

1. Technical Specification with Trial Directives of Multi Gas Detector (FPD Based)

SN	Specification	Trial Directives
1.	Chemical Agent detector based on Flame spectrometry detection principle with minimum interferences.	Firm to submit OEM certificate on GeM along with Bid documents
2.	Type: Handheld	BOO to physically check this parameter
3.	Principle firm manufactures must have IPR on complete instrument.	Firm to submit OEM certificate on GeM along with Bid documents
4.	Instrument should be capable of sensing: - a. All nerve agents including G and V agents. b. Blister agents including Lewisites, HD, HL. c. Blood and vomiting agents. d. Capability to detect all CW agents listed in Schedule 1,2,3 of the OPCW list, including more than 96% of the 54 precursors agents listed on the Precursors list, as determined by OPCW. (Schedule 1, 2 & 3 of OPCW are attached as Appendix 'A', 'B' & 'C' respectively) e. Capability to detect NTA's and impure/imperfect formulations of the above- mentioned agents, while in a state of vapor or aerosolized solid/liquid. f. In addition, it should also detect (60%) of the common Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs) as in the NATO International Task Force ITF-40 standard. g. Capable of Simultaneous detection of CW agents.	1. For Pt. 4a, 4b, 4c: Firm to submit Lab test Report from International Lab/Govt/NABL accredited lab/OEM Factory Acceptance Test Report. 2. For pt. 4d, 4e, 4f, 4g: Firm to submit OEM certificate Above documents to be submitted by the firm on GeM along with Bid documents
5.	Detection Sensitivities a) Nerve Agents & VX: 0.05 mg/m³ (GA-Tabun, GB-Sarin, GD-Soman, VX) b) Blister Agents: 0.5 mg/m³ (HD) & and 1.5 mg/m³ (Lewisite) c) Blood Agents: 0.5 mg/m³ (H, HD, HLJ) d) Chocking Agents: - 10mg/m³	Firm to submit Lab test Report from International Lab/Govt/NABL accredited lab/OEM Factory Acceptance Test Report (Firm to submit above documents on GeM along bid documents)
6.	Response time must be < 60 seconds at the above stated concentration.	Firm to submit Lab test Report from International Lab/Govt/NABL accredited lab/OEM Factory Acceptance Test Report (Firm to submit above documents on GeM along bid documents)
7.	Recovery time must be < 03 Minutes at the above stated concentration.	Firm to submit Lab test Report from International Lab/Govt/NABL accredited lab/OEM Factory Acceptance Test Report

		(Firm to submit above documents on GeM along bid documents)
8.	It should be capable of detecting vapour samples from agents present in the atmosphere in the form of solid, liquid, vapors or aerosol (with scraper accessory for solid sample collection)	BOO to physically verify the accessory in the kit.
9.	Time to be ready: < 05 minutes after switch on.	BOO to physically verify the parameter.
10.	Must be capable of providing visual alarms for agent class (Nerve, Blister, Blood agents).	BOO to physically verify visual alarms with simulants.
11.	Must be capable to provide audio and visual alarm with LCD/LED indications for increasing concentrations with lowest LED indication at the concentration level defined in Point 05.	BOO to physically verify the parameter.
12.	The chemical detector shall be capable of having workable memory/data logging and has provision for data transfer/networking with communication links such as RS-232 / RS-422.	Firm to submit OEM certificate on GeM along with Bid documents
13.	The chemical agent detector must be compatible to store the data equivalent to minimum 07 days.	Firm to submit OEM certificate on GeM along with Bid documents
14.	Instrument not to give false alarm in continuous operation in normal Indian environment.	Firm to submit OEM certificate on GeM along with Bid documents
15.	Interferons: - Instrument should be able to detect CW agents in the presence of common interferons like screening smokes, smoke of wood, paper plastic, PVC, Incendiary gases, from explosives, engine exhaust and fuel.	Firm to submit OEM certificate on GeM along with Bid documents
16.	Storage Temperature -30 to +70 degree C	Firm to submit OEM certificate on GeM along with Bid documents
17.	Operating Temperature -20 to +50 degree C	Firm to submit OEM certificate on GeM along with Bid documents
18.	IP Rating: IP54 or better.	Firm to submit OEM certificate on GeM along with Bid documents
19.	Temperature and environmental test must meet JSS55555/ MIL-461E/810F or other equivalent standards for the instrument in semi protected conditions.	Firm to submit OEM certificate on GeM along with Bid documents
20.	Input power must be 6 to 12 V DC battery rechargeable.	Firm to submit OEM certificate on GeM along with Bid documents
21.	Instrument must able to run for minimum 06 hrs continuously with a single battery unit.	Firm to submit OEM certificate on GeM along with Bid documents
22.	The weight of instrument must< 2.5 Kgs (with H2 Storage Device & Battery)	BOO to physically verify the parameter.
23.	Maintenance must be modular, with fitment of consumable from outside, without opening complete instrument enclosure.	BOO to physically verify the parameter.
24.	Working life minimum 10 years.	Firm to submit OEM certificate on GeM along with Bid documents

