



Elco 391 Industrial Gear Oil Additive

Features

Elco 391 is a multifunctional industrial gear additive for use in preparing premium industrial gear oils. When formulated in a suitable base stock, Elco 391 imparts the following benefits:

- Extends oil life and reduces gear wear
- Exceptional EP performance
- Excellent antifoam and demulsibility characteristics
- Compatible with most seal materials
- Non-corrosive to yellow metals
- Suitable for use in Group I and II base stocks

Application

Treated at 1.5 wt% (1.3% volume) in suitable base stocks, Elco 391 is recommended for the following requirements:

- GM LS-2 Specification LR for EP gear oils
- U.S. Steel 224 / German Steel SEB 181226
- CM P35, P59, P74 & P77
- ANSI / AGMA 9005-E02
- ISO 12925-1 Category CKD
- Type CLP HC, L-CKC
- Joy Machinery TO-SHEP & TO-SMEP

Elco 391 meets many specifications not listed above. If your requirement is not listed, contact your Elco agent to verify Elco 391 will meet your performance needs.

Characteristics

<u>Physical</u>	<u>Typical</u>
Flash Point, ASTM D92	95°C min
Specific Gravity @ 15.6°C, ASTM D1298	1.02 (8.5 lb/gal)
Viscosity @ 40°C, ASTM D7042	120 cSt
Viscosity @ 100°C, ASTM D7042	12 cSt
<u>Chemical</u>	
Phosphorus, ASTM D6481	2.3%
Sulfur, ASTM D6481	20.0%

Recommended Blending, Handling and Storage Conditions

Elco 391 can be blended with mechanical or in-line blending equipment at temperatures not above 125°F (52°C) or below 60°F (16°C). The additive can be heated to 125°F (52°C) for unloading or transfer, but should not be stored for long periods at temperatures over 100°F (38°C).

Performance Characteristics

Characteristics	Blend 1 1.5 % wt Elco 391 in Typical US Oils	Blend 2 1.5% wt Elco 391 in South American Oils	Blend 3 2.25% wt Elco 391 in Hydro-treated (Group II) Oils
Antiwear Properties Four Ball Wear, ASTM D4172 Conditions: 1800 rpm, 20 kg, 54°C, 60 min			
Wear Scar Diameter	0.24 mm	0.31 mm	0.31 mm
Water Separability, ASTM D1401	40/40/0 (15)	40/40/0 (20)	40/40/0 (20)
Demulsibility, ASTM D2711 Free Water from Funnel	87.0 mL	84.0 mL	89.0 mL
Total Free Water	87.8 mL	84.9 mL	89.3 mL
Extreme Pressure Properties Timken Test, ASTM D2782 OK Load	70 lb	60 lb	65 lb
Four Ball, ASTM D2783 LWI	50.7	52.5	46.0
Weld Load	250 kgf	250 kgf	250 kgf
FZG, ASTM D 5182 Passing Stage	12	12	12
Oxidation Stability, USS 224 321 hrs @ 121°C, 10 Liters, Air/hr Viscosity Increase	4.1 %	0.6 %	0.9 %
Steel Corrosion, ASTM D665B Synthetic Sea Water	Pass	Pass	Pass
Copper Corrosion, ASTM D130	Pass	Pass	Pass

Rev. 8/18

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Elco® is a brand of Italmatch Chemicals Group.