

Laboratory CSIR-Indian Institute of Chemical Technology, Uppal Road, Tarnaka, Hyderabad, Telangana

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-8052 (in lieu of T-0990)

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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**CHEMICAL TESTING**

I.	WARFARE CHEMICALS			
1.	Soil/solid materials, Water/aqueous samples, Organic liquids, Polymers	Qualitative analysis for chemicals listed below:	ROP for analysis in the verification of chemical disarmament, 2017 Edition, University of Helsinki Adopted by OPCW	Presence or Absence of chemicals listed below: 10 µg/ml
<b>Schedule- 1</b>				
<b>A. Toxic Chemicals</b>				
1. O-Alkyl ( $\leq C_{10}$ including cycloalkyl) alkyl (Me, Et, n-Pr or i-Pr)-phosphonofluoridates				
2. O-Alkyl ( $\leq C_{10}$ including cycloalkyl)N,N-dialkyl (Me, Et, n-Pr or i-Pr)-phosphoramidocyanidates				
3. O-Alkyl (H or $\leq C_{10}$ including cycloalkyl) S-2-dialkyl (Me, Et, n-Pr or i-Pr)- aminoethyl alkyl (Me, Et, n-Pr or i-Pr) phosphonothiolates and corresponding alkylated or protonated salts				
4. Sulfur mustards				
i)	2-Chloroethylchloromethylsulfide			
ii)	Bis(2-chloroethyl)sulfide			
iii)	Bis(2-chloroethylthio)methane			
iv)	1,2-Bis(2-chloroethylthio)ethane			
v)	1,3-Bis(2-chloroethylthio)-n-propane			
vi)	1,4-Bis(2-chloroethylthio)-n-butane			
vii)	1,5-Bis(2-chloroethylthio)-n-pentane			
viii)	Bis(2-chloroethylthiomethyl)ether			
ix)	Bis(2-chloroethylthioethyl)ether			
5. Lewisites				
i)	2-Chlorovinylchloroarsine			
ii)	Bis(2-chlorovinyl)chloroarsine			
iii)	Tris(2-chlorovinyl)arsine			
6. Nitrogen mustards				
i)	Bis(2-chloroethyl)ethylamine			
ii)	Bis(2-chloroethyl)methylamine			
iii)	Tris(2-chloroethyl)amine			

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7.	Saxitoxin			
8.	Ricin			
	<b>B. Precursors</b>			
6.	Alkyl (Me, Et, n-Pr, i-Pr) phosphonyldifluorides			
7.	O-Alkyl (H or or $\leq C_{10}$ including cycloalkyl) O-2-dialkyl (Me, Et, n-Pr, i-Pr)-aminoethyl alkyl (Me, Et, n-Pr, i-Pr) phosphonites and corresponding alkylated or protonated salts			
8.	Chlorosarin (O-isopropyl methyl phosphonochloridate)			
9.	Chlorosoman (O-pinacolyl methyl phosphonochloridate)			
	<b>Schedule- 2</b>			
	<b>A. Toxic Chemicals</b>			
1.	Amiton: O,O-Diethyl S-[2-(diethylamino)ethyl]phosphorothiolate and corresponding alkylated or protonated salts			
2.	PFIB: 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene			
3.	3-Quinuclidinyl benzilate (BZ)			
	<b>B. Precursors</b>			
4.	Chemicals, except for those listed in Schedule 1, containing a phosphorus atom to which is bonded one methyl, ethyl or propyl (normal or iso) group but not further carbon atoms e.g. Methylphosphonyl dichloride Dimethyl methylphosphonate Exemption: Fonofos: O-Ethyl S-phenyl ethylphosphonothiolothionate			
5.	N,N-dialkyl (Me, Et, n-Pr, i-Pr) phosphoramidic dihalides			
6.	Dialkyl (Me, Et, n-Pr, i-Pr) N,N-dialkyl (Me, Et, n-Pr, i-Pr)- phosphoramidates			
7.	Arsenic trichloride			
8.	2,2-Diphenyl-2-hydroxyacetic acid.			
9.	Quinuclidin-3-ol			
10.	N,N-dialkyl (Me, Et, n-Pr, i-Pr) aminoethyl-2-chlorides and corresponding protonated salts			
11.	N,N,-dialkyl (Me, Et, n-Pr, i-Pr) aminoethane-2-ols and corresponding protonated salts Exemptions: N,N-Dimethylaminoethanol and corresponding protonated salts N,N-Diethylaminoethanol and corresponding protonated salts			
12.	N,N-dialkyl (Me, Et, n-Pr, i-Pr) aminoethane-2-thiols and corresponding protonated salts			
13.	Thiodiglycol: Bis(2-hydroxyethyl)sulfide			
14.	Pinacolyl alcohol: 3,3-Dimethylbutan-2-ol			

