



## HIGH TEMPERATURE PERFORMANCE IN OVEN CHAINS

**INDUSTRY:**  
Food & Beverage

**APPLICATION:**  
Shrink Film Heat Tunnel

**COMPONENT:**  
Oven Chains

**LOCATION:**  
Taiwan



### BACKGROUND

Nye was approached by a bottling plant to help solve a lubrication problem within the wrapping machine of can trays. The shrink film heat tunnel that continuously wraps 24 can trays was experiencing smoking of the oven chains. The machine uses a continuous drip oiler system that drips every 20-30 seconds onto the chain as it moves through the oven. Two different competitor high temperature chain oils were smoking at 180°C and carbonizing on the chain, thus contaminating the work place. This carbonization shortened the life cycle of the chain, increased downtime, and increased the cost of maintenance.

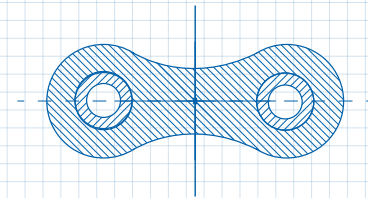
### CHALLENGE

- Can the lubricant withstand temperatures of up to 180°C without smoking?
- Lubricant must NSF H1 Registered in case of incidental food contact and exhibit excellent oxidation stability.

### SOLUTION SYNTHETIC OIL 250

Medium viscosity oil for safe use in food processing equipment.

- Outstanding high temperature performance
- Excellent thermo-oxidation stability
- NSF H1 Registered



### RESULTS

After being tested in the application environment, Nye Synthetic Oil 250 met all temperature requirements with no smoke present at 180°C. The chain was very clean after all testing and left no carbon residue. Synthetic Oil 250 will reduce maintenance costs and downtime for the bottling plant, as they do not have to clean and replace the chains as often as they did with the competitor lubricant.

Base Oil Properties	Conditions	Synthetic Oil 250	Test Method
Chemistry		Ester	
Temperature Range		-20 to 280°C	
Kinematic Viscosity	40°C	215 cSt	ASTM D-445
Density		0.96g/ cm <sup>3</sup>	NYE CTM
4 Ball Wear (1hr, 1200 RPM)	40 kg Load	0.66 mm	ASTM D-4172
Copper Corrosion	24 hrs, 100°C	1b	ASTM D-4048
Evaporation	24 hrs, 150°C	0.10%	CTM-1
	24 hrs, 200°C	1.4%	

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Nye Lubricants is a leader in the innovation, formulation and provision of synthetic lubricants, enabling and improving breakthrough products and critical new technologies. We bring proven experience, deep technical knowledge and customer focus to solve our customers' toughest challenges, adding tangible value to products in a wide range of industries and applications.

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