and chemical test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Limit of dilution: 1 : 500,000
		Bullet/pellets/wads - whether fired or not	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Limit of identification: 0.1µg lead
		Physical test and chemical test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Limit of dilution: 1 : 500,000 Magnification range of SEM: 7 X to 300000 X. Resolution of EDX detector: 142 Ev
3.	Fired bullets/ cartridge cases with the firearm for identification/linkage	Linkage of fired/misfired cartridge		
		Microscopic examination and comparison	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 4 X to 80 X
		Linkage of fired bullet/bullet fragments with rifled firearm		
		Microscopic examination and comparison	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 4 X to 80 X

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	Fired bullets/ cartridge cases with the firearm for identification/linkage	Linkage of fired bullet/bullet fragments with unrifled firearm Microscopic examination and comparison	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Microscopic magnification range: 4 X to 80 X
4.	Primary target/ secondary target/tissue materials	Examination of target involved in shooting Physical test and chemical test	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Limit of identification: 0.01µg nitrite Limit of dilution: 1 : 500,000 Limit of identification: 0.1µg lead Limit of dilution: 1 : 500,000
		Measurement of wound ballistics parameter		
		Test firing on simulated targets	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Wound ballistics studies	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
5.	Fired bullets/ cartridge cases	Automatic examination and comparison of fired bullets/cartridge cases and creation of National Database Image acquisition, signature extraction and correlation	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 0.75 X to 5 X

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6.	Gunshot residue samples	Gunshot residue analysis Scanning electron microscopy-energy dispersive x-ray analysis	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Magnification range of SEM: 7 X to 300000 X. Resolution of EDX detector: 142 eV
II. PHYSICS				
1.	Tyre/Tyre Impression	Examination of Tyre Impression	Working Procedures Manual of Physics, Doc. no. CFSL/CHD/WPM/PHY/ Issue No. 03. Issue date 01.07.2014	Microscopic magnification range: 5.1 X to 512 X Upto 200 mm Upto 30 cm
2.	Footwear/ Footwear Impression	Examination of Footwear Impressions Preparation of Evidence	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
		Footwear Impression Comparison	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Qualitative
3.	Foot Impression	Examination of Foot Impression	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X Upto 200 mm Upto 30 cm
4.	Glass fragments	Glass Fracture Examination	CFSL/CHD/WPM/BAL Issue No. 03. Issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X

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	Glass fragments	Glass Fragment Comparison Visual examination AND/OR Physical measurements AND/OR	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014 CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X Upto 200 mm Upto 20 mm Upto 30 cm
		Physical matching AND/OR	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X
		Density comparison by density gradient tubes AND/OR	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	1.52 g/cc to 2.89 g/cc
		Refractive index	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	1.46 to 1.56
5.	Toolmark/Tool	Examination of Toolmarks Grouping and Comparison of Toolmarks	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X Upto 200 mm Upto 20 mm
6.	Paint/Paint chips/ Paint stains	Forensic Paint Examination Macroscopic/Microscopic Examination AND/OR Physical matching AND/OR	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014 CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X Microscopic magnification range: 5.1 X to 512 X

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	Paint/Paint chips/ Paint stains	Analysis of paint layers AND/OR	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X
		Solvent Tests	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X 5.2
7.	Soil	Test methods for forensic comparison of soil Visual/Microscopic examination and comparison AND/OR	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X
		Micro chemical examination AND/OR	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Ignition loss AND/OR	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	100 mg
		Particle size distribution analysis AND/OR	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X
		Density gradient analysis	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
8.	Cement	Bromoform test	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Chemical Tests Insoluble Residue	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		SiO ₂	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative

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	Cement	CaO	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Ferric Oxide	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Alumina	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Ignition loss	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	0.% to 10%
		Physical Tests Standard Consistency	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Initial Setting Time	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Final Setting Time	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
9.	Mortar	Test method for determination of the ratio of cement and sand in mortar	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
10.	Concrete	Test method for determination of ratio of cement, sand and aggregate in concrete	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative

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11.	Cloth/ fibres/ cords/ ropes	Test methods for forensic comparison of cloth/fibres/ cords/ropes Visual/Microscopic examination and comparison	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X
12.	Cables and wires	Test methods for forensic comparison of cables and wires Visual/Microscopic examination and comparison AND/OR Dimensional analysis AND/OR Electrical resistance test	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014 CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014 CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 X Upto 200 mm Upto 20 mm Upto 30 cm 1999 $\mu \Omega$ -19.99 k Ω
III.	SPEAKER IDENTIFICATION AND AUDIO/VIDEO ANALYSIS			
1.	Voice/speech sample	Auditory and spectrographic analysis of speech sample for speaker identification – acoustic and phonetic studies	Working Procedures Manual of Speaker Identification and Audio/Video Analysis, Doc. No. CFSL/CHD/AV/ Issue No. 03 Issue date 01.07.2014	Qualitative
		Preparation of direct and enhanced copy of original speech sample by dubbing using dual cassette recorder (Hi-Fi system)	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Preparation of direct and enhanced copy of original speech sample by A/D conversion followed by filtering and D/A conversion	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative