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<b>Schedule 3</b>				
<b>A. Toxic Chemicals</b>				
1. Phosgene: Carbonyl dichloride				
2. Cyanogen chloride				
3. Hydrogen cyanide				
4. Chloropicrin: Trichloronitromethane				
<b>B. Precursors</b>				
1. Phosphorus oxychloride				
2. Phosphorus trichloride				
3. Phosphorus pentachloride				
4. Trimethyl phosphate				
5. Triethyl phosphate				
6. Dimethyl phosphate				
7. Diethyl phosphate				
8. Sulfur monochloride				
9. Sulfur dichloride				
10. Thionyl chloride				
11. Ethyldiethanolamine				
12. Methyldiethanolamine				
Triethanolamine				
<b>II.</b>	<b>FOOD AND AGRICULTURAL PRODUCTS</b>			
<b>1.</b>	<b>Oils and Fats</b>	Estimation of Tocols		
		α-Tocopherol	AOCS Ce 8-89	10 mg/L to 50000 mg/L
		γ-Tocopherol		
		δ-Tocopherol		
		α-Tocotrienol		
		γ-Tocotrienol		
		δ-Tocotrienol		
		Acid Value	AOCS Cd 3d-63 (CSIR-IICT/CLST/SP 1, Ver. 01, Issue date: 03-04-2018)	0.01 to 200

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		Iodine Value	AOCS Cd 1-25 (CSIR-IICT/CLST/SP 2, Ver. 01, Issue date: 03-04-2018)	2 to 200
		Saponification Value	AOCS Cd 3-25 (CSIR-IICT/CLST/SP 3, Ver. 01, Issue date: 03-04-2018)	150 to 300
		Unsaponifiable Matter	AOCS Ca 6a-40 (CSIR-IICT/CLST/SP 4, Ver. 01, Issue date: 03-04-2018)	0.1 % to 6.0 %
		Free Fatty Acid	AOCS Ca 5a-40 (CSIR-IICT/CLST/SP 5, Ver. 01, Issue date: 03-04-2018)	0.01 % to 100 %
		Moisture	AOCS Ca 2e-84 (CSIR-IICT/CLST/SP 6, Ver. 01, Issue date: 03-04-2018)	0.01 % to 100 %
		Moisture & Volatile Impurities	AOCS Ca 2c-25 (CSIR-IICT/CLST/SP 7, Ver. 01, Issue date: 03-04-2018)	0.01 % to 100 %
		Cloud Point	AOCS Cc 6-25 (CSIR-IICT/CLST/SP 8, Ver. 01, Issue date: 03-04-2018)	10°C to 20 °C
		Hexane	AOCS Ca 3b-87 (CSIR-IICT/CLST/SP 9, Ver. 01, Issue date: 03-04-2018)	5 mg/L to 1500 mg/L

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		Phosphorous Estimation	IUPAC Official Method No. 2.421 (CSIR-IICT/CLST/SP 10, Ver. 01, Issue date: 03-04-2018)	0.1 mg/L to 500 mg/L
		Test for presence of Mineral Oil	FSSAI Manual of Methods of Analysis of Foods (Oils & Fats) (CSIR-IICT/CLST/SP 11, Ver. 01, Issue date: 03-04-2018)	Present/ Absent
		Test for presence of Argemone Oil	FSSAI Manual of Methods of Analysis of Foods (Oils & Fats) (CSIR-IICT/CLST/SP 12, Ver. 01, Issue date: 03-04-2018)	Present/Absent
		Test for presence of Castor Oil	IS 548 (Part II) (CSIR-IICT/CLST/SP 13, Ver. 01, Issue date: 03-04-2018)	Present/Absent
		Test for presence of Sesame Oil (Bouldine Test)	IS 548 (Part II) (CSIR-IICT/CLST/SP 14, Ver. 01, Issue date: 03-04-2018)	Present/Absent
		Test for presence of Cottonseed Oil (Halphen Test)	IS 548 (Part II) (CSIR-IICT/CLST/SP 15)	Present/Absent
		$\gamma$ -Oryzanol content	Codex Alimentarius; Codex Stan 210-1999 Adopted 1999 and Revised 2015 (CSIR-IICT/CLST/SP 16, Ver. 01, Issue date: 03-04-2018)	0.1 % to 4 %

