

JAYPOL HS60

WATER TREATMENT SCALE INHIBITOR

Product Overview

JAYPOL HS60 is a sulphonated copolymer comprised of acrylic acid and 2-acrylamido-2-methyl propane sulfonic acid designed for use in process water applications. Typical uses for **JAYPOL HS60** include boiler water applications where 21 CFR 173.310 is required and cooling water applications in stabilised phosphate and stabilised phosphate/zinc programmes. **JAYPOL HS60** is also an effective additive for the control of calcium carbonate, calcium sulfate, calcium phosphonate, colloidal iron stabilisation and dispersion of iron oxides and hydroxides.

Benefits

- Meets Requirements of US FDA 21 CFR 173.310 Boiler Water Additives
 - 60:40 w/w Acrylic Acid:2-acrylamid 2-methyl propane sulfonic acid Copolymer
 - $M_w = 9,900$ minimum
- Effective for control of a wide range of foulants:
 - Hydroxyapatite
 - Iron Oxides and Hydroxides
 - Colloidal Iron
 - Silt
 - Calcium Phosphate
 - Calcium Phosphonate
 - Zinc
 - Calcium Carbonate
 - Calcium Sulfate
- Highly tolerant to stressed water conditions
 - High pH and alkalinity
 - High calcium concentration
 - High dissolved solids
- Cost effective
- Compatible with other common additives
- Stable in acidic and alkaline formulations

Functionality

JAYPOL HS60 is an excellent choice for a wide range of water and system conditions due to its primary functional properties:

- FUNCTIONALITY:
 - Threshold Inhibition – A threshold inhibitor is an additive that has the ability to prevent precipitation of a substance at a sub-stoichiometric dosage. **JAYPOL HS60** acts as threshold inhibitor for common mineral scales such as CaCO_3 and CaSO_4 . This property can be enhanced when **JAYPOL HS60** is combined with phosphonates such as HEDP or PBTC.
 - Crystal Habit Modification – **JAYPOL HS60** has a direct impact upon the crystal habit of typical mineral scales. This functional property of **JAYPOL HS60** plays

a critical role within the threshold inhibition mechanism. In addition, the crystal habit modification properties of **JAYPOL HS60** significantly limits the amount of adherent deposits to system surfaces when the limits of threshold inhibition are exceeded.

- Particulate Dispersion – **JAYPOL HS60** is engineered with a molecular weight in the range known to be highly effective for general particulate dispersion. The sulphonate functionality of **JAYPOL HS60** adds dispersing properties for difficult particulates such as hydroxyapatite, iron oxides and hydroxides, and common boiler drum sludge. This span of dispersing properties makes **JAYPOL HS60** an ideal choice for the types of solids found in process water applications.
- Stabilisation – Stabilisation of $\text{Ca}_3(\text{PO}_4)_2$, $\text{Zn}(\text{OH})_2$, and soluble iron is a critical functionality in many process applications, especially cooling water systems. **JAYPOL HS60** contains an optimised level of sulphonated monomer to provide exceptional performance as a stabiliser of calcium phosphate, zinc, and iron. **JAYPOL HS60** is a building block additive for scale and corrosion formulations where phosphate or phosphate and zinc are utilised. These formulations are commonly known as “stabilised phosphate” or “stabilised phosphate-zinc” programmes and require a robust polymer such as **JAYPOL HS60** with known stabilisation efficacy.

Use in Boiler Water Systems

JAYPOL HS60 is a polymer with multiple functionalities found useful in boiler water systems. In particular, **JAYPOL HS60** is designed to control common foulants observed in low to medium pressure applications (up to 600psi/~42 bar). In such applications the primary functionality of the **JAYPOL HS60** is to control solids via particulate dispersion and crystal modification mechanisms. These functionalities support the use of **JAYPOL HS60** for the control of hydroxyapatite, particulate iron oxide, colloidal iron, and common boiler drum sludges. **JAYPOL HS60** should be added at a minimum dosage necessary to maintain at least 10 - 20ppm based on polymer solids in the boiler water. Effective dosages can range up to 50-60ppm based on polymer solids. **JAYPOL HS60** can be utilized in boiler applications requiring FDA compliance according to 21 CFR 173.310.

Usage Notes

JAYPOL HS60 is stable if appropriately used. Storage in high density plastic or 316 stainless steel is recommended. Avoid extremes of temperature, Avoid storage or contact with mild steel, copper and aluminium.

In respect of handling no specific technical measures are required. Observe general health & safety rules [avoid contact with skin; wear goggles and gloves etc.] In the event of spillage, clean skin with plenty of water and soap. Flush eyes with water and a buffer solution. See respective Material Safety Data Sheet for additional information.

Physical Properties

Description:	JAYPOL HS60 is an sulphonated copolymer designed to control deposition of common mineral scale and solids typical to process water applications.
Appearance:	Colourless to pale yellow liquid
Bulk viscosity:	Approx. 225 cp
Solubility:	Water soluble
Solids content:	Approx. 37%
pH:	Approx. 4.8
Specific Gravity:	Approx. 1.15 g/cm ³

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