

Technical Specifications of Consumables, Kits, Reagents, Chemicals and other items used in the TB Culture and DST Laboratories

S.No.	Name of Items	Technical Specification
Group 1 - Chemicals, drugs, and disinfectants		
1	Phenol crystals (Carbolic Acid)	Chemical name: Phenol, Chemical formula: C ₆ H ₅ OH, Mol. Wt: 94.11, Melting point: 40°C+2, purity: 99.5%
2	Sulphuric Acid	Chemical formula: H ₂ SO ₄ , Mol. Wt: 98.08, Specific Gravity 1.84 Minimum Assay: 98%
3	Sodium Hypochlorite	Chemical formula: NaClO, Concentration not less than 4%, Packaging -5 Liter/pack
4	Methylene Blue	Chemical name: Methylthionine chloride, Chemical formula: C ₁₆ H ₁₈ ClN ₃ S, Mol. Wt: 319.9, Dye Content: Approx. 82% (dye content must be mentioned)
5	Potassium Dichromate	Chemical formula: K ₂ Cr ₂ O ₇ , Mol. Wt: 294.2, Minimum assay: 99.5%
6	Basic fuchsin	Chemical name: Pararosaniline hydrochloride, Chemical formula: C ₂₀ H ₂₀ ClN ₃ , Mol. Wt: 337.86, Dye Content: Approx. 85%-88% (dye content must be mentioned), Colour: Metallic Green.
7	Immersion oil (Heavy grade liquid paraffin)	Immersion oil supplied by the manufacturer of microscope with refractive index closer to that of Glass or 1.515 OR Liquid paraffin (heavy), refractive index of 1.48, colourless, odourless, transparent, free from fluorescence in day light with relative density of 0.827 to 0.890, viscosity of 110 to 230 m Pa s., specific gravity of 0.76-0.78 at 15.5°C.
8	Sodium Hydroxide	Chemical formula: NaOH Mol. Wt: 40g/mol, Minimum Assay: 98%
9	Tri sodium citrate	Chemical name: Trisodium citrate dihydrate, AR grade, Chemical formula: Na ₃ C ₆ H ₅ O ₇ .2H ₂ O, Mol. Wt (FW): 294.10, Purity: 99%
10	Disodium hydrogen phosphate	Chemical formula: Na ₂ HPO ₄ , For buffer; anhydrous; Mol. Wt.: 141.96

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11	Potassium dihydrogen phosphate (anhydrous)	Chemical name: Potassium Di Hydrogen ortho Phosphate, Chemical formula: KH_2PO_4 , Mol. Wt: 136.1, Minimum Assay 99%
12	N-acetyl-L cystein	Chemical formula: $\text{C}_5\text{H}_9\text{NO}_3\text{S}$, Mol Wt: 163.2, Purity \geq 99%
13	Potassium Permanganate (KMnO_4)	Chemical formula- KMnO_4 , Mol. Wt:158
14	Formalin/ Formaldehyde	Chemical formula: HCHO ; Mol Wt: 30.03; wt per ml at 20°C =1.075-1.095 g; methanol content=10-15%, Assay(acidimetric) as HCHO 37-41%
15	Magnesium sulphate	Chemical formula- $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$; Mol Wt. 246.48; purity:99.5%,A.R. Grade
16	Magnesium citrate (Tribasic)	Chemical formula- $\text{C}_{12}\text{H}_{10}\text{Mg}_3\text{O}_{14} \cdot 9\text{H}_2\text{O}$, Mol Wt: 613.28
17	Asparagine	Chemical name-L-Asparagine monohydrate; Chemical formula- $\text{C}_4\text{H}_8\text{N}_2\text{O}_3 \cdot \text{H}_2\text{O}$, Mol Wt: 150.14
18	Malachite Green	Chemical name: Malachite green Hydro Chloride, Chemical formula: $\text{C}_{23}\text{H}_{25}\text{ClN}_2$, Mol. Wt.-364.9, Colour: Green, Dye content: 80%+9% Solubility: both in water & alcohol, Stability: More than one year.
19	Glycerol	Chemical formula: $\text{CH}_2\text{OHCHOHCH}_2\text{OH}$ Mol Wt: 92.1; purity 99.5%, Reagent grade
20	Para Nitro benzoic acid-	Chemical formula- $\text{C}_6\text{H}_4\text{CO}_2\text{HNO}_2$, Mol. Wt: 167.12, Min assay =99%
21	Sodium chloride	Chemical name: Sodium chloride, chemical formula : NaCl , Mol. Wt.: 58.44, Minimum assay: 99.9%
22	Middle brook 7H9 broth base	Middle brook 7H9 dehydrated base, appearance light beige, free flowing, homogenous, water soluble (packaging 500 gm)
23	Middle brook OADC enrichment media	Middle brook OADC enrichment media in 100 ml packaging
24	Brain Heart Infusion Agar	Dehydrated powder containing beef or pig heart as well as calf brain, a source of amino acids (often either digested gelatin or other animal tissue), salt, disodium phosphate as a buffer, and glucose as a source of sugar.
25	Silver Nitrate	Chemical Formula: AgNO_3 , Mol. Wt.: 169.87, anhydrous 99.9%, stored in dark colour bottle, in solid form (50gm packaging)
26	Dimethyl Sulfoxide	Dimethyl sulfoxide, Chemical Formula- $\text{C}_2\text{H}_6\text{OS}$, Mol. Wt.- 78.13, 99.8%p.a.
27	Bovine Serum Albumin	with Purity above 95%, pack of 10 gm
28	Sodium carbonate	Chemical Formula Na_2CO_3 Mol. Wt: 106, Minimum assay: 99%
29	Oxalic acid	Chemical formula; $\text{COOHCOOH} \cdot 2\text{H}_2\text{O}$; Mol Wt:126.07 ; purity 99.8%

