



# SELECT INDUSTRIES, INC.

P.O. Box 2450, Wichita Falls, Texas U.S. A. 76307

Ph: (940) 855-0461

(800) 234-5801

Fax: (940) 855-2734

[www.selectindustries.com](http://www.selectindustries.com)

---

## GYP CRYSTALS

GYP CRYSTALS are a solid polyphosphate scale inhibitor used for the prevention of alkaline earth metal scale deposits. GYP CRYSTALS exhibit the “threshold effect” in aqueous solutions to prevent the formation of scale deposits.

### TYPICAL PROPERTIES

Bulk Density, lb/cu. ft.	87
Ratio $Na_2O$ to $P_2O_5$	1.1 to 1.0
Grade, Walnut Size	3/8” to 3/4”
pH (1% solution)	6.8
Solubility in fresh water or brine water	Soluble in all concentrations
Solubility in brackish or brine water	Solubility decreases with increased salinity

### CHEMICAL DESCRIPTION

GYP CRYSTALS are an inorganic glassy polyphosphate that is soluble in fresh, brackish, or brine water. GYP CRYSTALS exhibit the “threshold effect”; i.e., small concentrations of chemical prevent scale deposition by holding a much larger quantity of multivalent cations in solution.

### LIMITATIONS

The reversion rate of GYP CRYSTALS to orthophosphate increases with increasing temperature, higher phosphate concentration and lower pH. The effectiveness of any inorganic phosphate as a scale inhibitor is lost when it reverts to orthophosphate.

Mechanical bridging of the GYP CRYSTALS may occur in wells having small annuli. This will prevent the material from reaching the fluid level. Also, some wells have a rat hole at the bottom which is bypassed by produced fluid flowing from the formation to the tubing. Where these possibilities exist, poly (meta) phosphate counts should be made on the produced water to determine if the phosphate is going into solution.

The solubility of GYP CRYSTALS is controlled by its particle size, water temperature and other ions in solution. GYP CRYSTALS are highly soluble in fresh water; thus, the entire treatment may be solubilized too rapidly to afford long term protection. GYP CRYSTALS are not recommended for wells having bottom-hole temperatures above 150°F.

## **GYP CRYSTALS**

### **RECOMMENDED USES**

GYP CRYSTALS are recommended for the following:

1. Inhibition of alkaline earth metal scale deposits such as calcium carbonate, calcium sulfate, barium sulfate, etc.
2. Removal of scale deposits. Scale that has already formed may become soft and disintegrate into the produced fluid after a period of time.

### **TREATING APPLICATIONS:**

GYP CRYSTALS should be used where solid scale inhibitors are applicable. Some of these applications are:

1. Pumping oil wells making water (open annulus)
2. Water injection systems
3. Water disposal systems

### **SUGGESTED TREATING METHODS & RATES**

The severity of the scale problem and treating economics will dictate the rate of treatment. Initial GYP CRYSTALS treating recommendations should be based on a thorough study of the system and complete water analysis should establish:

- (a) the type of scale most likely to form
- (b) the severity of the scale problem
- (c) the temperature at which the scale will most likely form
- (d) the point at which the chemical should be applied in order to obtain the best results.

Poly (meta) phosphate counts should be used to determine the need for periodic maintenance treatments.

The treating method will depend upon the type of system. Some suggested treating methods follow:

1. Batch treatments (usually 50 lbs.) down the annulus of a pumping oil well followed by periodic maintenance treatments.
2. Through a ball feeder having a screen at the bottom of the feeder.
3. By diverting a side stream of the water over a bed of GYP CRYSTALS and washing the chemical down the annulus.
4. By other methods as may be practical for specific application.

### **DISCLAIMER OF LIABILITY**

The information in this bulletin is believed to be accurate, however all recommendations are made without warranty since the conditions of use are beyond Select Industries, Inc. control. Select Industries, Inc. disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its' products in combination with any other material or in any process.