



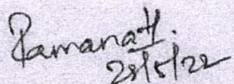
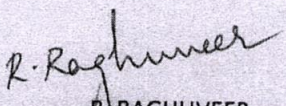
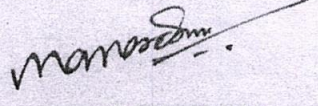
**BHARAT HEAVY ELECTRICALS LIMITED**  
**SEAMLESS STEEL TUBE PLANT**  
**TIRUCHIRAPPALLI-14**

Ref. No. SSTP:Chem:Phosphate:01  
Rev: 01  
Date: 28-05-2022  
Page: 01 of 01

**Requirements for Phosphate for cold drawing of tubes**

**Purpose: To treat the surface of the steel tubes for protection against corrosion and enabling coating of lubricant for smooth cold drawing of tubes.**

1	Specific Gravity at ambient temperature	1.4 to 1.6
2	Total acid for 10 ml of 5% solution	30 to 50 Points
3	Free acid for 10 ml of 5% solution	2.5 to 6.0 points
4	Operating Temperature of bath in ° C	70 to 80
5	Soaking Time	10 - 15 Minutes (for Carbon Steel) 15 - 20 Minutes (for Alloy Steel)
6	Coating thickness in Microns	Minimum 7
7	Corrosion Protection	Tube surface treated with phosphate shall not get rusted for 3 days in normal atmospheric in-door condition (at ambient temperature).
8	Application method	Dipping
9	Soap coating test	Smooth uniform white coating of Soap shall be formed on the surface of tube (test piece)
10	Compatibility with phosphate supplied by other suppliers (Established suppliers at SSTP/BHEL)	Compatible
11	Addition of toners/Accelerator	Not accepted
12	Sludge formation	Formation shall be minimum and to be settle at the bottom
13	General Conformance to IS Specification	IS:6005:1998 (R-2002) Clauses: 3.0, 4.1, 4.2, 4.2.1, 5.2 7 6.0 including Table-3
14	Keeping Property (Shelf life) – in Months	12
15	Packing	The phosphate shall be supplied in damper proof HDPE carboys of 30 Liters capacity with the following marking. 1. Phosphating Chemical for BHEL SSTP use only 2. Supplier Name 3. Batch No. & Date 4. Quantity 5. Shelf Life 6. BHEL Specn. SSTP:Chem:Phosphate
16	Material Safety Data Sheet (MSDS)	Relevant MSDS shall be furnished
17	Test Certificate	The supplier shall furnish test certificate for the above requirements along with supply.

Prepared by	Reviewed by	Approved by
 N. RAMANATHAN DY.MANAGER/CMP	 R. RAGHUVeer MANAGER/HM & CM PRDN	 K. MAHENDRAN AGM/OPERATIONS/SSTP