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2.	Audio/video recordings	Test methods for forensic examination of audio and video recording Visual/Microscopic examination	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Microscopic magnification range: 5.1 X to 512 x
		Critical listening, waveform analysis and spectrographic analysis for audio recording and audio track of video recording	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Audio signal enhancement and noise reduction	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Frame to frame analysis of video recording (Non Linear editing system)	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Sequence analysis of video frames	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Instrumental analysis of video recording using waveform monitor, and vectroscope (VM-700T)	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Video signal enhancement	CFSL/CHD/WPM/BAL Issue No. 03.issue date 19.08.2014	Qualitative
		Recognition, identification, verification, comparison of object(s) in video image(s)		Qualitative

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IV. COMPUTER FORENSICS				
1.	Digital storage media comprising Computer memory devices such as Hard disk, CD, Floppy disk and other memory devices	Forensics imaging and analysis of data stored on digital storage media	Doc. No. CFSL/CHD/CF/ Issue No. 03 Date of Issue 01.07.2014	Qualitative
2.	Cell phones and associated electronic media	Forensics imaging and analysis of data stored on cell phones and associated electronic media	Doc. No. CFSL/CHD/CPF Issue no 02 Issue date 01.07.2014	Qualitative
V. BIOLOGY & SEROLOGY				
1.	Blood/blood stains	Benzidine/Tetra-methyl benzidine test/Leiuco-malachite green test	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Sensitivity of the reaction with Benzidine is approximately 1: 200,000
		Takayama test/Teichmann test	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
		Precipitin tube Ouchterlony double diffusion	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
		ABO grouping by absorption elution immunological technique	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative

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2.	Semen and seminal stains	Acid phosphate test/Florence crystal test/Barberios crystal test	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
		Staining and microscopic examination for sperms/cross over electrophoresis for P30 antigen	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Microscopic magnification range: 40 X to 1000 X
		ABO grouping by absorption elution immunological technique	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
3.	Saliva/salivary stains	Starch iodine test for amylase	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
		ABO grouping by absorption elution immunological technique	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
4.	Urine/urinary stains	Creatinine test	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
		Odour test	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
5.	Hair	Morphological and microscopic technique for human origin and individualization	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Microscopic magnification range: 40 X to 1000 X

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6.	Bones, skull, teeth and their fragments	Morphological examination for human origin	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
		Super-imposition technique	Doc. No.CFSL/CHD/WPM/BIO Issue No. 02 Issue date 20.07.2014	Qualitative
VI. DNA FINGERPRINTING				
1.	Muscle tissue, viscera, bone & teeth (without clinical filling), foetal tissue and bones, hair (with root), physiological human body fluids including blood, blood stains, semen, semen stains, saliva, salivary stains and clippings, old archival hair, bones and teeth	DNA fingerprinting based on autosomal STRs and Y-STRs. Human identity testing for forensic specimen, paternity disputes, establishing the familial relationship, sexual assault and homicide cases, establishing the paternity of foetal remains	Working Procedure Manual of DNA Profiling, Doc. No. CFSL/CHD/WPM/DNA Issue No. 03 Issue date 20.07.2014	
		Sample preparation	CFSL/CHD/WPM/DNA Issue No. 03 Issue date 20.07.2014	1 nanogram of Human Genomic DNA
		DNA extraction	CFSL/CHD/WPM/DNA Issue No. 03 Issue date 20.07.2014	1 nanogram of Human Genomic DNA
		Quantitation of Human DNA	CFSL/CHD/WPM/DNA/, Issue No. 03 Issue date 20.07.2014	1 nanogram of Human Genomic DNA
		PCR amplification	CFSL/CHD/WPM/DNA/, Issue No. 03 Issue date 20.07.2014	1 nanogram of Human Genomic DNA

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	Muscle tissue, viscera, bone & teeth (without clinical filling), foetal tissue and bones, hair (with root), physiological human body fluids including blood, blood stains, semen, semen stains, saliva, salivary stains and clippings, old archival hair, bones and teeth	Gel electrophoresis	CFSL/CHD/WPM/DNA/, Issue No. 03 Issue date 20.07.2014	1 nanogram of Human Genomic DNA
		Capillary electrophoresis	CFSL/CHD/WPM/DNA/, Issue No. 03 Issue date 20.07.2014	1 nanogram of Human Genomic DNA
		Genotyping (Autosomal STRs and Y-STRs)	CFSL/CHD/WPM/DNA/, Issue No. 03 Issue date 20.07.2014	1 nanogram of Human Genomic DNA
		Interpretation and reporting	CFSL/CHD/WPM/DNA/, Issue No. 03 Issue date 20.07.2014	1 nanogram of Human Genomic DNA