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30	Tween-80	Chemical name: Poly-oxy-ethylene-80-sorbitan-mono-oleate, AR or GR Grade, Density=1.06- 1.09 g/ml
31	Tween 20	Chemical name: Poly-oxy-ethylene-20-sorbitan-mono-oleate, AR or GR Grade, Density=approx.1.095 g/ml
32	Hydrogen peroxide	Chemical formula: H ₂ O ₂ AR or GR grade, assay : 29-32% solution, Mol wt. - 34.01
33	Niacin Strips	Niacin strips, 50 per pack
34	Auramine O	Chemical formula-C ₁₇ H ₂₂ CIN ₃ , Mol Wt: 303.84
35	Zinc Dust	Zinc dust, <10 µm, ≥98% purity, Mol. Wt.: 65.39
36	Hydrochloric Acid	Chemical name- Concentrated Hydrochloric Acid, Chemical formula- HCl, Mol Wt:36.46, Specific Gravity 1.18
37	Immunochromatographic Test (Rapid Identification Test) for MTB	Lateral flow Immuno-chromatographic assay for detection of MPT64 and/or MPB64 Antigen for rapid diagnosis of MTB Complex
<p>Group 2 -Drugs for DST</p> <p>Drug powders are not the proprietary item and may be available from other manufacturers also. However, the Committee agreed and recommended to procure SIGMA drugs as globally, standardization of Proficiency Testing panels has been done using SIGMA drugs only for obtaining consistent and reproducible results. National Reference Laboratories in the country have participated in more than 20 rounds of annual proficiency testing exercise conducted by the WHO SNRL. The WHO SNRL instructs to use SIGMA drugs for DST. Culture and DST laboratories in the country have also standardized DST using SIGMA drugs and have been providing consistent results for patient management for more than a decade. The use of SIGMA drugs is to be continued for consistent, correct and reproducible results. WHO “Technical Manual for Drug susceptibility testing of medicines used in the treatment of Tuberculosis 2018” (Table 11, pg 26) also recommends the use of drugs from SIGMA Aldrich.</p>		
38	Rifampicin	Sigma R-3501
39	Isoniazid	Sigma I -3377
40	Ethambutol di hydrochloride	Sigma E-4630
41	Dihydro Streptomycin Sulphate	Sigma D-7253
42	Ofloxacin	Sigma O8757
43	Ethioniamide	Sigma E6005
44	Kanamycin Sulfate	Sigma K4000
45	Amikacin Disulphate	Sigma A1774
46	Capreomycin Sulfate	Sigma C4142
47	Levofloxacin	Sigma 28266
48	Moxifloxacin	Sigma 32477

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49	Para Amino Salicylic Acid (PAS)	Sigma A79604
50	Linezolid	Sigma PZ0014
51	Clofazamine	Sigma C8895

Group 3- Personal Protective Equipment (PPE)		
52	Latex Gloves (Size- Small)	Powder-free disposable latex material gloves, size small, ≥ 0.16 mm thickness, 100 pieces per box, with tight wrist cuffs
53	Latex Gloves (Size- Medium)	Powder-free disposable latex material gloves, size medium, ≥ 0.16 mm thickness, 100 pieces per box with tight wrist cuffs
54	Latex Gloves (Size- Large)	Powder-free disposable latex material gloves, size large, ≥ 0.16 mm thickness, 100 pieces per box, with tight wrist cuffs
55	Nitrile Gloves (Size-Small)	Powder-free, latex-free disposable gloves; size small, resistant to chemical risks and resistant to ethidium bromide or auramine staining; > 0.3 mm thick appropriate for the laboratory staff (pack of 100 gloves per box)
56	Nitrile Gloves (Size- Medium)	Powder-free, latex-free disposable gloves; size medium, resistant to chemical risks and resistant to ethidium bromide or auramine staining; > 0.3 mm thick; appropriate for the laboratory staff (pack of 100 gloves per box)
57	Nitrile Gloves (Size- Large)	Powder-free, latex-free disposable gloves; size large, resistant to chemical risks and resistant to ethidium bromide or auramine staining; > 0.3 mm thick appropriate for the laboratory staff (pack of 100 gloves per box)
58	Laboratory Coats (Size- Small)	Laboratory Coat, Size Small, Blue color, Disposable, Sterile with elastic wrist cuffs, water repellent in pack of 50 pieces each
59	Laboratory Coats (Size-Medium)	Laboratory Coat, Size Medium, Blue color, Disposable, Sterile with elastic wrist cuffs, water repellent in pack of 50 pieces each
60	Laboratory Coats (Size-Large)	Laboratory Coat, Size Large, Blue color, Disposable, Sterile with elastic wrist cuffs, water repellent in pack of 50 pieces each
61	Respirators (N95 mask)	ISI marked respirators, universal size, less than 0.22 μ M, individually packaged (preferably in boxes of 10 pieces each)

