



**INDIAN INSTITUTE OF TECHNOLOGY BOMBAY**  
**MATERIALS MANAGEMENT DIVISION**  
Powai, Mumbai 400076.

Ref. PR No. 1000051518

Rfx. No. 6100002540

Item Description – **DTA TGA DSC Instrument (Qty: 1)**

<b>Sr. No</b>	<b>Detailed Technical Specification</b>	<b>Technical Compliance (Yes / No)</b>	<b>Additional Information (if any)</b>
<b>1.</b>	<p><b>DTA TGA-DSC Instrument:</b></p> <p><b>a) Temperature system</b></p> <ol style="list-style-type: none"><li>1. Temperature Range: ~ -35 °C to ~ + 1100 °C</li><li>2. Heating Rate: 0.1 – 100 K/min</li><li>3. Temperature Accuracy: <math>\pm 0.2</math> K</li><li>4. Temperature Precision: <math>\pm 0.02</math> K</li></ol> <p><b>b) Balance and weighing system</b></p> <ol style="list-style-type: none"><li>1. Weighing Range: Up to 1.0 g sample load</li><li>2. Resolution: 0.1 <math>\mu</math>g</li><li>3. Drift: &lt; 1.0 <math>\mu</math>g/hour</li><li>4. TGA Sensitivity: 0.1 <math>\mu</math>g</li><li>5. Mass Change Range: Up to 100% of sample weight</li></ol> <p><b>c) TGA specifications</b></p> <ol style="list-style-type: none"><li>1. Mass accuracy: <math>\pm 0.1\%</math></li><li>2. Mass precision: <math>\pm 0.01\%</math></li><li>3. Purge Gas Flow Range: Typically, 0–200 mL/min</li><li>4. Supported Gases: N<sub>2</sub>, O<sub>2</sub>, Air, Ar, CO<sub>2</sub></li></ol>		

	<p><b>e) Atmosphere control</b></p> <ol style="list-style-type: none"> <li>1. Gas Switching: Up to two gas lines (protective + reactive gas)</li> <li>2. Flow Control: Mass flow-based electronic gas flow regulation</li> <li>3. Applications: Oxidative, inert, dynamic atmosphere experiments</li> <li>4. Temperature Range: approx. +5 °C to +20 °C output</li> <li>5. Cooling Capacity: ~300 W at 20°C</li> </ol> <p><b>f) Software Feature:</b></p> <ol style="list-style-type: none"> <li>1. Real-time data acquisition</li> <li>2. Baseline correction, curve smoothing, derivative curves</li> <li>3. Included Option: SW-Option DSC Evaluation <ol style="list-style-type: none"> <li>a. Heat capacity (Cp) calculations</li> <li>b. Peak integration</li> <li>c. Phase transition analysis</li> <li>d. Glass transition detection</li> <li>e. Auto-evaluation templates</li> </ol> </li> </ol> <p>Warranty: 1 year</p>		
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