



Tribology India Limited

(Leaders in Surface Engineering)

TRIBONOX

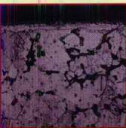
Tribonox – latest thermo chemical treatment with- “Epsilon plus”



Tribonox has been developed by Tribology India Limited (TIL), an Indo-French joint venture. The company enjoys capital participation from Sundaram Industries Ltd. Of the TVS Group and HEF France. TIL specializes in surface modification technologies to combat problems of wear, seizure and corrosion, encountered by components in Industry.

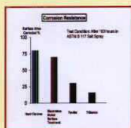
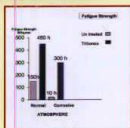
- ◆ Tribonox incorporates 'Epsilon plus' technology to improve properties and enhance performance
- ◆ Epsilon Plus gives deeper epsilon Carbo-nitride zone and limits underlying transition gamma zone
- ◆ Epsilon plus gives a unique 'hard' yet 'ductile' compound zone which gives superior wear performance
- ◆ Epsilon plus hexagonal structure results in excellent anti-seizure, anti-scuffing, and anti-galling properties.
- ◆ Epsilon plus has excellent hot hardness and stays hard to the temperature of treatment
- ◆ Epsilon plus also produces surface micro hardness values from 350Hv up to 1400Hv, depending on material used.
- ◆ Fatigue properties of steel are greatly improved by Change in Composition of the compound layer by EPSILON PLUS





Epsilon Plus Technology involves injection of proprietary gas into the treatment bath to enhance nitriding potential and thus deepening compound zone.

High quality manufacturing of automotive, aircraft, and machine components depends on controlled tolerances and geometry. Because of the low temperature (550°C) used, TRIBONOX reduces distortion and scrap while maintaining dimensional control, making it the heat treating process of choice for many component manufacturers. It also eliminates post treatments such as painting, galvanizing or black oxidizing due to excellent black finish of the process. The action of the molten salt at the process temperature also caused slight surface micro porosity on the treated steel. This allowed the surface pores to become minute reservoirs, retaining lubricant on the immediate surface resulting in increased scuffing and wear resistance.



Series of TRIBONOX processes like TRIBONOX-O, TRIBONOX-P, TRIBONOX-K, R, M, and S have been developed to get Corrosion Resistance from 60 hours to 500 hours in a salt spray environment. Type of Tribonox is chosen based on functional requirements like wear, friction and corrosion.

APPLICATIONS

Crank shaft

Timing Gears

Cam shafts

Rocker arm shafts

Cylinder liners

High speed tools

Engine valves

Metal working tools



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