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62	Surgical gowns (Size- Small)	Surgical gowns, non-sterile, size Small , Disposable, with elastic wrist cuffs, antistatic, partially resistant to fire and disinfectants like phenol, bleach and alcohol, back closing with binding bands made of main cloth material, individually packed and in box of 20 pieces each
63	Surgical gowns (Size- Medium)	Surgical gowns, non-sterile, size Medium, Disposable, with elastic wrist cuffs, antistatic, partially resistant to fire and disinfectants like phenol, bleach and alcohol, back closing with binding bands made of main cloth material, individually packed and in box of 20 pieces each
64	Surgical gowns (Size- Large)	Surgical gowns, non-sterile, size Large, Disposable, with elastic wrist cuffs, antistatic, partially resistant to fire and disinfectants like phenol, bleach and alcohol, back closing with binding bands made of main cloth material, individually packed and in box of 20 pieces each
65	Head Cover	Disposable, Stretchable hair cover for hygiene, Non-woven, packaging of 100 pcs per box/bag
66	Shoe Cover	Poly Ethylene Shoe Cover with approx. dimensions of 21x40 cm, antistatic, fluid impervious, Skid-resistant for added safety; seamless bottom and with elastic/rubber band for proper fitting, box of 1000 pcs
Group 4a - Pipettes Tips for phenotypic use		
67	1-200 µl pipette tips	Sterile; made of PE; with filters; 96 tips per pack
68	20-200 µl pipette tips	Sterile, made of PE; with filters; 96 tips per pack
69	100-1000 µl pipette tips	Sterile, made of PE; with filters; 96 tips per pack
70	100-1000 µl pipette tips (Long tip)	Sterile, made of PE; with filters; long tip (+ 120 mm), 96 tips per pack
71	Pasteur pipettes (sterile individually packed)	Sterile; single use; made of plastic; individual pack, volume 1.5 - 3 ml with graduations marked as 0.5, 1.0, 1.5, 2.0, 2.5 and 3.0
Group 4b- Pipette Tips for molecular lab use		
72	1-10 µl pipette tips	Sterile and free from DNase and RNase; made of PE; with compatible filters; 96 tips per pack
73	1-20 µl pipette tips	Sterile and free from DNase and RNase; made of PE; with compatible filters., 96 tips per pack
74	1-200 µl pipette tips	Sterile and free from DNase and RNase; made of PE; with compatible filters, 96 tips per pack

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75	20-200 µl pipette tips	Sterile and free from DNase and RNase; made of PE; with compatible filters, 96 tips per pack
76	10-100 µl pipette tips	Sterile and free from DNase and RNase; made of PE; with compatible filters, 96 tips per pack
77	100-1000 µl pipette tips	Sterile, and free from DNase and RNase; made of PE; 96 tips per pack
78	Pasteur pipettes	Sterile; single use; made of plastic; volume 1.5 - 3 ml with graduations marked as 0.5, 1.0, 1.5, 2.0, 2.5 and 3.0 (pack of 500)

Group 5- Glasswares		
79	Culture tubes or Universal glass bottles (McCartney Bottles)	28ml, wide neck, with aluminium screw cap and liners pack of 20 bottles. Length of bottle in mm = approx. 80 Maximum external circumference of bottle in mm = 92 Type of bottle (thickness and surface: bottom and side of each bottle) = Even thickness without air bubbles in the glass, clear glass Diameter of the bottom of bottle in mm to fit within centrifuge bucket of inner diameter of 30 mm = 28.2 Capacity of each bottle in ml (volume) = 28 Bottle should be autoclavable, should not become opaque on autoclaving. Screw cap made of aluminium to fit tightly all bottles (leak proof) screw cap: Inner diameter of screw cap without Neoprene washer in mm = 2.7 Neoprene (soft) washers thickness in mm = 2.5 Neoprene washer diameter in mm = 2.7 Neoprene washers should withstand repeated autoclave.
80	Slides	Glass microscope slides; 76mm x 26mm x 1.3mm, plain, one pack of 50 slides.
81	Glass ware -Round flat bottom flask -1 lit	1 Lt. Capacity.
82	Glass ware for stain preparation Measuring Cylinder - graduated 100 ml	Autoclavable & heat resistant, Graduated 100ml cylinder, with 1.0 ml graduation made of borosilicate glass
83	Measuring cylinder-graduated 500 ml	Autoclavable & heat resistant, Graduated 500ml cylinder, with 2.5 ml graduation made of borosilicate glass

