



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

Ref. No. SSTP:Chem:Phosphate:01  
Rev: 00  
Date: 18-01-2014  
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**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..





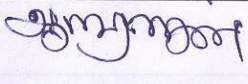
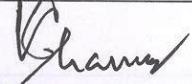
**BHARAT HEAVY ELECTRICALS LIMITED**  
**SEAMLESS STEEL TUBE PLANT**  
**Cold Mill Production**

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18.0	<b>Product Performance Evaluation</b>	
18.1	Sample Test at SSTP Lab (For preliminary testing before qualifying for field trials)	<ol style="list-style-type: none"><li>1. New vendors are required to supply sample quantity and these samples will be tested in BHEL/SSTP laboratory for compliance to the above requirements (SI No. 1 to 17).</li><li>2. If test results meet our requirements, the same will be informed to the vendor through Purchase for further field trial</li></ol>
18.2	Field trial	The vendors to supply phosphate against a trial order for field trial and trial will be strictly done in accordance with Vendor development procedure Ref.SSTP:CM:Phosphate:01 (Latest)

**Note:**

1. For existing vendors who have already been qualified through samples tested at SSTP Lab and subsequent field trial, the above requirements (1 to 17) are alone applicable. However, the qualification shall be re-ascertained once in 3 years again through field trial.
2. For new vendors under development, all requirements (1 to 18) are applicable. This has to be established through samples tested at SSTP lab and subsequent product performance evaluation through field trial.

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