



**LUBRICANTS™**

**POWER TO PERFORM™**

## **CRUSHFINE 40 NB** SUGAR MILL ROLL BEARING OILS

### **SPECIAL FEATURES**

In the crushing process, when material leaves the shredder, it is fed through a series of crushing mills. The crusher rolls are often grooved or corrugated to enable them to grip the shredded cane, break down the fibre and squeeze out the juice.

Tremendous pressures are exerted on the top crusher rolls by means of a hydraulic control system, through hydraulic rams and pressure plates on the top roll bearings. These pressures are also transferred down into the lower roll bearings. The effect on roll bearings can be severe. In addition to the high pressure, shock loads placed on the bearings can be particularly severe due to the frequent irregular distribution of sugar cane feed as it enters between the rolls, and through tones, wood, or other trash passing through the rolls.

Unless shaft and bearing are separated by a strong, adhesive lubricating oil film, excessive temperatures and metal-to-metal contact will lead to serious bearing failures. In addition, the sealing of the bearings is often not ideal, and water, cane juice, dust, and bagasse can easily find its way into the bearings. The lubricant used must be capable of resisting this contamination and washing action.

Depending on the age of the equipment, mills may use plain journal bearings (referred to as mill brasses). Some mill brasses have a number of lubricant entry points along the length of the bearing groove to ensure that lubricant is supplied to the full length of the bearing. These oil grooves must be kept clean and free of dust and bagasse accumulation.

The lubricants used in these bearings are very high viscosity oils that can lubricate adequately under conditions of low speed, high operating pressures and shock loading. The lubricant must be designed with the correct properties to provide protection against shock loading, and agents to help protect against the corrosive action of the sugar juice. There are bituminous based lubricants for the purpose but they have harmful effect on the environment and make present difficult task for housekeeping and effluent discharge management.

To take care of the cleanliness aspect and the environment HPCL has come out with a unique bitumen free lubricant for crushing mills. CRUSHFINE 40 NB from HPCL protects the bearings under high pressures and also the corrosive and washing properties of the cane juice.

### **PHYSICO-CHEMICAL PROPERTIES**

Kinematic Viscosity @ 100°C, cSt	40 - 45
Copper Corrosion	Pass
Density @ 29.5°C	0.898
Four Ball Weld Load	> 280 kgs