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		Fatty acid composition	In-House Method	0.2 % to 100 (% Area)
		i) Saturated Fatty Acids (SFA)	Based on	
		Caproic acid (C6:0)	AOCS (2009) Ce 1-62	
		Caprylic acid (C8:0)	(CSIR-IICT/CLST/SP 17,	
		Capric acid (C10:0)	Ver. 01, Issue date:	
		Undecanoic acid (C11:0)	03-04-2018)	
		Lauric acid (C12:0)		
		Tridecanoic acid (C13:0)		
		Myristic acid (C14:0)		
		Pentadecanoic acid (C15:0)		
		Palmitic acid (C16:0)		
		Heptadecanoic acid (C17:0)		
		Stearic acid (C18:0)		
		Arachidic acid (C20:0)		
		Behenic acid (C22:0)		
		Tricosylic acid (23:0)		
		Lignoceric acid (C24:0)		
		ii) Mono Unsaturated Fatty Acids (MUFA)	In-House Method	0.2 % to 100 (% Area)
		Myristoleic acid (14:1)	Based on	
		Pentadecenoic acid (15:1)	AOCS (2009) Ce 1-62	
		Palmitoleic acid (16:1)	(CSIR-IICT/CLST/SP 17,	
		Heptadecenoic acid (C17:1)	Ver. 01, Issue date:	
		Oleic acid (C18:1)	03-04-2018)	
		Elaidic acid (18:1)		
		Eicosenoic acid (C20:1)		
		Erucic acid (C22:1)		
		Nervonic acid (C24:1)		
		iii) Poly Unsaturated Fatty Acids (PUFA)		

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		Linolelaidic acid (18:2)		
		Alpha-Linolenic acid (18:3)		
		Gamma-linolenic acid (18:3)		
		Stearidonic acid (18:4)		
		Eicosadienoic acid (C20:2)		
		Dihomo-γ-linolenic acid (20:3)		
		Arachidonic acid (20:4)		
		Eicosapentanoic acid (C20:5)		
		Docosadienoic acid (C22:2)		
		Docosahexanoic acid (C22:6)		
		Trans Fat Content	AOCS Cd 14c-94 (CSIR-IICT/CLST/SP 18, Ver. 01, Issue date: 03-04-2018)	0.2 % to 5 (% Area)
		Refractive Index	IS 548 (Part II) (CSIR-IICT/CLST/SP 20, Ver. 01, Issue date: 03-04-2018)	1.2600 to 1.7000
		Slip Melting Point	AOCS Cc 3b-92; (CSIR-IICT/CLST/SP 21, Ver. 01, Issue date: 03-04-2018)	10°C to 55 °C

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III.	<b>DRUGS AND PHARMACEUTICALS</b>			
1.	<b>Active Pharmaceutical Ingredients</b>	C,H,N,S,O analysis	CSIR-IICT/ANA/Discovery/SP5, Ver. 01, Issue date: 03-04-2018	CHNSO (Qualitative)
		<sup>1</sup> H, <sup>13</sup> C, <sup>15</sup> N, <sup>31</sup> P, <sup>19</sup> F - 1D and 2D correlation spectra	CSIR-IICT/ANA/NMR/SP1, Ver. 01, Issue date: 03-04-2018	Qualitative
		EI/ESI mass spectral characterization	CSIR-IICT/ANA/CMS/SP25, Ver. 01, Issue date: 03-04-2018 CSIR-IICT/ANA/CMS/SP26, Ver. 01, Issue date: 03-04-2018	Qualitative
		Trace Element analysis	USP-233 & 232, 2018 (USP 41) Procedures In-house method reference: CSIR-IICT/ANA/Discovery/SP4, Ver. 01, Issue date: 03-04-2018	50 ng/mL to 1000 ng/mL
		Ag		
		Al		
		As		
		Au		
		B		
		Ba		
		Ca		
		Cd		
		Co		
		Cr		
		Cu		
		Fe		
		Hg		
		K		
		Ir		
		Li		
		Mg		
		Mn		



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		Mo		
		Na		
		Ni		
		Os		
		Pb		
		Pd		
		Pt		
		Rh		
		Ru		
		Sb		
		Se		
		Sn		
		Tl		
		V		
		W		
		Zn		
<b>IV.</b>	<b>WATER</b>			
<b>1.</b>	<b>Drinking Water</b>	Color	IS 3025 (Part 4)	Qualitative
		Odor	IS 3025 (Part 5)	Qualitative
		Taste	IS 3025 (Part 8)	Qualitative
		Turbidity	IS 3025 (Part 10)	Upto 500 FAU
		Total dissolved solids	IS 3025 (Part 16)	2 mg/L to 200 mg/L
		pH	IS 3025 (Part 11) Electrometric	Upto 14
		Fluoride	In-house method CSIR-IICT/PETT/ MSL/SP2, Ver. 01, Issue date: 03-04-2018	0.1 mg/L to 100 mg/L