

PRODUCT PURCHASING SPECIFICATION TRANSFORMER ENGINEERING DEPARTMENT BHEL, BHOPAL	Specification No. TRE-207 Page 1 of 2 Rev. 01 Dt.: 02.01.2016
---	--


SPECIFICATION FOR HEAT CONVEYOR SOLVENT

1.0	GENERAL		
	The specification governs the quality of heat conveyor solvent. It is a low viscosity solvent, more like kerosene and with high flash point.		
2.0	APPLICATION		
	Used in Vapour phase plant of Transformers and Reactors, as the heat carrier.		
3.0	COMPLIANCE WITH NATIONAL STANDARDS		
	There is no Indian standard covering this type of material.		
4.0	FREEDOM FROM DEFECTS		
	The material shall be clear and free from sediments, suspended and un-dissolved matters.		
5.0	TEST SAMPLES		
	1 liter sample shall be drawn from each consignment for testing and approval.		
6.0	PROPERTIES		
	The testing shall be done as per test method specified below.		
	Routine Test		Test Method
4.1	Distillation Range	180 deg. C- IBP- MIN 220 deg. C- FBP- MAX	ASTM D 86
4.2	Residue on evaporation	1.5 % by Volume, max.	ASTM D 1353
4.3	Specific Gravity at 15 deg C	0.78-0.82	ASTM D 4052
4.4	Flash Point Abel	62 deg. Min.	ASTM D 93
4.5	Copper Strip test	Not Worse than No.1	ASTM D 130
4.6	Dielectric Constant at 20 deg. C (500 V, 50Hz)	2.66 Max	ASTM D 924
4.7	Loss Factor at 20 deg. C (500 V, 50Hz)	0.018 Max.	ASTM D 924
	Type Test		
4.8	Colour Saybolt	30	ASTM D 156
4.9	Aromatic Content	17% by Volume Max.	ASTM D 1319
4.10	Mercaptans (Doctor Test)	Negative	ASTM D 235
	Note- All effort shall be done to perform the test as per ASTM listed above. However, if the same is not possible, equivalent Indian/International standard can be referred.		

REV	DATE	ALT CKD	REV 01	DATE	ALT CKD	REV 00	NAME	SIGN	DATE
				16.07.16	<i>G.Lalwani</i>				
			Note regarding testing added.			PREP	G.Lalwani	-sd-	01.01.16
						CKD	S K Gupta	-sd-	01.01.16
						APD	JS Kuntia	-sd-	02.01.16

DWI/TCB/TRE/010

5.0	INSPECTION & DESPATCH :
5.1	Material shall be inspected / tested as per attached QA Plan.
5.2	Three sets of inspection and test report, descriptive leaf-lets, operation shall be sent along- with dispatch document. One set shall be supplied along-with the material.
5.3	The material shall be supplied in securely closed mild steel galvanised drums, protected from light and stored in cool well ventilated place. Each container shall be marked with the following information: Heat Conveyor Solvent BHEL order No. Manufacturer's supplier's name Batch no Date of Manufacturer & Expiry, if any Quantity supplied Safety precautions
6.0	DEVIATION :
	Any deviation from the above specification may be clearly indicated with proper justification

		BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL STANDARD QAP FOR HEAT CONVEYOR SOLVENT							QAP NO : QA/TCB/BO/45 Rev : 0 DATE : 5/1/2016 PAGE : 1 OF 1	
SL NO.	COMPONENT/ RAW MATERIAL	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY	REMARKS
PHYSICAL INSPECTION: Shall be clear and free from sediments, suspended and undissolved matters.										
1	Heat conveyor solvent		MAJOR	VISUAL	SAMPLE	BHEL Spec-TRE 207	BHEL Spec-TRE 207	TC	BHEL/TPIA	CHP
FINAL INSPECTION & TESTING :										
A) ROUTINE TEST										
1) Distillation range 2) Residue on evaporation 3) Specific Gravity at 15 deg C 4) Flash Point Abel 5) Copper strip test 6) Dielectric constant at 20 deg C (500 V 50Hz) 7) Loss Factor at 20 deg C (500 V 50Hz)										
B) TYPE TEST										
1) Colour Saybolt 2) Aromatic content 3) Mercaptans (Doctor Test)										
4	FINAL INSPECTION / TESTING		MAJOR							
LEGEND : TC/TR- Test certificate/ Test report. TPIA = Third Party Inspection Agency CHP = Customer Hold Point										
Notes: 1) Samples to be drawn in Presence of BHEL/TPIA. 2) One sample to be drawn from each Lot. 3) CHP is only for Indigenous Suppliers. 4) Sample Testing shall also be done at our works.										

PREPARED BY
 सत्येंद्र कुमार सिंह / Satyendra Kumar Singh
 सहायक अभियंता / Asstt. Engineer
 सुरक्षा अभियंता-टी.सी.बी. / Quality Assurance-TCB
 डी.एच.ई.एल., भोपाल / BHEL, BHOPAL

APPROVED BY
 सुरेश कुमार गुप्ता / S. K. GUPTA
 उप महाप्रबंधक / Dy. General Manager
 सुरक्षा अभियंता-टी.सी.बी. / Quality Assurance-TCB
 डी.एच.ई.एल., भोपाल / B.H.E.L., BHOPAL