25.	Maintenance must be minimum in specified storage conditions (As mentioned in storage temperature)	Firm to submit OEM certificate on GeM along with Bid documents
26.	Spare part list, Instructions for user and any other relevant documents must be provided.	BOO to physically check the requirements
27.	Must provide warranty of at least 01 year and maintenance support for 10 Years.	Firm to submit OEM certificate on GeM along with Bid documents
28.	Must provide conformity certificate by OEM /Authorized lab to support the compliance of all above technical specifications statement wherever applicable.	Firm to submit OEM certificate on GeM along with Bid documents
29.	Accessories- Simulant accessory (01 no.) to be provided with equipment for training purpose.	BOO to physically verify the parameter.

2. Technical Specification with Trial Directives of Multi Gas Detector (FTIR Based)

SN	Specification	Trial Directives
1.	Fourier Transform Infrared spectroscopy (FTIR) detection principle-based detector able to accurately identify more than 5,000 gases and vapors including TICS, CWAS, VOCs, WMDs, Industrial gases, Solvents, and Hydrocarbons with minimum interferences. Spectral Range 650-4000 cm⁻¹ Resolution- 10 cm⁻¹ or better Type of optics- Mid-infrared Spectroscopy	
2.	Indicate and display the name: Detector should be able to indicate and display the names of up to six component chemical gases/vapors simultaneously. The device should search the entire library in real time without need for external computer.	BOO to verify the parameter through OEM certificate.
3.	The instrument must be handheld and capable of sensing including: - a) All nerve agents including V agents.	BOO to verify through lab test report from Govt/ NABL accredited lab/ International Lab

b) Blister agents including Lewisite.

c) Blood agents.

d) Choking agents

and more than 5,000 gases and vapors including
TICS, CWAS, VOCs, WMDs, Industrial gases,
Solvents, and Hydrocarbons such as:

CWAs (Vapor phase)

- Cyanogen chloride
- GF (cyclo-Sarin) Chemical Warfare Nerve Agent,
- GA (Tabun) Chemical Warfare Nerve Agent
- GD (Soman) Chemical Warfare Nerve Agent
- GB (Sarin) Chemical Warfare Nerve Agent
- HD (Sulfur Mustard) Chemical Warfare Blister Agent
- L (Lewisite) Chemical Warfare Blister Agent

Acutely Toxic Chemicals, including:

Sulfur dioxide, Boron trifluoride, Hydrogen sulfide, Phosphorous oxychloride, Hydrobromic acid 48%, Nitrogen dioxide (and N₂O₄ or Dinitrogen tetroxide) Acrolein, Acrylonitrile, Allyl alcohol (Vapor Phase) Dimethylamine solution, Diborane, Hydrazine, GF (cyclo-Sarin) Chemical Warfare Nerve Agent, Formaldehyde solution, 36.5-38.0 wt.% in H₂O, Paraformaldehyde, HD (Sulfur Mustard) Chemical Warfare Blister Agent, Cyanogen chloride (Vapor Phase) Parathion, Methylhydrazine, Methylisocyanate, Carbon monoxide, Bromo methane, Methyl amine, Hydrogen cyanide, Methyl mercaptan, Carbon disulfide, Ethylene oxide, Phosgene (Carbonyl chloride) (Vapor Phase) (+/-)- Propylene oxide, Muriatic Acid (27.9% HCl), Hydrogen fluoride, Ammonia, Nitric Acid, Phosphine,

OSHA Highly Hazardous, including:

