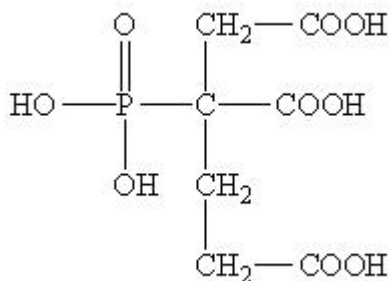


## 2-Phosphonobutane -1,2,4-Tricarboxylic Acid (PBTC)



<b>CAS No.</b>	37971-36-1	<b>EINECS No.</b>	253-733-5
<b>Molecular Formula</b>	C <sub>7</sub> H <sub>11</sub> O <sub>9</sub> P	<b>Molecular Weight</b>	270.13

### Structural Formula



### Product Features

PBTC has low content of phosphoric, its structure contains both phosphonic acid and carboxylic acid group. PBTC is designed to control calcium scale formation and precipitation in highly stressed alkaline industrial water treatment and boiler systems. The anti-scale property of PBTC under high temperature is far better than that of organophosphines. PBTC is chlorine stable, it can also be used for scale control in applications using halogen-based biocides or hypochlorite bleaches. PBTC has good chelating ability for heavy metals, and can eliminate the remobilization of heavy metals from sediments. Besides, PBTC can improve zinc salt solubility and has good composite synergy.

### Applications & Usage

PBTC is widely used in circulating cooling water systems and oilfield supply water systems. PBTC can be used as a high efficient scale and corrosion inhibitor in situations of high temperature, high hardness, high alkali and high concentration index. In lavation fields, PBTC 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.

## Technical Specification

Parameter	Standard
Appearance	Clear, colorless to pale yellow aqueous solution
Active content, %	50.0 min
Phosphorous acid (as $\text{PO}_3^{3-}$ ), %	0.5 max
Phosphoric acid (as $\text{PO}_4^{3-}$ ), %	0.2 max
Density (20°C), $\text{g/cm}^3$	1.27 min
pH (1% water solution)	1.5-2.0
Fe, ppm	10.0 max
Chloride, ppm	10.0 max


## Scale & Corrosion Inhibition Performance

$\text{CaCO}_3$ inhibition	$\text{CaSO}_4$ inhibition	$\text{CaF}_2$ inhibition	Iron control	Sequestration
Excellent	Poor	Excellent	Yes	Good
Steel corrosion inhibition		Calcium Tolerance		
Good		Very Good		

## Package & Storage

PBTC Liquid			
25L Drum	200L Drum	1000L IBC	ISO Tank
			
Storage for 10 months in shady room and dry place.			

## Hazard & Safety Precaution

Hazard Information	Safety Precaution
 Corrosive, Class 8, UN 3265	
Once contacted with eye and skin, flush with plenty of clean water.	

## Alternative Name / Synonyms

- PBTCA
- phosphonobutane tricarboxylic acid
- 2-Phosphonobutane -1,2,4-Tricarboxylic Acid