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CERTIFICATE OF ANALYSIS

NAME	PBTC 50% CAS NO. 37971-36-1
LOT NO.	
QUANTITY-TESTED	22.5MT-500ml

TEST ITEM	STANDARD	RESULT
Appearance	Colorless or Light yellow transparent liquid.	Light-yellow transparent liquid
Active Content;%	49-51%	50.05
Phosphoric Acid(as PO₄³⁻);%	0.2 Max.	0.08
Phosphoric Acid(as PO₃³⁻);%	0.5 Max.	0.21
Density(20℃);g/cm³	1.27 Min.	1.283
PH Value(1% water solution)	1.5-1.9	1.82
Chloride(Cl);ppm	10 Max.	1.9
Iron(Fe);ppm	10Max.	2.3
Color(APHA)	20.MAX	15
IDENTIFICATION	QUALIFIED	
ANALYST	MS.LI	DATE
CHECKER	MS. ZHANG	2016-01-29
		DATE
		2016-01-29

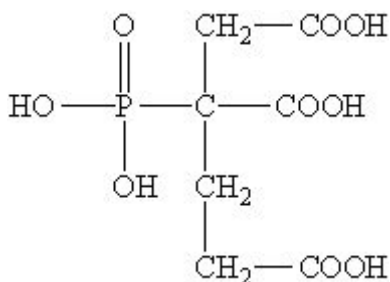
2-Phosphonobutane -1,2,4-Tricarboxylic Acid (PBTC)

CAS No. 37971-36-1

Molecular Formula: $C_7H_{11}O_9P$

Molecular weight: 270.13

Structural Formula:



Properties:

PBTC has low content of phosphoric, has structural features of both phosphoric acid and carboxylic acid group, which enable its excellent scale and corrosion inhibition properties. Its antiscaling property under high temperature is far better than that of organophosphines. It can improve zinc salt solubility, has good chlorine oxidation tolerance and good composite synergy.

Specification:

Items	Index
Appearance	Clear, colorless to pale yellow aqueous solution
Active acid %	50.0 min
Phosphorous acid(as PO_3^{3-})%	0.5 max
Phosphoric acid(as PO_4^{3-})%	0.2 max
Density (20°C) g/cm ³	1.27 min
pH(1% water solution)	1.5~2.0
Fe, mg/L	10.0 max
Chloride mg/L	10.0 max
Color APHA (Hazen)	20.0 max

Usage:

PBTC is a high efficient agent as scale and corrosion inhibitor. **PBTC** is the excellent stabilizer for zinc salt. It is widely used in circulating cool water system and oilfield refill water system as scale and corrosion inhibitor, suitable to composite with zinc salt and copolymer. **PBTC** can be used in situations of high temperature, high hardness, high

alkali and high concentration index. In lavation fields, it is used as chelating agent and metal detergent.

PBTC is usually used together with zinc salt, copolymer, organophosphine, imidazole and other Water Treatment Chemicals. When used alone, the dosage of 5-15mg/L is preferred.