Chemical Warfare Nerve Agent (Vapor Phase), Hydrogen peroxide solution, Muriatic Acid (27.9% HCl), Nitric Acid, Acrolein, Formaldehyde solution (36.5-38.0 wt.% in H₂O), Hydrobromic acid 48%, Iodomethane (Stabilized in Copper Pellet),

	Isopropylamine, 3-Buten-2-one, Acetaldehyde, Allylamine, Paraformaldehyde, 2-Fluoroethanol, Methacrylonitrile, Thionyl Chloride, Nitromethane, Allyl chloride, Dimethylamine Solution, Arsine, Methacryloyl chloride, Furan, Methyl chloroformate, Methylhydrazine, Methyl trichlorosilane, Ammonia, Bromomethane, Methane oxybis, [Chloro-Trichloronitromethane (Chloropicrin) (Vapor Phase)], Methyl amine, Methylisocyanate, Acryloyl Chloride, Boron trichloride, Boron trifluoride, Carbonyl fluoride, Chloromethane, Chloropentafluoroethane, Chlorotrifluoroethylene, Cyanogen, Cyanogen chloride (Vapor Phase), Diborane, Dichlorosilane, Dinitrogen tetroxide, Ethyl nitrite, Ethylene oxide, Hydrogen fluoride, Hydrogen sulfide, Iron pentacarbonyl, Methyl mercaptan, Nickel carbonyl, Nitric oxide, Nitrogen dioxide (and N2O4 or Dinitrogen tetroxide), Nitrogen trifluoride, Ozone, Pentaborane, Phosgene (Carbonyl chloride) (Vapor Phase), Phosphine, Phosphorous oxychloride.	
4.	Detection Sensitivities: i) For CWA: - Methyl Isocyanate- 10 PPM Hydrogen Cyanide- 20 PPM	BOO to verify through lab test report from Govt/ NABL accredited lab/International Lab
	ii) For TICs: - Phosgene- 12 PPM	BOO to verify through lab test report from Govt/ NABL accredited lab/ International Lab
5.	Response time: Response time must be < 60 seconds at the above stated concentration.	BOO to verify through lab test report from Govt/ NABL accredited lab/ International Lab
6.	Recovery time: Recovery time must be <03 Minutes at the above stated concentration.	BOO to verify through lab test report from Govt/ NABL accredited lab/ International Lab
7.	Time to be ready: < 05 minutes after switch on.	BOO to physically verify the parameter.

8.	Must be capable of providing visual alarms for agent class (Nerve, Blister, Blood, Choking and TICS) Must be capable of providing GHS symbols, Chemical abstracts number (CAS #), Lower Explosive Limit (LEL), Immediately Dangerous to Life and Health (IDLH), Ionization energy (IE), Photoionization detector (PID) correction factor (CF).	BOO to physically verify the parameter.
9.	Alarm: Must be capable of providing audible/visual alarm when chemical initially is detected, as well as provide gas/vapor concentration levels in PPM.	BOO to physically verify the parameter.
10.	Storage & Connectivity: The multi gas detector shall be compatible to store the data, capable of storing analysis results of chemicals and sharing via USB and Wi-Fi.	BOO to verify through OEM certification.
11.	Equipment must not give false alarm in continuous operation of minimum 03 hrs in normal Indian environment.	BOO to verify through OEM certification.
12.	Interferences: Adaptive atmospheric compensation algorithm that self-corrects for humidity and temperature to correctly identify gases in environments having humidity from 0-95% non-condensing.	BOO to verify through lab test report from Govt/ NABL accredited lab/ International Lab
13.	Operating Temperature: -10 to +50 degree C	BOO to verify through lab test report from Govt/ NABL accredited lab/International Lab
14.	Ingress Protection: IP54+ or more	BOO to verify through lab test report from Govt/ NABL accredited lab/International Lab
15.	Operating Time: Power via rechargeable lithium-ion battery, Min 3 Hour runtime.	BOO to verify through OEM certification/ undertaking
16.	Weight: The weight of Equipment must <03 Kgs including battery.	BOO to physically measure the weight of the equipment.
17.	Maintenance: must be modular without opening complete Equipment enclosure. Adequate maintenance tool must be provided.	BOO to verify through OEM certification/ undertaking

