

PRODUCT EP 60

Product EP60 is a newly developed organic sequesterant for multi-valent metal ions commonly found in textile baths .

Appearance : Light yellow liquid .

pH : 7.7.5

Ionic Activity : Anionic

CHEMICAL COMPOSITION :

Product EP 60 is the sodium salt of an organic phosphorous compound.

GENERAL PROPERTIES :

- 1 - Is a very versatile sequestering agent for all textile operations .
- 2 - Combines the dispersing and de-flocculating properties of the inorganic phosphates with the complexing power of organic sequestrants. This is particularly important for repairing of yarn or fabric which are contaminated with metal ion stains .
- 3 - Maintains its dispersing and complexing power over a wide temperature and pH range, due to its high resistance to hydrolysis .
- 4 - Sequesters a number of multi-valent ions ,e.g. calcium, magnesium, copper, iron at stoichiometric and is more effective than E.D.T.A. based materials (See application Levels) .
- 5 - When used at very low concentrations, delays or prevents the precipitation of metal salts from solution , e.g. **Product EP 60** is very good at preventing calcium carbonate scale formation .
- 6 - Is liquid and easily handled and diluted .

7 - Being an organic phosphorous compound, provides buffering action under weakly acid conditions, e.g. disperse dye baths .

APPLICATION :

Due to its combines properties of complexing and dispersing, Product EP 60 is a highly effective product for use in the textile trade. It may be used in two basic modes of operations :-

(a) Prevention of metal ion contamination :

By adding **Product EP 60** to textile treatment baths, such as scouring, bleaching, dyeing etc., common problems which normally arise due to metal ion contamination are prevented. These include :

- Iron stains in alkali scouring baths.
- Decomposition of hydrogen peroxide bleach baths due to presence of iron or copper .
- "Bluing" of certain disperse dyes on synthetic fabrics, e.g. Disperse Red 60 .
- Deposition of inorganic calcium and magnesium salts onto scouring, bleaching and dyeing machines. A further advantage of **product EP 60** is its ability to sequester different metal ions under varying pH and temperature conditions. Whereas the tetra sodium salt of ethylene di-amine tetra-acetic acid (NA EDTA) is an ideal product for the complexing of calcium and magnesium ions, it will not sequester iron under alkali conditions, nor withstand severe oxidising agents such as hydrogen peroxide . **product EP 60** provides excellent sequestering power under those condition for calcium, magnesium, copper and iron.

(b) Removal of stains caused by metal ions :

Due to its exceptional dispersing power, **product EP 60** is highly effective remover of iron stains from contaminated yarns or fabrics .

Due to its ability to work within a wide pH range, acid or alkali conditions can be used for the treatment .

In exceptional cases, two separate treatments may be required . The temperature may be raised to boil if the quality of fabric allows .

APPLICATION LEVEL :**(a) Prevention of metal ion contamination :**

Product EP 60 is stronger on weight/ weight basis than 38% active Na₄ EDTA solution for the complexing of metal ions.
The following table gives an example :

Mg of CaCO ₃ Sequestered by 1.0 g. of product (pH11)	Product
250	Product EP 60
100	Na ₄ EDTA 38% Solution

In a situation with 100 ppm of calcium carbonate, e.g. 10.5 of metric hardness, 1.0 g/1 of Na₄ EDTA (38% w/w soln.) or 0.4 g/1 **product EP 60** would be required to complex the systems. Alternatively, **product EP 60** is 2-3 times stronger than Na₄ EDTA (38% w/w soln.) depending on the pH, temperature and metal ions present .

(b) Removal of stains :

In the case of mild staining due to metal contamination, e.g. iron stains, treat the fabric or yarn in 0.5 g/1 **product EP 60** . The temperature may be taken to the boil if the fabric allows. For heavier staining, increase the level to 1.0 g/1 and give double treatment if the staining persists. For best results employ 1-2 g/1 soda ash or other suitable alkali .

HANDLING PRECAUTIONS :

The usual precautions in handling chemicals be observed and it is recommended that operatives should wear goggles and gloves when handling the concentrate product. Any contact with the skin or eyes should be washed immediately with copious amounts of cold water .

Please stir well before use.

Keep @ temperature max. 40°C.