

# MicroPoly<sup>®</sup>

## LUBRICANTS

### METAL PROCESSING FILLED BEARINGS

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#### CASE 1: Steel coil straightener

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**BEARING TYPE:** Spherical roller bearings, 22211

**CONDITIONS:** Bearings were located deep within the equipment and could not be externally lubricated. An unscheduled down time to change out a failed bearing cost \$250,000. Bearing life was 6 months.

**RESULTS:** MicroPoly filled bearings have been running 3 years with no failures. Cost savings have been substantial.

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#### CASE 2: Oven bearings, coating metal pipes

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**BEARING TYPE:** Rexnord housed roller bearings

**CONDITIONS:** Bearings operate at 300°F. Bearing speed 80 RPM. Bearing life 2-3 weeks.

**RESULTS:** Bearings were filled with high temperature MicroPoly. Bearings have been running 3 months so far with no failures.

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#### CASE 3: Billet turner bearings

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**BEARING TYPE:** Tapered roller bearings

**CONDITIONS:** Billet comes out of reheat furnace and dependent on size and shape, may need to be turned 90° prior to entering mill stand for rolling. Estimated ambient temperature is 300 – 400° F and bearing life was approximately 2 months.

**RESULTS:** Bearings were filled with MPI-2000, high temperature MicroPoly. Bearings have been running for 9 months so far with no failures.

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#### CASE 4: Crane wheel bearings

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**BEARING TYPE:** Spherical and split roller bearings

**CONDITIONS:** Inconsistent bearing lubrication due to availability problems and safety considerations. This caused inconsistent bearing life.

**RESULTS:** Bearing life increased 3 to 4 fold. Some plants totally eliminated manual lubrication.

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#### CASE 5: Crane hook bearings

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**BEARING TYPE:** Roller thrust bearings, about 100 mm bore

**CONDITIONS:** Water, scale and heat contamination, combined with limited ability to lubricate and inability to contain grease. Temperature less than 120°F.

**RESULTS:** Bearing life at least doubled.

## METAL PROCESSING FILLED BEARINGS

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### CASE 6: Table roll

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**BEARING TYPE:** Spherical roller bearings, 23124 & 22224  
**CONDITIONS:** Water, scale and heat contamination. Bearing life 3 months. Temperature less than 120°F. Speed 120 RPM.  
**RESULTS:** With MicroPoly, bearing life at least doubled.

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### CASE 7: Wire cabling for tire cord (one to five strands)

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**BEARING TYPE:** 6204 single row ball bearing, shielded on one side  
**CONDITIONS:** Eccentric forces pushed grease out of bearing. Bearing life 2 hours to 7 days with conventional lubrication. Speed 1200 RPM and 2500 RPM eccentric speed.  
**RESULTS:** Bearing life 60-70 days with MicroPoly.

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### CASE 8: Wet strip grinders – squeegee & brush rolls

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**BEARING TYPE:** Rexnord ZA 2203, 2-3/16" pillow block  
**CONDITIONS:** Water spray.  
**RESULTS:** MicroPoly filled bearings increased life 2 fold.

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### CASE 9: Acme strip grinder-polisher

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**BEARING TYPE:** ZA 2207, Rexnord housed roller bearings  
**CONDITIONS:** Slow speed; ambient temperature; soapy water.  
**RESULTS:** Currently getting 6 weeks life out of bearings: 2-3 times life.

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### CASE 10: Hot strip mill runout table rolls

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**BEARING TYPE:** Tapered roller bearing, 7" bore  
**CONDITIONS:** Water and heat. MicroPoly serves as a back up to an automatic lubrication system to reduce the unscheduled maintenance. Bearing life was unpredictable and inconsistent.  
**RESULTS:** Bearings have been in use for two years.

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### CASE 11: Slab mill feeder table

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**BEARING TYPE:** Spherical roller bearings, 23124  
**CONDITIONS:** Water quench.  
**RESULTS:** MicroPoly filled bearings have increased life 3 fold.

## METAL PROCESSING FILLED BEARINGS

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### CASE 12: Furnace Bearing

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**BEARING TYPE:** Spherical roller bearing, 22226CK

**CONDITIONS:** Heat from furnace melted lubricant in bearing, causing melted lubricant to leak onto the steel strip. Temperature 300°F.

**RESULTS:** High temperature MicroPoly was installed in the bearings. The leakage problem has been solved, eliminating the need to scrap materials due to lubricant contamination.

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### CASE 13: Scale Conveyor

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**BEARING TYPE:** Housed roller bearings

**CONDITIONS:** Conveyor removes scale from a water and scale pit. Bearing life 6 to 8 days.

**RESULTS:** MicroPoly filled bearings have lasted over 8 months.

## METAL PROCESSING SOLID PROFILES

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### CASE 14: Re-bar and angle iron, open conveyor, return guide

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**MICROPOLY TYPE:** 1" x 2" x 12" chain lube block

**CONDITIONS:** Some radiant heat, less than 200°F. Previous chain guide material did not hold up and had to be replaced 3 or 4 times per year.

**RESULTS:** MicroPoly chain lube blocks, placed at interval spacing, reduced replacement frequency of chain guide to once per year. This resulted in saving significant material replacement and labor costs.

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### CASE 15: Shotblast car

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**MICROPOLY TYPE:** Bronze bushings plugged with MicroPoly

**CONDITIONS:** Steel shot contamination. Life unpredictable.

**RESULTS:** Life increased 3 to 4 fold with MicroPoly.

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### CASE 16: Shears

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**MICROPOLY TYPE:** Bronze liners plugged with MicroPoly

**CONDITIONS:** Normal mill environment, lube lines were damaged. Life unpredictable.

**RESULTS:** Achieved 4 to 10 years life with MicroPoly.

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### CASE 17: Crane wheel flange lubrication

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**MICROPOLY TYPE:** Block type, spring loaded applicators for double flanged wheels. Various wheel sizes.

**CONDITIONS:** Generally, no lubrication utilized. Life varied, depending on crane usage and rail/crane condition.

**RESULTS:** Wheel life increased 3 to 4 fold with MicroPoly.