18.	Shelf life: Shelf life minimum 10 years.	BOO to verify through OEM certification/ undertaking
19.	Spare part: Spare part list, instructions for user, complete equipment schedule and any other relevant documents must be provided.	BOO to verify through OEM certification/ undertaking
20.	Software: Must have provision for software / data library updates.	BOO to verify through OEM certification/undertaking
21.	Warranty: Must provide warranty of at least 01 year and maintenance support for 10 years.	BOO to verify through OEM certification/ undertaking
22.	Documents: Documentary evidences/ OEM undertakings are required to support the compliance statement wherever applicable.	BOO to verify through OEM certification/ undertaking
23.	Accessories: Simulants be provided with equipment for training purpose. (Min 05 simulants for each equipment)	BOO to physically check the parameter.
24.	Carry Case: Customized ABS (Acrylonitrile Butadiene Styrene) case/Box (rugged and durable) with PU foam layer inside and carrying handle.	BOO to verify through OEM certification/ undertaking

3. Technical Specification with Trial Directives of Multi Gas Detector (IMS Based)

SN	Specification	Trial Directives
1.	Principle: Based on Ion Mobility Spectrometry (IMS) principle with minimum interferences.	--
2.	Detector should be handheld and be able to indicate and display name/class of compounds detected.	BOO to physically check and verify the parameter.

3.	Minimum 20 chemicals out the list mentioned below CWA Chemicals: (All CWA chemicals mentioned below) i. Warfare agent - VX ii. Warfare agent - Sarin (GB) iii. Warfare agent-Sulfur Mustard (HD) iv. Warfare agent Tabun (GA) v. Warfare agent - Soman (GD) vi. Warfare agent - Cyclosarin (GF) vii. Warfare agent - Lewisite TICS: (Minimum 13 Chemicals) i. Carbon disulfide ii. Thionyl Chloride iii. Methyl hydrazine iv. Phosgene (CG) v. Cyanogen Chloride (CK) vi. Diborane vii. Bromine viii. Fluorine ix. Hydrogen cyanide (HCN) x. Chlorine xi. Sulfur dioxide xii. Hydrazine xiii. Hydrogen sulfide xiv. Hydrogen fluoride (HF) xv. Formaldehyde xvi. Nitric acid xvii. Hydrogen chloride - xviii. Hydrogen bromide		BOO to check and verify through lab test report from Govt/ NABL accredited lab/ International Lab
4.	Detection Sensitivities		
	a)	Nerve Agents & VX: 0.05 mg/m ³ (GA, GB, GD, GF, VX)	BOO to check and verify through lab test report from Govt/ NABL accredited lab/ International Lab
	b)	Blister Agents: 0.5 mg/m ³ (HD & Lewisite)	BOO to check and verify through lab test report from Govt/ NABL accredited lab/ International Lab
5.	Response time: Response time must be < 60 Sec at the above stated concentration.		BOO to check and verify through lab test report from Govt/ NABL accredited lab/ International Lab
6.	Time to be ready: < 05 minutes after switch on.		BOO to physically check and verify the parameter.
7.	Recovery time: Recovery time must be < 03 Minutes at the above stated concentration.		BOO to check and verify through lab test report from Govt/ NABL accredited lab/ International Lab
8.	It must sense vapour samples from agents present in the atmosphere in the form of Gas, vapours or aerosol.		BOO to check and verify through lab test report from