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84	Measuring cylinder-graduated 1000 ml	Autoclavable & heat resistant, Graduated 500ml cylinder, with 5 ml graduation made of borosilicate glass
85	Glass stoppered bottles -250 ml	For stain preparation. Glass, autoclavable & heat resistant, 250ml capacity.
86	Container for stain -250 ml Polyethylene	Staining bottle 250 ml, made of polyethylene, flasks with a narrow neck; with a screw cap, swan neck or jet dispenser
87	Flat Bottom Flask - 3 lit	Autoclavable and dry heat resistant, flat bottom, round flask, extended neck (not Conical flask)
88	Flat Bottom Flask - 1 lit	Autoclavable and dry heat resistant, flat bottom, round flask, extended neck (not Conical flask)
89	Pipette- Glass graduated -1ml	Autoclavable and dry heat resistant, graduated 1/10 (0.1ml graduation)
90	Pipette- Glass graduated -2ml	Autoclavable and dry heat resistant, graduated 1/20 (0.1ml graduation)
91	Pipette- Glass graduated -5ml	Autoclavable and dry heat resistant, graduated 1/20 (0.1ml graduation)
92	Pipette- Glass graduated -10ml	Autoclavable and dry heat resistant, graduated 1/20 (0.1ml graduation)
93	Glass beaker- 500ml	Autoclavable and dry heat resistant, graduated (with graduation interval- 50 ml.)
94	Glass beaker- 250ml	Autoclavable and dry heat resistant, graduated (with graduation interval- 50 ml.)
95	Bijou bottles	Borosilicate or corning glass of 5 ml capacity with screw caps of Aluminium with rubber liners suitable for Bijou bottles, leak proof
96	Glass beads (3 mm)	Acid washed, 3mm size; for dispersing the clumps of micro-organisms by vortexing or blending in Mc Cartney/ flat bottom tubes of 15/50 ml), pack of 1 kg
97	Glass beads (5 mm)	Acid washed, 5 mm size; for dispersing the clumps of micro-organisms by vortexing or blending in Bijou bottle, pack of 1 kg
98	Beaker- 250 ml	Glass, autoclavable & heat resistant ; with spout, capacity 250ml, with graduation
99	Beaker- 100 ml	Glass, autoclavable & heat resistant, with spout, capacity 100ml, with graduation
100	Beaker- 500 ml	Glass, autoclavable & heat resistant, with spout, capacity 500ml, with graduation
101	Beaker- 1000 ml	Glass ,autoclavable & heat resistant ,with spout, capacity 1000ml with graduation
102	Glass Test tubes	Glass, autoclavable & heat resistant, standard rimless, 150 x 16 mm with screw caps.
103	Funnels - 5 cm diameter	Plain diameter: 5 cm, made of glass or polypropylene Autoclavable
104	Funnels - 10cm diameter	Plain diameter: 10 cm; made of glass or polypropylene Autoclavable
105	Funnels - 18cm diameter	Plain diameter: 18 cm, made of glass or polypropylene Autoclavable

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106	Volumetric flask - 50 ml	White line graduation with glass stopper, 50ml capacity Autoclavable
107	Volumetric flask - 100 ml	White line graduation with glass stopper, 100ml capacity Autoclavable
108	Volumetric flask - 1000 ml	White line graduation with glass stopper, 1000ml capacity Autoclavable
109	1 lit Bottle - Amber colour	1.0 litre bottle, made of amber colour glass, Graduated, to include a ring and cap of Polypropylene; Autoclavable
110	2 lit Bottle- Amber colour	2.0 litre bottle, made of amber colour glass, Graduated, to include a ring and cap of Polypropylene; Autoclavable
111	1 lit Reagent Bottle – Transparent	1.0 litre bottle (transparent), Graduated; made of borosilicate glass; to include a ring and cap of Polypropylene; Autoclavable
112	2 lit Reagent Bottle- Transparent	2.0 litre bottle (transparent), Graduated; made of borosilicate glass; to include a ring and cap of Polypropylene; Autoclavable
113	500 ml Reagent Bottle- Transparent	500 ml. bottle (transparent), Graduated; made of borosilicate glass; to include a ring and cap of Polypropylene; Autoclavable
114	250 ml. Reagent Bottle- Transparent	250 ml. bottle (transparent), Graduated; made of borosilicate glass; to include a ring and cap of Polypropylene; Autoclavable
115	Petri dishes (Glass)	Petri dishes made of borosilicate glass, autoclavable, two parts including lid/cover, size approx. 94x 16 mm (in packs/ boxes of 50 pieces)
Group 6- Disposable Items		
116	50 ml Polypropylene (PP) tubes for centrifuge (Sterile)	Centrifuge tubes -50ml, made of polypropylene, conical shape bottom with tight screw cap, , walls thick enough to allow centrifugation (maximum RCF) up to 5000x g, solvent resistant, with white labeling area and black graduations, flat PE caps which can close with quick 3-4 turns, allowing one handed operation. Tubes should be radiation sterilised to ensure non-cytotoxicity. Pack size of 25 tubes.
117	15 ml Polypropylene (PP) tubes for centrifuge (Sterile)	Centrifuge tubes- 15 ml, made of polypropylene, conical shape bottom with tight screw cap, , size 120x17 mm, . solvent resistant, should be able to withstand centrifugation (maximum RCF) up to 5000 x g, solvent resistant, with white labelling area and black graduations, flat PE caps which can close with quick 3-4 turns allowing one handed operation. Tubes should be radiation sterilized to ensure non-cytotoxicity. Pack size of 25 tubes
118	Micro-centrifuge tube, sterile with cap, 1.5 ml	1.5 ml, screw cap (with O-ring), conical shape bottom micro-centrifuge tube for optimal pellet formation, better visualization of pellet and effective processing during DNA extraction procedure, made of PP with frosted marking area, sterile, stable at – 196 °C to 121 °C; should be able to withstand centrifugation (maximum RCF) of

