

विकास आयुक्त का कार्यालय

(सूक्ष्म, लघु एवं मध्यम उद्यम)
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
(भारत सरकार)

निर्माण भवन, सातवीं मंजिल, मौलाना आजाद रोड,
नई दिल्ली-110 108



सत्यमेव जयते
OFFICE OF THE DEVELOPMENT COMMISSIONER
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES
GOVERNMENT OF INDIA

OFFICE OF THE DEVELOPMENT COMMISSIONER
(MICRO, SMALL & MEDIUM ENTERPRISES)
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES
GOVERNMENT OF INDIA

Nirman Bhawan, 7th Floor, Maulana Azad Road,
New Delhi-110 108

Ph. EPAX-23063800, 23063802, 23063803, 23063804, 23063805 & 23063806

No. 65(20)/TCD/B03/2019-20/43

Date: 30/09/2019

To,

The Director (I/c),
MSME – Testing Centre,
65/1, GST Road, Guindy,
Chennai-600 032, Tamilnadu.

Subject: Sanction and allocation of fund Rs. 3,68,09,288/- to MSME-Testing Centre, Chennai under the object head Machinery and Equipments (4851.00.102.33.00.52) for the year 2019-20.


Sir,

With reference to your letter no. G/26026(25)/2019-20/Cap Eqpt/67 dated 28/05/2019, I am to convey the administrative approval and financial sanction of AS&DC (MSME) for the allocation of fund of an amount **Rs. 3,68,09,288/- (Three Crore Sixty Eight Lakh Nine Thousand Two Hundred Eighty Eight only)** to MSME-Testing Centre, Chennai for procurement of below mentioned Machinery and Equipments to enhance testing facilities/ balancing/ replacement of machinery used for conducting tests and auxiliary equipments/ accessories required for modification or upgradation / to create complete new test facility under object head Machinery and Equipments (4851.00.102.33.00.52) of Infrastructure Establishment DC (MSME) for FY 2019-20.

Name of MSME-TCs & TSs	Name of Machinery and Equipments	Funds allotted (in Rs.)
TC-Chennai	1) Four side applicators, 2) Glossmeter, 3) Coating thickness gauge, 4) Automatic Adhesion tester, 5) CD- Tester, 6) QUV-Accelerated weathering tester, 7) Nitrogen gas generator for N ₂ Evaporator, 8) Strong Shaker 9) Vicat apparatus with accessories, 10) Digital Balance, 11) Air-conditioning system for cement lab, 12) Dial Calibration Tester, 13) Oxygen Index apparatus with oxygen indicator with Galvanic sensor. 14) Oxygen Index apparatus with oxygen indicator with paramagnetic sensor, 15) Smoke density tester, 16) Halogen acid gas testing apparatus with calibrated flowmeter and quartz tube, 17) Multi cell Ageing oven size: inner: 360mm x 360mm x 360mm, 18) Thermal stability test apparatus, 19) Cold chamber, 20) Fixture for Cold impact test apparatus,	3,68,09,288/-


	<p>21) Fixture for Cold bend test, 22) Flame retardance test apparatus, 23) Torsion testing machine, 24) Dumbell "DIE", 25) SS Tank without anti-corrosive paint, 26) 28 Amps Single phase variac, 27) Copper Shunt for Temp rise test, 28) Copper Shunt for Temp rise test, 29) Three phase Primary injection kit, 30) Step-up Transformer with Digital AC Voltmeter & ammeter for output, 31) Set of SIEVES made of steel mesh, 32) Weighing balance, 33) LPG Gas cylinder with Regulator, 34) Burner with clamp and stand, 35) Wheatstone bridge, 36) Digital Torsion Testing Machine, 37) Double Disc Polishing Machine, 38) Optical Brinell Hardness Tester, 39) Trinocular Inverted Material Microscope with accessories, 40) Vickers Hardness Tester, 41) Mechanical Extensometer, 42) Mandrel- 13 Nos, 43) Coiling and stretching machine, 44) Warping Tester and Shear strength attachment, 45) Domestic pressure cooker test rig, 46) Air-conditioning for pr cooker testing lab, 47) OES for Non Ferrous and Ferrous Material Testing</p>	
--	--	--

