



The Elco Corporation

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Elco 461 Copper Passivator / Metal Deactivator

Features

Elco 461 is an ashless sulfur corrosion inhibitor. It is in liquid form and is useful in many fuel and lubricant applications in preventing the corrosion of non-ferrous metals. It is especially useful in preventing the attack of copper and copper alloys by active sulfur and sulfur compounds.

- Very low treat rates required
- Suitable in virtually all mineral oils, greases and fuels
- Low viscosity for easier handling

Application

The recommended treatment level for use of Elco 461 in finished fuel or lubricant is 0.01-0.1 wt%.

Characteristics

<u>Physical</u>	<u>Typical</u>
Flash Point	120°C min
Specific Gravity	1.07 (8.9lb/gal)
Viscosity @ 40°C.	22 cSt
<u>Chemical</u>	
Sulfur	34%
Acid Number, mg KOH/g	<20

Recommended Blending, Handling and Storage Conditions

Elco 461 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.

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Laboratory Tests Table I

Elco 461 Performance in a sulfur-phosphorus gear additive package

Wt. % Inhibitor (in additive concentrate)	ASTM D 130 (210°F., 24 hrs.)
0.5 Commercial Inhibitor A	4c (flake)
1.5 Commercial Inhibitor A	1b
0.5 Elco 461	1b

Laboratory Tests Table II

Use of Elco 461 in an industrial gear lubricant containing 5.0 wt. % of a commercially available sulfur-phosphorus system

Wt. % Inhibitor (in SAE 90 gear lubricant)	3 hrs.	ASTM D 130 @ 250°F.		
		6 hrs.	9 hrs.	12 hrs.
0.05 Commercial Inhibitor A	1b	2e	3b	4a
0.05 Elco 461	1b	1b	1b - 2a	2a

Laboratory Tests Table III

Elco 461 performance in an active sulfur metalworking compound

Wt. % Inhibitor (In additive concentrate)	ASTM D 130 (Ambient, 24 hrs.)
No inhibitor	4c (flake)
0.1 Commercial Inhibitor A	4a
0.1 Elco 461	1b

Laboratory Tests Table IV

Use of Elco 461 in a metalworking fluid with an active sulfur content of 0.9%

Wt. % Inhibitor (in metal working fluid)	ASTM D 130 (210°F., 3 hrs.)
No Inhibitor	4c (flake)
0.1 Commercial Inhibitor A	4c (flake)
0.1 Elco 461	1b