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		20,000xg free from RNase, DNase, DNA and endotoxins, not-self-standing, packaging of preferably 25 tubes per pack
119	Cryo-vial, sterile with cap, 2 ml (for long term storage)	Cryo-vials: Graduated; 2 ml; screw cap; vials round with an external thread; made of PP with a frosted marking area; vials sterile and able to be sterilized with γ -rays; stable at $-196\text{ }^{\circ}\text{C}$ to $121\text{ }^{\circ}\text{C}$; free from RNase, DNase, DNA and endotoxins, self-standing, pack of 1000.
120	Cryo vial storage boxes	Sturdy , water repellent , able to withstand $-90\text{ }^{\circ}\text{C}$, cryovial storage boxes with cover , made of poly propylene or cardboard material, 8X8 or 9x9 or 10x10 array box, compatible to store cryovials of 2 ml capacity, with numbered grid and dividers for easy identification of sample
121	Cryotag	Cryo-tags sized to fit for use on cryo-vials (2 ml), made from smear resistant material, but should accept writing with all marking devices, rolls of 1000 pcs
122	Bags for waste bin – 60 Litres	<p>Material- Plastic Bag (Biodegradable) Red/Yellow/ Blue/HDPE/LLDPE/PP bags made from biodegradable, virgin, non-chlorinated polymer material, autoclavable and thickness of sheet shall be minimum 55 micron.</p> <ul style="list-style-type: none"> • Class & Sizes-Volume: 60 Lt. (24" x 56"). • Dimensions- Flat rectangular Bags of sizes indicated above (for tolerance limits refer IS 9738: 2003), an easy to hold collar tie knot arrangement. • Workmanship & Finish- Puncture proof-Acid and Alkali Resistant, Smooth surfaces free from defects such as foam, unevenness, crease, fish eye mixture of foreign matter, pin holes, Finish of cut portions shall bear good workmanship. • Requirements- Bags shall meet requirements under IS 9738: 2003 & drop test under IS 12395: 1988 • Bags shall be preprinted as per requirements of Bio Medical Waste Management Rules- 2016 (amended till date) • Material sheet used shall match all requirements under relevant IS code Bags shall be steam permissible and withstand autoclaving (a Temperature up to 135°C) • Marking- Properly Labeled Poly bag carrying information viz., product name produced by, Address. Date of Manufacturing, Expiry (at least 18 months from date of Mfg.), Size and Batch Number. <p>Packing & Packaging – Packet of 100 bags packed in outer poly bag, Ready to use. Carton containing number of packets of poly bags shall be of adequate strength to last till intended end use. Carton shall also contain complete information over label. The disposal should be in lines with the BMW Guidelines, 2016 and guidelines of CPCB amended from time to time</p>

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123	Bags for waste bin – 30 Litres	<p>Material- Plastic Bag (Biodegradable) Red/Yellow/ Blue/HDPE/LLDPE/PP bags made from biodegradable, virgin, non-chlorinated polymer material, autoclavable and thickness of sheet shall be minimum 55 micron.</p> <ul style="list-style-type: none">• Class & Sizes-Volume: 30 Lt. (24" x 28").• Dimensions- Flat rectangular Bags of sizes indicated above (for tolerance limits refer IS 9738: 2003), an easy to hold collar tie knot arrangement.• Workmanship & Finish- Puncture proof-Acid and Alkali Resistant, Smooth surfaces free from defects such as foam, unevenness, crease, fish eye mixture of foreign matter, pin holes, Finish of cut portions shall bear good workmanship.• Requirements- Bags shall meet requirements under IS 9738: 2003 & drop test under IS 12395: 1988• Bags shall be preprinted as per requirements of Bio Medical Waste Management Rules- 2016 (amended till date)• Material sheet used shall match all requirements under relevant IS code Bags shall be steam permissible and withstand autoclaving (a Temperature up to 135⁰C)• Marking- Properly Labeled Poly bag carrying information viz., product name produced by, Address. Date of Manufacturing, Expiry (at least 18 months from date of Mfg.), Size and Batch Number. <p>Packing & Packaging – Packet of 100 bags packed in outer poly bag, Ready to use. Carton containing number of packets of poly bags shall be of adequate strength to last till intended end use. Carton shall also contain complete information over label. The disposal should be in lines with the BMW Guidelines, 2016 and guidelines of CPCB amended from time to time</p>
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124	Bags for waste bin- 2 Litres	<ul style="list-style-type: none"> • Material- Translucent disposable Plastic Bag (Biodegradable). HDPE/LLDPE/PP bags made from biodegradable, virgin, non-chlorinated polymer material, Autoclavable and thickness of sheet shall be minimum 55 micron. • Class, Sizes & Dimension-Volume: 2 Liter, approx. 200 mm width and 300 mm length, Flat rectangular bag (for tolerance limits refer IS 9738 : 2003) • Workmanship & Finish- Puncture proof-Acid and Alkali Resistant, Smooth surfaces free from defects such as foam, unevenness, crease, fish eye mixture of foreign matter, pin holes, finish of cut portions shall bear good workmanship. • Requirements- Bags shall meet requirements under IS 9738: 2003 & drop test under IS 12395: 1988 • Material sheet used shall match all requirements under relevant IS code Bags shall be steam permissible and withstand autoclaving (a Temperature up to 135⁰ C). Packing & Packaging – Packet of 100 bags packed in outer poly bag, Ready to use. Carton containing number of packets of poly bags shall be of adequate strength to last till intended end use Carton shall also contain complete information over label viz., product name, produced by, Address. Date of Manufacturing, Expiry (18 months from date of Mfg.), Size and Batch Number. <p>The disposal should be in lines with the BMW Guidelines, 2016 and guidelines of CPCB amended from time to time</p>
125	Single use syringes, sterile- 10 ml	Sterile, single use syringes, made of poly propylene, graduated, 10ml volume, individually wrapped, as per standards given by BIS, 50 pieces per pack/box
126	Single use syringes, sterile- 20 ml	Sterile, single use syringes, made of poly propylene, graduated, 20ml volume, individually wrapped, as per standards given by BIS, 50 pieces per pack/box
127	Syringe Filter (0.22uM) for single use, sterile	<p>Syringe Filter made of low binding hydrophilic polyvinylidene fluoride membrane in an acrylic housing.</p> <ul style="list-style-type: none"> • Dimensions of inlet to outlet 26mm (1.02 in.), diameter 33mm (1.30 in.), Filtration Area 4.5 cm² (0.70 in²), Pore size 0.22 um • Temperature limit: 45°C • Housing burst at 25°C - 150 PSI G (10 bar) inlet maximum • Filtration Volume- 10ml to 100ml • Hold up volume < 0.1 ml after air purg • Typical initial flow rate for water at 30 PSI G – 25 ml/min; 40ml/min; 300ml/min
128	Filter paper – sheets (for work benches)	Filter paper sheet, 460 x 570 mm (approx.), weight approx. 87g/sq. m, packaging of 100 sheets