2. The expenditure of **Rs. 3,68,09,288/- (Three Crore Sixty Eight Lakh Nine Thousand Two Hundred Eighty Eight only)** will be accommodated in Demand No. 66 – Ministry of Micro, Small & Medium Enterprises (MSME) under object head Machinery and Equipments (4851.00.102.33.00.52) of Infrastructure Establishment DC (MSME) for FY 2019-20.
3. The procurement shall be made strictly as per GFR norms / Government prescribed procedures / Rules and Guidelines/ as per the specifications mentioned in the attached Annexure.
4. AIA/Director/Director I/c/Asst. Director I/c should furnish the progress report of the work/ Procurement and statement for actual expenditure incurred to this office by 2nd of the following month inter alia with the reason or variation if any and ensure utilization of fund within the current FY 2019-20.
5. AIA/Director/Director I/c/Asst. Director I/c shall furnish installation report and commissioning certificate of the procured Machinery & Equipments along with expenditure incurred and fund utilization certificate.
6. This issues as per diary No. 3476/DC dated 16.09.2019.


(S.V. Sharma)
Deputy Director

Copy to:

- 1) The Principal Accounts Officer (Compilation) Ministry of Industry, Udyog Bhawan, New Delhi.
- 2) Pay & accounts office (MSME), Chennai.
- 3) B & A Division, O/o DC (MSME), Nirman Bhawan, New Delhi.
- ✓ 4) SENET Division with the request to upload on DC (MSME) website.
- 5) Sanction File.


(S.V. Sharma)
Deputy Director

Name of Institute: MSME Testing Centre, Chennai

Sl. No.	Name of Machinery & Equipments and Qty.	Used for	IS Specification No. / Relevant specification	Complete Technical specifications
1	Four side applicators, Qty-1 Set	For Preparation of Paint Panels in paint testing.	IS 101 Part1/Sec3:1986	Made up of High grade SS 316/304 in 2 film widths: 60/80 mm, Shall have capable to apply paint having thickness from 25 to 600 Microns
2	Glossmeter, Qty-1 Set	To check gloss of the paint sample	IS 101 Part 4/Sec4:1988	Three-angle gloss meter 200/600/850 with data storage, statistical functions and USB (Mini) as well as Bluetooth interfaces, single gloss standard A, with accessories like USB Cable, evaluation software Bluetooth adopter, hand strap, Suitable battery, carrying case, calibration certificate
3	Coating thickness gauge -Ferrous and non ferrous, Qty-1 Set	to test Dry film thickness of paint samples	IS 101 Part 3/Sec 2: 1989	Working Range: 0-1500 microns
4	Automatic Adhesion Tester, Qty-1 Set	to test Paint sample for pull out adhesion test	as per ASTM D 4541 : 2017/(Latest)	with 20mm working range:0-10000 psi, With 10 mm psi range will be up to 14000psi
5	CD- Tester, Qty-1 Set	Cathodic Disbanding test for RDSO/M&C/PCN/12 3/2018 and other Epoxy paints	CAN-CSA- Z245.0 2-98, Cl.12.8	4 measuring station, ± 5V output; 200mA with Reference electrode calomel(Hg/HgCl)Model No.75-091-103 Titanium anode with platinum wire Ø 0, 6 mm Test cup with cover made of acrylic glass Ø 74 mm with lid, 2 drill holes Sand bath, 50-3000C, 590X440 mm, 4000 W, 230 V
6	QUV-Accelerated weathering tester, Qty-1 Set	Durability test of paints, leather, fabric and paper	IS 101 part 6/Sec 5:1986 and also meet as per IS 8662	QUV Accelerated Weathering Tester equipped with Solar Eye Irradiance Control for Precise Control of UV light intensity, Condensation, Universal Calibrator Handheld Display Unit, QUV Irradiance Smart Sensor UV, Fluorescent UV Lamps
7	Nitrogen gas generator for N2 Evaporator, Qty-1 Set	To prepare Nitrogen gas for smooth operation for GCMSMS etc.	Axillary equipment for generating Nitrogen gas for testing of pesticide residue in Water as per IS 14543, IS 13428, IS 10500 etc	Flow Rate : 50 LPM min Technology : PSA (Pressure swing absorption)Output Pressure : 8 bar /116psi (max)Purity : 99. 5%(min),, Air Input Requirement Particulate ≤ .01umOil Vapor ≤ 0.01 mg/m3, Moisture ≤ 30c due point pressureMinimum Pressure : 8 bar /110psi , Flow Rate :350 LPM (working rate)Electrical Supply : 230 v & 50 Hz., Oil Free Air Compressor (3 phase) No. of stags : single two cylinder., Motor : 3 HP Three phase Piston Displacement : 408 LPM/ 24.42 CFM, Working Pressure :121 Psi /8.5kg/cm2, Tank Capacity : 180 Liters, Refrigerator Drier Inter connecting pipe line