VIII CHEMISTRY

1. Liquor Samples	Identification of alcoholic contents (ethyl alcohol) in liquor samples		
	Colour test by Visual examination	Doc. No. CFSL/CHD/WPM/CHE Issue No.02 Date of Issue 11.8.2014	Qualitative
	Alcohol identification by Iodoform & dichromate tests	Doc. No. CFSL/CHD/WPM/CHE Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 µg
	Test for alcoholic content by Sp. gravity determination	Doc. No. CFSL/CHD/WPM/CHE Issue No.02 Date of Issue 11.8.2014	Range: 1 – 99 volume %

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	Liquor Samples	Test for total acid by Titration method	Doc. No. CFSL/CHD/WPM/CHE Issue No.02 Date of Issue 11.8.2014	No accepted range/limit of detection standard exists.
		Test for volatile acid by Titration method	Doc. No. CFSL/CHD/WPM/CHE Issue No.02 Date of Issue 11.8.2014	No accepted range or LOD standard exists.
		Test for esters by Hydrolysis and titration	Doc. No. CFSL/CHD/WPM/CHE Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 µg
		Detection of Iron Potassium Ferrocyanide test	Doc. No. CFSL/CHD/WPM/CHE Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 µg
		Detection of copper by Potassium Ferrocyanide test	Doc. No. CFSL/CHD/WPM/CHE, Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 µg
		Detection of furfural by Aniline test	Doc. No. CFSL/CHD/WPM/CHE, Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 µg
		Detection of denaturant (methanol) by Chromotropic acid test	Doc. No. CFSL/CHD/WPM/CHE, Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 µg
2.	Phenolphthalein dye and sodium carbonate in hand wash/ pocket wash/ currency notes	Detection of dyes and sodium & carbonate ions used in trap cases		
		Colour test for sodium and carbonate ions	Doc. No. CFSL/CHD/WPM/CHE, Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 µg
		Extraction and Thin Layer Chromatography for Phenolphthalein	Doc. No. CFSL/CHD/WPM/CHE, Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 µg

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		Visible Spectrophotometry for coloured solution	Doc. No. CFSL/CHD/WPM/CHE, Issue No.02 Date of Issue 11.8.2014	Spectrophotometry wavelength range is 400-700 nm.
3.	Residues of Gasoline/kerosene / diesel/ petrol/ alcohols/ ether	Detection of hydrocarbon/alcohol/ ether in arson/fuel exhibits Gas Chromatography (qualitative detection)	Doc. No. CFSL/CHD/WPM/CHE, Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 ng
		HCl, HNO ₃ , H ₂ SO ₄ in crime exhibits	Detection of corrosive chemicals in acid throwing cases	
		Chemical tests (qualitative detection)	Doc. No. CFSL/CHD/WPM/CHE, Issue No.02 Date of Issue 11.8.2014	Limit of detection: 1 µg
VIII NARCOTICS				
1.	Narcotic and psychotropic substances (solids, semi-solids/liquids and plant material) – opium/crude-opium, morphine/opium alkaloids, heroin, cannabis, cocaine, methaqualone/ mecloqualone, amphetamine, barbiturate derivatives, benzodiazepine derivatives,	Examination of opium/crude-opium, morphine/opium alkaloids, heroin, cannabis, cocaine, methaqualone/ mecloqualone, amphetamine, barbiturate derivatives, benzodiazepine derivatives, peyotecactus/ mescaline, psilocybe mushroom/psilocybin, lysregide (LSD)		
		Colour tests	Doc. No. CFSL/CHD/WPM/NAR/ Issue No. 02 Issue Date : 11.08.2014	Limit of detection: 1 µg
		Thin layer chromatography	Doc. No. CFSL/CHD/WPM/NAR/ Issue No. 02 Issue Date : 11.08.2014	Limit of detection: 1 µg