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129	Single-use paper towels	Single use paper towels, approx. 230x 300 mm folded to take as single piece off a wall mounted box, approx. 100 towels/ pack
130	2 ml standard reaction tube	Micro-centrifuge Tubes of 2 ml with screw caps, made of PP, graduated, conical bottom, stable at - 196°C to +121°C, autoclavable, PP screw cap with silicone seal, with frosted marking, can withstand centrifugation to 20000g
131	PCR tubes (0.2 ml)	Single use PCR tubes with attached caps, 0.2 ml, tubes to be compatible with leading thermal cyclers with heated lids, free from DNase and RNase, autoclavable
132	Forceps, individually wrap, sterile	sterile, plastic, individual packaging, 145 mm, box of 50 pcs
133	Petri dishes (Plastic)	Petri dishes: made of plastic, crystal clear, sterile, two parts including lid/cover, size approx. 94 dia. x 16 mm ht., packed in 20pcs/bag
134	Disposable loops 10 µl	Disposable loops, 10µl , length approx. 220 mm, made of plastic, sterile, individually packed, packed in 25/50/100 piece per box
Group 7- General lab items		
135	Bunsen Burner	Fast flame Bunsen burner, Stainless Steel, for use with natural and cylinder gases, 15cms height, head diameter 13 mm, Nickel plated with stopcock
136	Safety gas tubing	Tubing (length 0.5–1.5 m) appropriate for the type of gas to be used and for safe connection to the gas hose connection; two hose clips for each tube, compliant with national gas safety guidelines. ISI certified
137	Test tube rack	Aluminium, S-shaped, 9" x 3" with holes size of 20mm, holding capacity: 30 tubes.
138	Loop Holders	Stainless steel rod with heat resistant handle holder; 6" in length; with screw arrangement to hold firmly 24 SWG Nichrome wire inoculation loop.
139	Loop wire	Nichrome wire, 24 Standard Wire Gauge (SWG)
140	Loop wire	Nichrome wire, 27 Standard Wire Gauge (SWG)
141	Inoculation loops 4mm	Inoculation loops made of Nichrome (80-20), length 5 cm, loop internal diameter 4mm, wire diameter 0.8 - 1 mm , heat resistant to 1200 °C
142	Inoculation loops 3mm	Inoculation loops made of Nichrome (80-20), length 5 cm, loop internal diameter 3mm, wire diameter 0.8 - 1 mm, heat resistant to 1200 °C
143	Diamond Marker pencil	6" holder with artificial diamond (hard stone) embedded at one end with screw cap to mark on microscope glass slides.

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144	Grease Marking pencil	Marking pencil MPS, Blue or red coloured, 8" length, to write on glass ware/metal surfaces
145	Cotton	Absorbent, each roll of 0.5 kg.
146	Filter paper (for sputum microscopy reagents)	Whatman's Filter paper No. 1, sheets of 57.5cms x 57.5cms
147	Stainless steel tray	Stainless Steel, Size: 15" length, 10" Width, 3" Depth.
148	Perforated Baskets	To hold approximately 200 universal containers (McCartney bottles) for autoclaving, Aluminium welded mesh. Size: 480mm x 280mm Compatible with the autoclave inner chamber of diameter of Height 500 mm x Diameter 300 mm, with two hinged handles at the top
149	Wire rack	Stainless Steel wire carrying rack, sturdy welded steel wire (of approximately 0.25" diameter) construction, used to hold 20 McCartney bottles(10 bottles x2 rows) of approximately 28.5 cms external diameter and 82 cms height, 50 gm. Weight each bottle; rack should be autoclavable, resistant to corrosion, solvents, and acids. Entire rack size approximately 13" L x 2.5" B x 2.5" Ht. Racks should have a base made of steel wire mesh of 0.5" L x 0.5" B, The dimensions of top wire mesh 1.25" L x 1.25" B.
150	Plastic bucket with lid foot operated (60L)	Plastic bucket, foot operated, 60 Litres capacity,
151	Discard bucket with lid (10L)	10 litres with lid, made up of plastic, foot operated
152	Discard bins (2L)	Made of Stainless Steel or autoclavable plastic, 2Lts. Capacity, Diameter 6", with lid.
153	Forceps (stainless steel)	Stainless Steel, 6" in length, serrated blunt tips, straight.
154	Stainless steel scissors	Stainless Steel, 6" length, surgical, open shanks, straight with fine sharp point.
155	Spatula	Medium size (20–25 cm); made of polished stainless steel; spoon on one side and spatula on the other.
156	Clips (50mm)	Clip Mohr, Nickel plated Iron, thick quality, round edges, length 50mm.
157	Clips (70mm)	Clip Mohr, Nickel plated Iron, thick quality, round edges, length 70mm
158	Knives	Stainless Steel, with handle for cutting glass tubing; pocket size knife: 10cms.
159	Cork Borer	Stainless Steel, insets with rod separate handle fitted to each set of 1-12, 5-19mm
160	Boxes (for holding petri dishes)	Stainless Steel for holding ten 4" (96mm) glass petri dishes for sterilization.
161	Stainless Steel trays	Stainless Steel, with pouring spout, Size: 20" x 12" x 2.5"
162	Stainless steel bowl	Stainless Steel, capacity 2 ½ Litres