Name of Institute: MSME Testing Centre, Chennai

Sl. No.	Name of Machinery & Equipments and Qty.	Used for	IS Specification No. / Relevant specification	Complete Technical specifications
8	Strong Shaker, Qty-1 Set	Preparation of water samples to test the pest residues	IS 13428, IS 14543, IS10500	Min Capacity separating funnel 6 nos of 500ml / 4 nos of 2000ml, Shaking Methods : Reciprocating Amplitude : 40mm Speed : 50-300 rpm Display : Digital (with on/off timer, single phase connection)
9	Vicat apparatus with accessories, Qty-1 Set	To test Initial/Final setting time for cement of all grades	IS 269:2015, IS 5513	Apparatus shall meet all the requirements mentioned as per IS 5513 which includes construction, parts and operation etc
10	Digital Balance, Qty-1 Set	for cement lab to test Water absorption percent by weight	IS 15622: 2017 and IS 269:2015	Range 0-10 kg, LC-0.02 gram
11	Air-conditioning system, Qty-3 Set	for cement lab to maintain environmental condition 25 ± 2 °C.	IS 15622: 2017 and IS 269:2015	Split A/C- 2 T Capacity
12	Dial Calibration Tester Qty-1 Set	To Calibrate Dial gauges of plunger type	IS 2092:1983	LC 0.0002 mm, Range 0-25 mm
13	Oxygen Index apparatus with oxygen indicator with Galvanic sensor, Qty-1 Set	To test oxygen index of inner insulation (in general)	IS 10810 part 58	Accuracy class: 0.5 class Accessories: Attached with gas pressure gauges/PID Temp controllers.
14	Oxygen Index apparatus with oxygen indicator with paramagnetic sensor, Qty-1 Set	To test oxygen index of Sheath (in general)	IS 10810 part 58	Accuracy class: 0.5 class Accessories: Attached with gas pressure gauges/PID Temp controllers
15	Smoke density tester, Qty-1 Set	To test smoke density of cables	IS 10810 part 59 & ASTM D-2843	Accuracy class: 0.5 class Accessories: Provision to connect printer to get print out of graph of time Vs Absorption
16	Halogen acid gas testing apparatus with calibrated flow meter and quartz tube, Qty-1 Set	To test halogen acid gas resistance of cables	IS 10810 part 59	Accuracy class: 0.5 class, Tube furnace with digital temperature controller upto 850 °C, Accessories: Combustion boat/ Combustion tube/wash bottles/
17	Multi cell Ageing oven, Qty-1 Set	Ageing test of cables	IS 10810 part 60	size: inner: 360mm x 360mm x 360mm, temp-upto 250°C, Number of cells : 4, Accuracy class: 0.5 class, Accessories: Individual PT 100 sensor for each cell, Individual temp. Controller PID for each cell; stand with wheels
18	Thermal stability test apparatus Qty - 1set	Thermal stability/ resistance test of cable	IS 10810 part 60	Meet the requirements as per IS. Accuracy class: 0.5 class, Accessories: Fixture for test: Glass tube: 5mm OD/4mmID 110mm length
19	Cold chamber Qty- 1set	Precondition for cold bend test PVC insulation	IS 694	minus 20 degree celcius, Accuracy class: 0.5 class, Inner storage size 500 mm x 500 mm x 500 mm