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	peyotecactus/ mescaline, psilocybe mushroom/ psilocybin and lysregide (LSD)in street samples/manufact ured drugs	Gas chromatography-Mass spectrometry and/or	Doc. No. CFSL/CHD/WPM/ NAR/ Issue No. 02 Issue Date : 11.08.2014	Depending on the dilution factor and ionisation method, an extract with 0.1 to 100 ng. of each component may be needed to inject a sufficient amount
		Fourier transform infrared spectrometry	Doc. No. CFSL/CHD/WPM/ NAR/ Issue No. 02 Issue Date : 11.08.2014	The spectrum encompasses radiation of wavenumber ranging from 450 to 4500 cm ⁻¹ . Routine limit of detection is 2%; under favourable conditions, it is 0.01%.
		Gas chromatography (quantitative) or	Doc. No. CFSL/CHD/WPM/ NAR/ Issue No. 02 Issue Date : 11.08.2014	Limit of detection: 1 ng
		High performance liquid chromatography with UV detector (quantitative)	Doc. No. CFSL/CHD/WPM/ NAR/ Issue No. 02 Issue Date : 11.08.2014	Depends upon sample matrix and the separation system used. Typical limit of detection is 1 ng
IX.	EXPLOSIVE			
1.	Primary high explosives, secondary high explosives/ low explosives/ pyrotechniques in defused and post blast debris/ residues	Extraction of explosive substances from unexploded formulations		
		Methods of extraction of explosive substances from unexploded formulations	Doc. No. CFSL/CHD/WPM/EX Issue No.02 Issue date 21.07.2014	Qualitative

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Pyrotechniques constituents in crackers	Extraction of explosive substances from blasted samples Methods of extraction of explosive substances from blasted samples	Doc. No. CFSL/CHD/WPM/EX Issue No.02 Issue date 21.07.2014	Qualitative
		Identification of low explosives/ pyrotechniques by detecting presence of anions and cations Colour tests	Doc. No. CFSL/CHD/WPM/EX Issue No.02 Issue date 21.07.2014	Sensitivity: 0.05 to 4 µg Concentration limit ranges between 1 : 10000 to 1 : 1000000
2.	RDX/TNT/PETN/ CE in seized Explosive materials	Identification of primary high explosives Colour tests	Doc. No. CFSL/CHD/WPM/EX Issue No.02 Issue date 21.07.2014	Limit of detection: 1 µg
		Identification/estimation of secondary high explosives Colour tests	Doc. No. CFSL/CHD/WPM/EX Issue No.02 Issue date 21.07.2014	Limit of detection: 1 µg
		Thin Layer Chromatography	Doc. No. CFSL/CHD/WPM/EX Issue No.02 Issue date 21.07.2014	Limit of detection: 1 µg
		IR Spectrophotometry	Doc. No. CFSL/CHD/WPM/EX Issue No.02 Issue date 21.07.2014	Routine Limit of detection is 2%; under most favourable conditions, it is 0.01%. Spectrum encompasses radiation of wave number ranging from 450 to 4500 cm ⁻¹

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	RDX/TNT/PETN/ CE in seized Explosive materials	Gas Chromatography-Mass Spectrometry	Doc. No. CFSL/CHD/WPM/EX Issue No.02 Issue date 21.07.2014	Depending on the dilution factor and ionisation method, an extract with 0.1 ng to 100 ng. of each component may be need to be injected.
		High performance liquid chromatography with absorbance detector (quantitative)	Doc. No. CFSL/CHD/WPM/EX Issue No.02 Issue date 21.07.2014	Limit of detection depends upon sample matrix and the separation system used. Typical limit of detection is 1 ng.
X.	TOXICOLOGY			
1.	Volatile Poisons in biological / non-biological matrices	Detection of phosphine Ammonium molybdate test	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
		Detection of Ethyl alcohol Dichromate test	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
		Kozelka & Hine method for quantitative analysis AND/OR	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	No accepted range/ limit of detection standard exists
		Gas Chromatographic analysis for quantitative estimation	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 ng
		Detection of Methyl alcohol Chromotropic acid test	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Metallic poisons in biological / non-biological matrices	Detection of arsenic Reinsch's Test	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 10 µg
		Detection of mercury Reinsch's Test	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 10 µg
3.	Insecticides in biological / non-biological matrices	Detection of Organo phosphorous insecticide		
		Thin Layer Chromatographic Analysis AND/OR	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
		GC-MS Analysis	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
		Detection of organochloro insecticide		
		Thin Layer Chromatographic Analysis AND/OR	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
		GC-MS Analysis	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
		Detection of carbamate insecticide		
		Thin Layer Chromatographic Analysis AND/OR	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
GC-MS Analysis	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg		

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
4.	Non-volatile organic poisons in biological/ non-biological matrices	Detection of acidic drugs		
		Thin Layer Chromatographic Analysis AND/OR	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
		GC-MS Analysis	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
		Detection of basic drugs		
		Thin Layer Chromatographic Analysis AND/ OR	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg
		GC-MS Analysis	Doc. No. CFSL/CHD/WPM/TOX/, Issue No. 3, Issue date 21.7.2014	Limit of detection: 1 µg

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