		Govt/ NABL accredited lab/ International Lab
9.	Alarm: Must be capable of providing visual alarms for agent class (Nerve, Blister, Blood, Chocking and TICS) Must be capable to provide audio and visual alarm with LCD/LED.	BOO to physically check and verify the parameter.
10.	The chemical agent detector must be compatible to store the data. The chemical detector shall be capable of having workable memory & with data transfer speed of 04 Mbps or more. Mobile Software: Allow for real-time operation and data transfer using external power sources.	BOO to physically check and verify the parameter.
11.	Instrument must not give false alarm in continuous operation of minimum 06 hrs in normal Indian environment.	BOO to check and verify through OEM certification.
12.	Interferences: Instrument should be designed to suppress interferences from common and uncommon environmental chemicals like burning petrol/ diesel, burning tyres, grasses, DS2 solution, to reduce the likelihood of false positives or negatives.	BOO to verify through OEM certification.
13.	Operating Temperature: -10 to +50 degree C Storage Temperature: -20 to +60 degree C	BOO to check and verify through OEM certification
14.	Temperature and environmental test must meet JSS55555/ MIL-46IE/810F or other equivalent standards for the instrument in semi protected conditions.	BOO to check and verify through lab test report from Govt/ NABL accredited lab/ International Lab
15.	IP Rating: IP 65 or better	BOO to check and verify through lab test report from Govt/ NABL accredited lab/ International Lab
16.	Input power must be 6 to 12 V DC rechargeable battery with charger.	BOO to check and verify through OEM certification
17.	Instrument must able to run for minimum 06 hrs continuously with a single (rechargeable) battery unit.	BOO to physically check and verify the parameter.
18.	Weight: The weight of instrument must < 03 Kgs with battery.	BOO to physically measure the weight of the equipment.
19.	Spare part list, instructions for user, complete equipment schedule and any other relevant documents must be provided.	BOO to check and verify through OEM certification/ undertaking
20.	Must have provision for software/Data library upgradation with additional focus on data downloading accessories for Personal Computer with software and hardware.	BOO to check and verify through OEM certification/ undertaking
21.	Shelf life: Minimum 10 years	BOO to check and verify through OEM certification/undertaking

22.	Must provide warranty of at least 01 year or more and maintenance support for 10 years.	BOO to check and verify through OEM certification/undertaking
23.	Easy maintainable at unit/site level. Firms to provide adequate maintenance tool & must have service/ maintenance facility in India.	BOO to check and verify through OEM certification/undertaking
24.	Documentary evidences are required to support the compliance statement wherever applicable.	BOO to check and verify through OEM certification/undertaking
25.	Accessory: Simulants be provided with equipment for training purpose.	BOO to physically check the parameter.

4. Technical Specifications with trial directive of Multi Gas Detector (Raman Spectrometry Based)

SN	Specifications	Trial Directives
1.	Technology: - The instrument must feature a 1064nm laser wavelength.	Firm to submit OEM certificate on GeM along with Bid Documents.
2.	Capability: - Multi Gas Detector based on Raman Principle will be used for bulk material packed in transparent/translucent container The instrument must provide accurate identification of chemical weapons, explosives, toxic industrial chemicals, common chemicals & precursors chemicals. Including materials that fluoresce such as Non-Traditional Agents (NTAs), Chemical Warfare Agents (CWAs), Polymer based energetics, Oil/Lubricants, etc.	BOO to physically check and verify the parameter & check the list of substance under different categories in the equipment library during the equipment physical trial.
3.	Analysis Algorithms: - The instrument must include a mixture analysis capability (Min. 3 chemicals from 115 chemicals) that automatically alerts the user to the presence of a mixture and presents the user with the chemical components of the mixture. (Concentration of least abundant component in the mixture: Atleast 15%)	BOO to physically check the parameter by preparing component mixtures from any of the 115 chemicals (as per appendix A) at DRDE Gwalior. (CWA testing to be done by DRDE Gwalior and NDRF BOO) TICs/TIMs/NTAs/Polymer based energetics/Oil Lubricants/ Pharmaceutical/pesticides, etc. testing to be done by NDRF BOO comprising one Co-opted member of DRDE Gwalior)
4.	Identification Through Containers: - The instrument must be able to positively identify materials through	BOO to physically check by identifying through containers as mentioned in the parameter.