Name of Institute: MSME Testing Centre, Chennai

Sl. No.	Name of Machinery & Equipments and Qty.	Used for	IS Specification No. / Relevant specification	Complete Technical specifications
20	Fixture for Cold impact test apparatus Qty- 1set	Performing the cold impact test of cable	IS 694	500mm long x 300mm x 100mm, Accuracy class: 0.5 class, Fabrication
21	Fixture for Cold bend test Qty- 1set	Performing the cold bend test of cable	IS 694	with 8 mandrels of 25mm dia, 500mm long x 300mm x 100mm Accuracy class: 0.5 class, Fabrication
22	Flame retardance test apparatus Qty- 1set	To perform Flame retardance test	IS 694	Test Chamber with apparatus 1m x 2m x 4m height As per IS 10810 part 61 & 62 with Wooden stool
23	Torsion testing machine. Qty- 1set	For Torsion and wrapping tests of Aluminium and steel wires)	IS 398 part 2	1.2metre bed length; Lathe shaped both side chucks to hold metal wires of 1inch dia Chuck dia From base to chuck mid point 210 mm length between two chucks of 180mm/130mm both sides 0.5 HP 230V Single phase 4pole(1440 rpm) motorised with option to forward and reverse Necessary gears installed Final speed 45 to 55 rpm speed Accessories: Counters to count rotations; chuck key
24	Dumbell "DIE" Qty- 1set	To prepare sample of inner and outer insulation	IS 10810 Part 7	Dimention of the dies shall be as per Figure 1 and .Figure 1 size 2 as per the designs given in IS 10810 part 7 Accessories: Storing cases
25	SS Tank without anti-corrosive paint Qty- 1set	Underground cable joint HV test	IS10333	Size: 8 by 4 by 2 feet and as per sketch for Cable joint immersion test Made with SS 304 grade sheet of 2 mm thick(for sides) and 3 mm thick(for bottom) Movable castor wheel ; Inlet tap; Drain plug and valve
26	28 Amps Single phase variac Qty- 1set	Load test for food mixer	IS4250	Single phase 250V 28Amps load capacity copper wound, continuously variable But to compatible with existing 1500 A current injection kit Accessories: Extra 20 carbon brushes
27	Copper Shunt for Temp rise test Qty- 1set	Temperature rise test	IS 5561	(5000 Amps load) Silky copper wired shunt with copper pads at both ends to carry 5000 Amps load
28	Copper Shunt for Temp rise test Qty- 1set	Temperature rise test	IS 5561	(8000 Amps load) Silky copper wired shunt with copper pads at both ends to carry 8000 Amps load
29	Three phase Primary injection kit Qty- 1set	Temperature rise test / heat cycle test	IS 5561	Input 415 V 50 Hz Three phase supply with connecting cables (4 wire) Output: 8000 Amps AC with servo controlled to maintain ± 10 Amps or much superior; Oil cooled(with transformer oil) The output copper Terminal should have adequate thickness and well insulated with hylem board; Sturdy sheet metal enclosure (Openable panels)with movable castor PU Foamed wheels; Automatic features(Immediate to zero when input power fails); Alarm/hooter; short circuit protection; MCB; 0 to 8000 Amps Digital LED 0.2 class accuracy Ammeter;Necessary Digital voltmeter, Frequency meter; Optional Accessory : One LED Digital clock ; Spare Carbon brushes (30 minimum)

