

High Corrosion-Resistant Stainless Steel ES1

Daily cleaning and chemical washdown of equipment and work surfaces can quickly corrode bearings used throughout food and beverage plants, leading to frequent bearing replacement and high maintenance costs. In efforts to deliver utmost bearing performance and optimal machine and plant efficiency, NSK has developed ES1 bearings manufactured with alloy steel infused with nitrogen - a solution that outperforms conventional alternatives in corrosion resistance and bearing life, effectively reducing maintenance and replacement costs.



Proven Benefits

- Superior corrosion resistance
- High hardness
- Longer life

Design Features

- Nitrogen-infused alloy steel on inner and outer rings
- Grease options include food grade and solid lube
- Durable nitrile rubber seals
- Polyamide resin or corrugated stainless steel cage
- Open, shielded and contact seal types are available

Conditions

- | | |
|-----------------------------|----------------------|
| CO Contamination | CR Corrosion |
| CW Chemical Washdown | FG Food Grade |
| WT Water Exposure | |

Applications

- Food processing machinery and equipment
 - Raw material, cutting, mixing and molding
 - Inspection, material handling and packaging
- Beverage processing lines
 - Filling, sealing and inspection

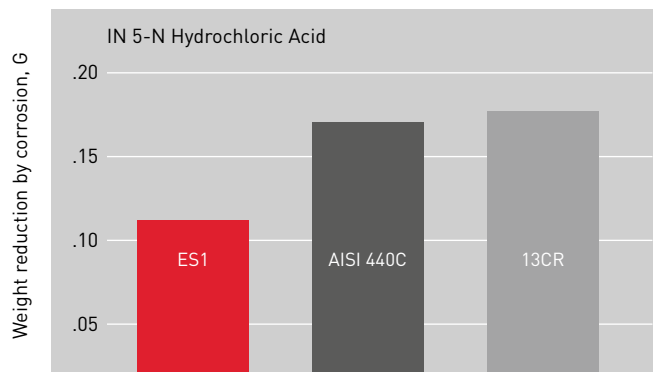
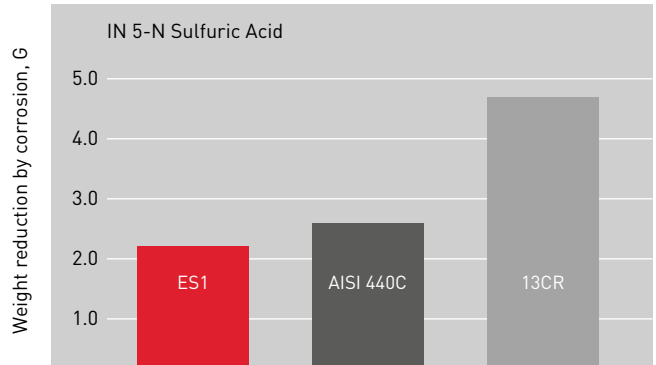
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Comparison of stainless bearings steels

Steel Type	Hardness	CORROSION RESISTANCE	Fatigue Life
ES1	●	●	●
13CR	●	●	●
AISI 440C	●	●	●

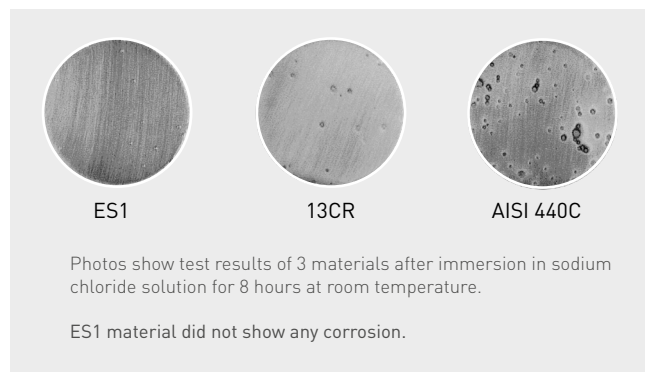
● Excellent ● Fair ● Poor

Corrosion immersion test: weight reduction

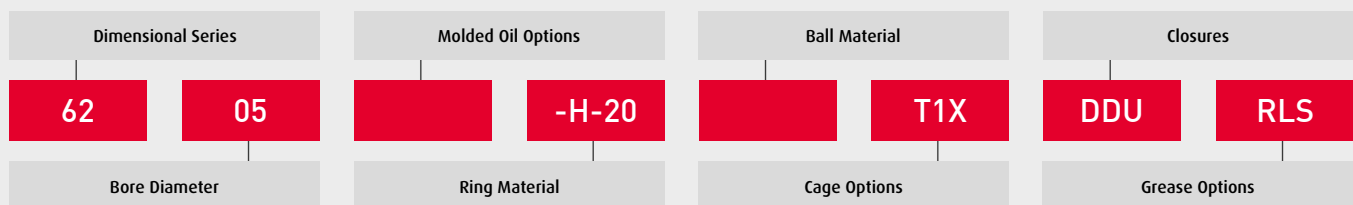


Test conditions: Test Piece: Ø18 x 10mm / Test Solution: 300 ml
Immersion Time: 20 Hours (at room temperature)

Corrosion resistance of ES1 steel



Design Specifications



Dimensional Series	6, 60, 62, 63, 68, 69
Bore Diameter	From 6 to 75 mm
Molded Oil Options	Blank: None L11-1: General purpose molded oil L11-B: Food grade molded oil
Ring Material	-H-20: ES1 steel on inner and outer rings

Ball Material	Blank: Stainless steel SN: Silicon Nitride
Cage Options	Blank: Stainless steel T1X: Polyamide
Closures	Blank: Open DDU: Double contact seal ZZ: Double shield
Grease Options	Blank: None RLS: Food grade grease