	plastic bags, transparent containers (colored or dyed, up to 5mm) or glass vials.	
5.	Chemical Information: - The instrument must provide the user with additional hazard information after identification. This information should include chemical description, common names or known synonyms.	BOO to physically check the same during the equipment physical trial.
6.	Survivability & Ruggedness: - a) The instrument must comply with the latest MIL-STD (810G or better). b) The physical buttons/ ruggedized touch screen display to be used by users wearing protective gloves. c) Ingress Protection: - IP 67 or more	a. BOO to physically check the parameters & firm to submit NABL/Govt Accredited lab/International lab test report on Gem along with bid documents for MIL-STD (810G or better). b. BOO to physically verify the parameter. c. Firm to submit NABL/Govt Accredited lab/International lab test report on Gem along with bid documents for IP rating.
7.	Chemical Library Size: - The instrument must include an onboard chemical library with more than 10,000 chemicals including library provided by NDRF. (Attached as ' Appendix-A for Raman Principle Based MGD ') The full library must be available for identification on the instrument and must not require connection to an external device/source.	BOO to be physically check the equipment library covering all the categories such as Toxic industrial chemicals/Toxic Industrial Materials, Non-Traditional Agents (NTAs), Chemical Warfare Agents (CWAs), Polymer based energetics, Oil/ Lubricants, Pharmaceutical, pesticides.
8.	User Libraries: - The instrument must have the capability to create and manage multiple user libraries designed for specific use and different user type accounts.	BOO to physically check the parameter during product trial by adding one sample into user library.
9.	Language of the Equipment: - English	BOO to physically check the parameter.
10.	Safety Features: - The instrument must allow users to configure a Scan Delay to enable the user to start the scan function but delay the actual start of the laser activation allowing user to operate safely from distance.	BOO to physically check the parameter.
11.	Weight: - Max 03 kg with battery	Firm to submit OEM certificate on GeM along with Bid Documents.
12.	Spectral Range & Resolution: - The instrument must have a broad spectral range of at least 200-2400 Raman shift/cm ⁻¹ or more and spectral resolution of less than 13 cm ⁻¹ and within 6-13 cm ⁻¹ full width at half maximum across the spectral range.	Firm to submit OEM certificate on GeM along with Bid Documents & data sheet of the equipment.

13.	Removable Power Source: - The instrument should have pair of removable rechargeable battery/inbuilt battery system. Operating Time: - Minimum of 04 hours under constant use (at room temperature).	BOO to physically check the parameter.
14.	Calibration: - The instrument also must have the ability to run a self-check (of less than 01 min) using a standard material to ensure proper instrument operation.	BOO to physically check the parameter.
15.	Support & Maintenance: - Firm must provide additional live phone support for assistance for spectral interpretation which at least should be valid during the warranty period of min. 2 years. Firms must have service/ maintenance facility based in India.	Firm to submit OEM certificate on GeM along with Bid Documents.
16.	Scan Parameter Adjustability: - The equipment should have adjustable laser power(auto/manual) settings for precise identification of chemicals (For heat sensitive Chemicals) Power of the Laser: - Min- 96mW or lower Max- 450mW or higher	BOO to physically check the parameter. Firm to submit OEM certificate for laser power on GeM along with Bid Documents.
17.	Data Export: - The instrument must be able to store all data internally and have the ability to recall data and export results information from the instrument to an external media.	BOO to physically check the parameter.
18.	Connectivity: -The instrument must have the ability to connect to a PC.	BOO to physically check the parameter.
19.	Adjustable Nosecone: - The instrument must include a removable, adjustable nose cone for maximum flexibility and sample position optimization.	BOO to physically check the parameter.
20.	User Safety: - Instrument should have enclosed Laser Path in which laser beam path is shielded and contained within the instrument. Firms to provide goggles specifically rated for the wavelength and power of the laser used in the 1064 nm Raman spectrometer.	BOO to physically check the parameter.

Appendix 'A' for Raman Principle Based MGD

Raman should be capable of detecting all chemicals in below mentioned list.

SN	Name of the Chemical	State at Room temperature
1.	1,1,2-Trichloroethane	Liquid
2.	1,1-Dichloro 1-nitroethane	Liquid
3.	1,2-Dichloroethylene	Liquid

4.	1,3-Dichloro 5,5-dimethylhydantoin	Solid
5.	2,4,5-Trichlorophenoxyacetic acid	Solid
6.	2,4-Dichlorophenoxyacetic acid	Solid
7.	2-Butanone	Liquid
8.	5-Methyl 3-heptanone	Liquid
9.	Acetonitrile	Liquid
10.	Acrylonitrile	Liquid
11.	Antimony compounds (as Sb) ANTU	Solid
12.	Barium (soluble compounds)	Solid
13.	Benzene 1-(chloromethyl)-4 Nitro	Solid
14.	Benzyl Alcohol	Liquid
15.	Bismuth and compounds	Solid
16.	Butyl alcohol	Liquid
17.	Butyl glycidyl ether	Liquid
18.	Camphor (synthetic)	Solid
19.	Chlorodiphenyl	Solid
20.	Cresol	Liquid
21.	Cyanide	Solid
22.	Dichlorophenol-2.4	Solid
23.	Dichlorophenol-2.6	Solid
24.	Dichloropropane-2,2	Liquid
25.	Dichlorosalicylic acid	Solid
26.	Diethylene Glycol	Liquid
27.	Dimethylformamide	Liquid
28.	Ergotamine tartarate	Solid
29.	Ethyl Acetate	Liquid
30.	Ethylene Glycol	Liquid
31.	GA (Tabun)	Liquid