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163	Stainless steel Funnel	Stainless Steel, 12 cm diameter, stack of 8 cm length, 1 cm. bore size
164	Drying racks	Stainless Steel, to drain microscope slides after staining, each rack to accommodate at least 16 slides, approximate dimensions 350 x 180 x 5 mm.
165	Bucket with lid (4 gallon)	Stainless Steel, capacity 4 Gallons
166	Mug	Stainless Steel, 1 pint size
167	Brown Paper	115 cm. x 75 cm. size sheets
168	Rubber bands	All assorted sizes
169	Cotton thread	Cotton thread roll for tying (generally available in packing of 10 rolls)
170	Wire racks to hold McCartney bottles	Stainless Steel wire carrying rack, sturdy welded steel wire (of approximately 0.25" diameter) construction, used to hold 150 McCartney bottles (of approximately 28.5 cms external diameter and 82 cms height, 50 gm. Weight each), autoclavable, should resist rust, corrosion, solvents, acids. Entire rack size approximately 22.5" L x 15" B x 2.5" height. Racks should have a base made of steel wire mesh of 0.5" L x 0.5" B, The dimensions of top wire mesh 1.25" L x 1.25" B
171	Wire gauge with non asbestos pad	Iron mesh of 1mm thick wire for Tripod stand, 15cms x 15 cms, with 10cms diameter asbestos in the centre, Size: 6" x 6"
172	Tripod stands	Powder coated Iron Tripod stand made of 7mm diameter rod, Minimum distance between any two legs 15cms, height 23cms, stand of equilateral triangle of 10cms on each side, for hanging 2 litre bags
173	Stainless steel rods for staining	Two 5mm diameter stainless steel rods of length 2ft each welded at both ends with small stainless steel rods of 5 cms length and 5 mm diameter, to obtain a rectangular rack for placing on wash basin during staining of microscope slides.
174	Industrial Gloves	Acid & alkali proof, Rubber, Anti-static, to cover at least ¾th of forearm.
175	Lens paper	Soft microscope lens cleaning tissue, 4" x 6" booklet, each booklet containing 100 sheets
176	Rubber teats	Latex rubber teats for Pasteur pipettes. Capacity 2.5ml; neck bore 6.5mm
177	Rubber bulbs	Pear shaped molded rubber for use with pipettes. Neck bore approx. 4mm; 15ml capacity
178	Retort stand base	12" x 6" stand with 30" rod.
179	Retort ring plain rod	Ring 3.25" diameter; arm length 13 cms
180	Clamps	Brass or cadmium plated for retort stand

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181	Boss heads	Brass or cadmium plated for holding retort ring
182	Test tube brushes	White bristles on tinned iron white-fan shaped ends for test tube size 3/8 " x 1/2"
183	Cylinder brushes	Nylon bristles with twisted steel handle. Arm length 40 cms approx
184	Nylon brush large	Nylon bristles with twisted steel handle; Sizes 0.75" to 1"
185	Brush for flask	Nylon bristles with twisted steel handle for washing 250ml -3 lit flask; Two arm length (15, 40 cms)
186	Mortar pestles	Heavy glass, external diam. 4", capacity 8 oz.
187	Boxes for slides	For storing 100 Slides, Plastic storage boxes, approximate dimensions: 8.75" (22.2 cm) x 6.75"(17.15 cm) x 1.3"(3.3 cm)
188	Spare caps for bijou bottles	Screw caps of Aluminium with rubber liners suitable for Bijou bottles
189	Racks suitable for pipettes offered, at least 4 positions	Made of Poly propylene/acrylic, racks suitable for standard pipettes, 4 positions, autoclavable, high chemical resistant (at least to bleach, phenol and alcohol)
190	Racks with lid for cryovial	Racks with lid (plastic preferred), suitable for cryovial (2ml-round outer winding/1.5 ml-conical), Operating range -196 °C to +121°C, autoclavable at 121°C (20 min)
191	Rack for PP-tubes (15 ml tube or Universal Test tube rack 17 mm diameter tube)	Made of PP, temperature resistant (-15° C to +130°C), for 17 mm Diameter tubes, (dimensions: L250 mm x D105 mm x W70 mm, capacity of 60 tubes , autoclavable, high chemical resistant (at least to bleach, phenol and alcohol)
192	Racks for PP Tube (50 ml)	Made of Poly propylene, Rack for 50 ml tubes, capacity 18-20 tubes per Rack, autoclavable, high chemical resistant (at least to bleach, phenol and alcohol)
193	Rack 15 ml / 50 ml - 4-Way Microtube Rack	Rack for different usable sides, high chemical resistant (at least to bleach, phenol and alcohol), high temperature resistant and autoclavable
194	PCR Tube Rack (0.2 ml)	With 96 holes in 8 x 12 array, for vials 0.2 ml, individual vials, on strips or plates, in different colours (e.g. 4x blue, 4x red, 2x white). Dimensions L 127 x W 85 x H 16 mm. Plastic resistant to bleach and alcohol
195	Storage box with lid for 0.2ml PCR tubes	Made of Poly propylene, with transparent lid for storage of 0.2 ml PCR tubes (approx.. 90-100 tubes), autoclavable, high chemical resistant (at least to bleach, phenol and alcohol), alphanumeric grid to assist in easy sample identification, racks of various colors for differentiation/ organization purpose
196	Sterile indicator tape, autoclave	Sterile indicator tape (roles), Self-adhesive approx.19mm broad and 55m long, for autoclave (beige/dark brown)