Name of Institute: MSME Testing Centre, Chennai

30	Step-up Transformer with Digital AC Voltmeter & ammeter for output Qty- 1set	For general load testing of lighting/SPT switches	IS 4250	(Horizontal type Dimmerstat Model) Input: 180 to 250V Output: 250 to 300 V 25 Amps AC Accuracy: 0.5 class Voltmeter & ammeter 1.5 metre connecting wire with crocodile clip ends (Single phase 3 wire: Ph/Ne/E)
31	Set of SIEVES made of steel mesh Qty- 1set	Grinding test of food mixture	IS: 4250-1980(RA2014)	1400 microns, 1000 microns, 710 microns, 500 microns, 355 microns, 250 microns, Standard diameter,
32	Weighing balance Qty- 1set	Mass test Grinding material of food mixture	IS: 4250-1980(RA2014)	0 to 6kg, gram least count till 2 kg; 1gram least count thereafter Accuracy:0.5 class Calibrated standard brass weights, 100g/200g/500g/1 kg
33	LPG Gas cylinder with Regulator Qty- 1set	Flame proof test of PVC cable	IS:694	Cylinder capacity shall be 2 Kg
34	Burner with clamp and stand Qty- 1set	Flame proof test of PVC cable	IS 10810 part 53	As per Figure 1 of IS 10810 part 53
35	Wheatstone bridge Qty- 1set	Resistance of conductor	IS 694	As per IS 694 with Standard resistors
36	Digital Torsion testing machine, Qty-1 Set	For Torsion and wrapping tests of Aluminium and steel wires	IS 4454 (Pt1) Machine shall meet the requirement of IS: 1717:2018	Suitable for Torsion and Twist test on various metal rods and flats. Torque measurement by Torque cell & angle of twist on LCS display provided on data Acquisition System. Shall have facility for the counting the no of twists. Span length min 1 mt . with grips having HRC 55 min. the range of the wire shall be dia 0.7 mm to 19 mm Angle of twist resolution is 0.1 degree. Accuracy of torque measurement $\pm 1\%$ in the range from 4% to 100% of machine capacity. Provisions to conduct test slowly by a handle which facilities finding modules of rigidly "G" facility for conducting to the computer. Various models maximum torque capacity from 100 NM to 3000 NM.
37	Double Disc Polishing Machine, Qty-1 Set	Sample surface preparation for hardness testing, micro and macro examination	IS 4454, IS 2830, IS 2831, etc	Two 200 mm Aluminium discs over which polishing paper or cloth can be stretched. Separate Motors for individual disc of $\frac{1}{2}$ HP Variable Speed from 50-1500 RPM Variac Variable Transformer for smooth speed change. Single Phase High torque AC motor. Water inlet/Outlet for wet polishing. Flexible water jet with control valve. The operation of the machine with 220 V AC
38	Optical Brinell Hardness Tester, Qty-1 Set	Testing of Hardness	IS 1500 and for testing of ferrous and non ferrous materials	Machine Designed with a hydraulic power pack and control circuit effortless loading unloading operation, an 'optical device' with 14x magnification provided front to project I ball impression on glass screen with a micro meter measuring system with 0.01 mm accuracy. The indenter swivels and projects dia of ball impression immediately after unloading operation which avoids additional time for measurement of ball impression to get real Brinell number on product testing.