32.	GB (Sarin)	Liquid
33.	GD (Soman)	Liquid
34.	GF (cyclo-Sarin)	Liquid
35.	Hafnium compounds	Solid
36.	HD (Sulphur Mustard)	Liquid
37.	Isoamyl alcohol	Liquid
38.	Isobutyl acetate	Liquid
39.	Isobutyl alcohol	Liquid
40.	Isopropyl Alcohol	Liquid
41.	Isopropyl ether	Liquid
42.	L (Lewisite)	Liquid
43.	Lead azide	Solid
44.	Lead compounds	Solid
45.	Lead styphanate	Solid
46.	Mesityl oxide	Liquid
47.	Methacrylic anhydride	Liquid
48.	Methanol	Liquid
49.	Methoxyethyl mercuric acetate	Solid
50.	Methyl (namyl) ketone	Liquid
51.	Methyl acetate	Liquid
52.	Methyl Ethyl Ketone	Liquid
53.	Methyl ethyl ketone peroxide	Liquid
54.	n-Amyl acetate	Liquid
55.	Naphthalene	Solid
56.	Nitric acid	Liquid
57.	Nitrotoluene	Solid
58.	n-Propyl acetate	Liquid
59.	n-Propyl alcohol	Liquid

60.	Oil mist (mineral)	Liquid
61.	OO Diethyl S propythio methyl phosdithioate	Liquid
62.	OO Diethyl S Methylsulphinylmethylphosphorothioate	Liquid
63.	Organo rhodium complex	Solid
64.	Orotic acid	Solid
65.	Oxabain	Solid
66.	Oxalic acid	Solid
67.	Paraoxon (Diethyl 4 Nitrophenyl phosphate)	Liquid
68.	Pentadecyl-amine	Solid
69.	Perchloric acid	Liquid
70.	Phenol, 2, 2-thiobis	Solid
71.	Phenol, 3-(1-methyl ethyl)-methylcarbamate	Solid
72.	Phosphoric acid	Liquid
73.	Phosphorous pentaoxide	Solid
74.	Phosphorous	Solid
75.	Picric acid	Solid
76.	Picrotoxin	Solid
77.	Potassium chlorate	Solid
78.	Potassium cyanide	Solid
79.	Potassium nitrite	Solid
80.	Potassium peroxide	Solid
81.	Potassium silver cyanide	Solid
82.	Propargyl alcohol	Liquid
83.	Propen-2-chloro-1,3-diou diacetate	Liquid
84.	Propionaldehyde	Liquid
85.	Propylene dichloride	Liquid
86.	Propylene glycol, allylether	Liquid
87.	Propylene imine	Liquid

88.	Propylene oxide	Liquid
89.	Pyridine, 2-methyl-3-vinyl	Liquid
90.	Pyridine,4-nitro-1-oxide	Solid
91.	Sarin	Liquid
92.	sec Hexyl acetate	Liquid
93.	sec-Amyl acetate	Liquid
94.	sec-Butyl alcohol	Liquid
95.	Semicarbazide hydrochloride	Solid
96.	Sodium anthra-quinone-1-sulphonate	Solid
97.	Sodium cyanide	Solid
98.	Sodium hydroxide	Solid
99.	Sodium selenite	Solid
100.	Sulphoxide, 3-chloropropyl octyl	Liquid
101.	Sulphuric acid	Liquid
102.	Tellurium (Powder)	Solid
103.	Tellurium compounds (as Te)	Solid
104.	TEPP (Tetraethyl pyrophosphate)	Liquid
105.	Terphenyl	Solid
106.	Tetryl	Solid
107.	Thionyl chloride	Liquid
108.	Toluene	Liquid
109.	Tributyl phosphate	Liquid
110.	Trichlorophenol	Solid
111.	Trinitro benzene	Solid
112.	Trinitro toluene	Solid
113.	Triphenyl phosphate	Solid
114.	Vinyl Acetate	Liquid
115.	Warfarin	Solid

