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|  | उत्पाद मानक संचारित<br>अभियांत्रिकी निर्देश   | <b>PRODUCT STANDARD<br/>CAPACITOR<br/>ENGG. INSTRUCTION</b> | <b>CR 90105</b>  |
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| <b>Title : CAPACITOR OIL</b>  |   |   |  |
| <b>1.0</b>  | <b>GENERAL :</b><br><br>This specification governs the quality of unused, pure, clear, synthetic electrical insulating liquid used for Capacitor Impregnation.<br><br>The liquid shall be stable, chemically and physically on heating and compatible with capacitor grade PP film, other materials used in capacitor insulation system such as cable paper, tissue paper etc. the liquid shall contain min. 40 % of Benzyle toluene. |   |  |
| <b>2.0</b>  | <b>APPLICATION :</b><br>It is used as liquid dielectric and insulating medium in capacitors.  |   |  |
| <b>3.0</b>  | <b>COMPLIANCE WITH NATIONAL STANDARD:</b><br>There is no Indian Standard covering this type of material. However assistance has been taken from IS : 13067 - 1991.  |   |  |
| <b>4.0</b>  | <b>TEST METHOD:</b><br>The test shall be conducted in accordance with method indicated against each clause.   |   |  |
| <b>5.0</b>  | <b>TEST SAMPLE :</b><br>5 Litre sample drawn from each manufacturing batch shall be supplied for testing at BHEL lab.   |   |  |
| <b>6.0</b>  | <b>SAMPLING:</b><br>The sampling shall be done in accordance with IS : 6855.<br><br>Dissipation factor and Resistivity shall be done on all individual samples drawn as per IS : 6855 and all other tests shall be done on composite sample.  |   |  |
| <b>7.0</b>  | <b>PHYSICAL PROPERTIES:</b><br>SPECIFIC GRAVITY AT 27°C : 0.97 TO 1.01 (IS : 335)   |   |  |
| पुन Rev. 01<br>दि. Dt.<br>23.02.17  | Distribution<br>CPE-1<br>QCX-1<br>CPM (P)-1   | स्वीकृत किया<br>Approved By (Pravish Varshney)              | <div style="display: flex; justify-content: space-between;"> <div>           तैयार किया<br/>Prep. By : M. K. Mehta         </div> <div>           जारी किया<br/>Issued By.<br/>CPE /STD.         </div> <div>           दिनांक<br/>Date<br/>19.10.10         </div> </div> |

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| 7.2 | <b>FLASH POINT, COC °C :</b><br>130°C Minimum (Annex. C of IS 13067) or 140°C Minimum. (Pensky Marten's Apparatus IS : 1448 Part 21)                    |
| 7.3 | <b>KINEMATIC VISCOSITY AT 37.8°C : 2.4 to 3.2 cST.</b> (IS:1448 Part 25).   |
| 7.4 | <b>WATER CONTENT : 100 ppm Max.</b> (IS 335).   |
| 7.5 | <b>REFRACTIVE INDEX : 1.56 ± 0.02</b> (ASTM D 1218).<br>This is a typical characteristics of the oil and testing is only for reference.                 |
| 8.0 | <b>CHEMICAL PROPERTIES:</b>   |
| 8.1 | <b>NEUTRALISATION VALUE (TOTAL ACIDITY) :</b><br>0.01 mg KOH/gm. Max. (ASTM D 974)  |
| 8.2 | <b>ACTIVE EPOXIDE CONTENT:</b><br>0.4 TO 0.8 % by Wt. (Titrate against N/10 Hydrobromic Acid Solution)/ 1.1 TO 2.4 mg HCL/g (as per ASTM D 1651)        |
| 9.0 | <b>ELECTRICAL PROPERTIES:</b>   |
| 9.1 | <b>DIELECTRIC STRENGTH (BDV) 2.5 mm GAP : 70 kV Min.</b> (IS : 6792)  |
| 9.2 | <b>DIELECTRIC CONSTANT 50 Hz / 100 Hz at 90°C :</b><br>Min. 2.37 (IS 6262)  |
| 9.3 | <b>DISSIPATION FACTOR AT 50 Hz / 100 Hz AT 90°C :</b><br>0.4% Max. (IS : 6262)  |
| 9.4 | <b>RESISTIVITY AT 90°C : 25 X 10<sup>12</sup> Ohm-cm Min.</b> (IS : 6103)   |
| 9.5 | <b>POUR POINT:</b><br>This is a typical test and shall be conducted once for every 10 batches of supply. The limiting value shall be -50°C (ASTM D 97). |

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Test values obtained for compliance of all properties given in Clause 7 to 9.

When stated on the order, Capacitor oil shall be delivered on road tankers specially reserved for the purpose and shall be suitably sealed so as to exclude ingress of moisture.

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| CR 90105 Rev.01             | : | Capacitor Oil |
| BHEL ORDER NO.              | : |               |
| MANUFACTURER'S & SUPPLIER'S | : |               |
| NAME AND GRADE              | : |               |
| BATCH / LOT NO.             | : |               |
| DATE OF MANUFACTURE         | : |               |
| NET WEIGHT / GROSS WEIGHT   | : |               |
| NO. OF DRUMS                | : |               |
| QUANTITY IN LITRES          | : |               |