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197	Sterile indicator tape, hot air oven	Sterile indicator tape (roles), Self-adhesive approx.19mm broad and 55m long, for hot air sterilization (green/brown)
198	Biological Indicator for monitoring Steam Sterilization	<p>Intended use: To confirm the effectiveness of steam sterilization at 121°C for 15 min and optimal functioning of autoclave to avoid inadequate sterilization and quickly introduce corrective measures to avoid health risks</p> <p>Type of Biological Indicator: Self-contained, Organism: Spores of Geobacillus stearothermophilus, Strain: ATCC 7953, Viable spore population: 1-2×10⁶, Culture: Bacteriological medium with growth promoting ability and a pH indicator, Incubation temperature:55–60°C</p> <p>Primary packing: Biological Indicator consisting of a spore strip enclosed in a polypropylene plastic vial with a perforated cap with filter along with growth medium contained in a crushable glass ampoule</p> <p>Labeling: With Manufacturing date, Expiry date, Shelf life and Storage conditions</p> <p>Resistance Characteristics: D Value, Survival and Kill time tested at manufacturing and provided in CoA Manufacturing of Unit: In compliance with quality standards and ISO 11138 Guidelines</p> <p>*D value: time or radiation dose required to inactivate 90% of a population of the test microorganism under stated exposure conditions</p>
199	Parafilm (sealing film)	Parafilm, 100 mm width, 38 m length, for use between 40°C to +50°C
200	Hand lens	Optical graded lens with magnifying capacity, for use in easy reading of growth in culture bottles
201	Digital Stop Watch	Stop Watch, digital, count down timer, four digits (MM:SS), programmable for max. 99 minutes, alarm at 00, memory function
202	Paper towel box	Wall mounted, refillable box for a capacity of at least 150 paper towels
203	Spray head with bottle	1 litre bottle with Spray head (preferably with one spare spray head)
204	Marker pens (0.8 to 1 mm)-permanent	Marker pen, black/Blue ink, for all surfaces, writes even on wet and cold surfaces, fast drying, line 0.8 to 1 mm broad
205	Marker pen for PCR Tubes (0.6 mm)	Marker pen, black/blue ink, especially for laboratory use, for all surfaces, ink resistant against alcohol, water and autoclaving, writes even on wet and cold surfaces, fast drying, line 0.6 mm broad

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Group 8- Proprietary items		
S. No	Company	Consumable/ Kit/ Reagent
1	BD	BD BBL™ Calibrators Kit (for 1 drawer) (1 each)
2	BD	BACTEC MGIT 960 AST transport rack – 445942.
3	BD	BBL MGIT Tubes for use in Bactec MGIT 960 (7ml) - 100 tubes/pkg Catalogue No: 245122
4	BD	BACTEC MGIT 960 Supplement Kit (100 tests, PANTA and OADC combined) Catalogue No: 245124
5	BD	BACTEC™ MGIT™ 960 SIRE kit, One kit is sufficient for 40 test Catalogue No: 245123
6	BD	BACTEC MGIT PANTA™ Kit for Manual MGIT Catalogue No: 245114
7	BD	BACTEC MGIT OADC Kit for Manual MGIT Catalogue No: 245116
8	BD	BACTEC MGIT S.I.R.E. Kit for Manual MGIT Catalogue No: 245119
9	BD	BACTEC™ MGIT™ 960 - PZA Medium Catalogue No: 245115
10	BD	BACTEC™ MGIT™ 960 - PZA Kit Catalogue No: 245128
11	HAIN	GenoType MTBDR plus V2 - 30496AM - Test kit composed of: 30496A GenoType MTBDR plus Version 2.0 and 51610 GenoLyse
12	HAIN	Genotype MTBDR sl V2.0 – 96 test, 31796AM, Test kits composed of 31796 A Genotype MTBDR sl V2.0
13	HAIN	GT-Blot 48 Tray for 96 strips (black)
14	HAIN	GT-Blot 48 reagent kits
15	Cepheid	Xpert® MTB/RIF (pack of 50 for HBDC)
16	Cepheid	Xpert Check kit each kit allows to check 4 modules
17	HAIN	Genolyse -96 test: 51610