Name of Institute: MSME Testing Centre, Chennai

Sl. No.	Name of Machinery & Equipments and Qty.	Used for	IS Specification No. / Relevant specification	Complete Technical specifications
39	Trinocular Inverted Material Microscope with accessories, Qty-1 Set	To test micro and macro hardness and Micro structure examination	IS 4454, IS 2830, IS 2831, etc	<p>Siedentop observation head inclined at 30° rotatable at 360°</p> <p>Vertical phototube for micro photography, Diopter adjustment ring on ocular tube (+/- 5)</p> <p>Inter pupillary distance from 52mm to 75mm.</p> <p>Eyepiece(Anti fungus)</p> <p>Wide field eyepiece 10X, 20X (paired)</p> <p>F.O.V. 22mm.</p> <p>Objectives (Infinity corrected)</p> <p>M Long working distance plan 10X (WD 11.0mm) ,20X (WD 9.0mm) , 50X (WD 3.8mm) , 100X (S.L.) Dry (wd.0.4m)</p> <p>Magnifications: 100x, 200x, 400x, 1000x, 2000x</p> <p>Mechanical Body</p> <p>Co-axial focusing system with large knobs, PRE-FOCUSING LEVER & TENSION ADJUSTMENT RING.</p> <p>Quadruple nosepiece on ball bearing.</p> <p>Mechanical stage is 180mm X 155mm.</p> <p>Moving range 80mm x 50mm</p> <p>Mechanical stage has low positioned co-axial controls on ball bearing guide ways.</p> <p>Side port with phototube for micro photography.</p> <p>Illuminator</p> <p>illumination. Aperture iris diaphragm and filed iris diaphragm 12V/30W halogen lamp. Adjustable brightness, Filter wheel fixed in light path with blue, green & yellow filters.</p> <p>Polarizing Outfit</p> <p>Analyzer rotatable at 360°. Polarizing & Analyzer can be slide in/out of the optical path.</p> <p>Standard Accessories</p> <p>12V/50W halogen tungsten bulb, operating manual, dust Cover, guarantee card and Styrofoam molded pack.</p> <p>ATTACHMENTS FOR MICROSCOPE</p> <p>1.COLOUR IMAGE CAPTURE SYSTEM</p> <p>Computer Image capture System consist of high resolution USB Camera, C-Mount adopter, Image Grabbing software.</p> <p>2.ACCESSORIES FOR METALLURGICAL MICROSCOPE:</p> <p>a. Micrometer eyepiece 10x with helical focusing System 10mm X 100 parts.</p> <p>b. Grain size measurement eye piece-10X W.F,</p> <p>c. Graph Micrometer disc 100 or 400 square division</p> <p>3. IMAGE. ANALYSIS SYSTEM.</p> <p>A comprehensive yet simple solution very effective for</p>

Name of Institute: MSME Testing Centre, Chennai

Sl. No.	Name of Machinery & Equipments and Qty.	Used for	IS Specification No. / Relevant specification	Complete Technical specifications
	39 contd.	To test micro and macro examination	IS 4454, IS 2830, IS 2831	instantaneous and effortless Quantitative analysis of the microstructure, storage of Images/Report Generation / group viewing / email etc. System Consists of: High Resolution USB Camera, suitable adpater and High end Metallurgical and Metrology software as given below: High end metallurgical Analysis software: For ASTM Grain Size, Inclusion Rating, Nodularity, Graphite flakes, Coating Thickness, Phase % Analysis, Particle Size, Decarburisation, Report generation and many more. Metrology Software For Length, Area, Angle, Perimeter, includes Calibration function for various magnifications.
40	Vickers Hardness Tester, Qty-1 Set	Testing of Hardness	IS 1501 and for testing of ferrous and non ferrous materials	It is suitable for measuring the hardness of precision metallic parts with wide testing range from soft to hard & their accurate results are widely acclaimed. Wide testing range, from soft metal such as lead, up to the hardest, like hardened steel. Tiny indentation allows testing of precision finished parts. Same Hardness number is obtained on the same specimen, regardless of the load applied. Motorized loading and unloading cycle. Built-in projection screen to get accurate results. Capacity 5 to 125 Kg V blocks 2 nos(100 and 150 mm) and anvil flat seater of 100 mm and 200mm
41	Mechanical Extensometer, Qty-1 Set	To tensile testing to detect 0.2% proof stress	IS 1608 to test as per IS 1786, IS 2062, IS:6911,	Measuring range 0 to 3 mm Least Count 1/100 mm Gauge Length (Adjustable) 30 to 120 mm Thickness Od Diameter of 1 to 20 mm Dimensions 120x 50 x 150 mm With 0.01 mm least count, with two dial gauge to minimize the error.
42	Mandrel 13 Nos.	To test bend and re-bend	IS 1599 to test as per IS 1786, IS 2062, IS:6911	Sizes- 13 Nos, Dia. 40, 50, 60, 80, 120, 125, 140, 150, 160, 175, 200, 225, 252
43	Coiling and stretching machine, Qty-1 Set	For Coiling and stretching test for spring steel	IS 4454	Upto 0.7 mm dia of wire covering as per IS 4454. Length of table to accommodate 500 mm min length/ dia of sample. Shall have provision for stretching the wire without any sagging.
44	Warping Tester and Shear strength attachment, Qty-1 Set	For warping test for spring steel	IS 1755 to test as per IS 4454	Upto 3mm dia covering as per IS 4454

Name of Institute: MSME Testing Centre, Chennai

Sl. No.	Name of Machinery & Equipments and Qty.	Used for	IS Specification No. / Relevant specification	Complete Technical specifications
45	Domestic pressure cooker test rig, Qty-1 Set	Bursting Pressure Test, Test for Removal of Outer Lid under pressure, Test for Removal of Inner Lid under pressure, Bending strength, Impact resistance test, Fatigue resistance test (automation apparatus)	IS IS 2347:2017, IS 13395:1995	Fabricated Fixtures as per Drawing provided as per IS IS 2347:2017, IS 13395:1995 to test various tests as per clauses as mentioned below CI 8.5- Bursting Pressure Test CI 8.6.1 - Test for Removal of Outer Lid under pressure CI 8.6.2 - Test for Removal of Inner Lid under pressure CI 5.2- Bending strength CI 5.4- Impact resistance test CI 5.5 –Fatigue resistance test
46	air-conditioning for pr cooker testing lab Qty- 2nos	To maintain environmental condition $25 \pm 2^{\circ}\text{C}$	IS IS 2347:2017, IS 13395:1995	Split A/C- 2 T capacity to maintain temperature $25 \pm 2^{\circ}\text{C}$
47	OES for Non Ferrous and Ferrous Material Testing,	Chemical composition of ferrous & Non ferrous including Nitrogen and oxygen	IS 2831, IS 2830, IS 2062, IS 1786, IS 4454, IS 694, IS 1554, IS 10723, IS 21, IS 23, IS 202, IS 305 etc	Base unit & standard hardware software, Fe base & Al base & Cu Base with Suitable CRMs samples. Fe Base Low alloy steel Cr-Ni steel Stainless steel Ferritic stainless steel Cr steel Low alloy cast- iron Hi-Alloy cast- iron Tool steel Cu base Brass Bronze Pure copper Al base Pure Aluminium Al/Si/ Alloys Al/Cu Alloys , Al/Si/Mg Alloys Details for Cu base Low – alloy aluminium, Al-Si, Al-Mg, and Al-Cu detectors for analyzing all channels in Fe, Al, Cu bases. Channels for Analyzing of nitrogen (with detection of min 0.0002 % to max 1.10 %) and oxygen analysis (with detection of min 0.0015 % to max 0.50 %). Analysis software with calibration modules & software for processing, evaluation and archiving of analysis results.

Name of Institute: MSME Testing Centre, Chennai

Sl. No.	Name of Machinery & Equipments and Qty.	Used for	IS Specification No. / Relevant specification	Complete Technical specifications
	47 contd..			<p>Recalibration samples Requirements to be part of supply:</p> <p>1.Fe Orientation : Fe Small Samples ,Low Alloy Steel , Free Cutting Steel ,Cast Iron, Stainless Steel , Tool Steel , Mn Steel ,Cr Hard ,Ni Resist</p> <p>2. Cu Orientation: Cu with low percentage, Pure Copper,Brass ,Cu/Ni Alloys ,Gun Metal ,Cu/Sn/Pb/Alloys, Cu/Al Alloys</p> <p>3.Al orientation: Aluminium Global , Al low percentage,Pure Al, Al/Si/ Alloys ,Al/Cu Alloys , Al/Si/Mg</p> <p>Additional features cum Accessories like Operational Spares & Consumables Package for one year Maintenance Spare Parts Package Spark Stand Plate for Small samples Ceramic Disc Set of small sample adapter in support with special calibration module for Fe, Al and Cu alloys to analyse Wire adapter 0.3 to 10 mm diameter (min 2 adapters covering the range) and thin sheets 0.1 to 1mm thickness Suitable CPU, Monitor, Printer & Keyboard 2 in 1 Sample Polishing Machine for sample preparation of Ferrous, Aluminium and Copper Alloys Suitable On-line UPS with built in Isolation transformer with minimum backup ½ an hour. Double Stage Stainless Steel Pressure Regulator Operating and service manual with CD and hard copy-3nos each.</p>

