



Monolec® Hydraulic Oil (6520)

Kraft General Foods Corp. – Avon, N.Y.

Forklifts

- 50% reduction in total usage

Customer Profile

This particular Kraft General Foods Plant makes Cool Whip. All of their equipment is lubricated with LE products and they have been an LE customer since 1975.

Application

A critical area of lubrication is the forklifts, which operate in and out of the cold storage warehouse.

Challenge

When the forklifts are in the cold area, the temperature is -14°F (-26°C). As they move out to pick up another pallet of fresh product, the temperature can range anywhere from 65°F to 90°F (18°C to 32°C). At certain times, a forklift might operate for an extended period within the cold area, and at another time, it might operate for an extended period of time in the warm area.

LE Solution

Because of the extremes in operating temperatures, the choice for the forklifts was Monolec® Hydraulic Oil (6520) 5W-20. Two units were chosen for a test of Monolec 6520. Both were Clark forklifts, one a model E50 BC (unit F42) and one a model E50 B (unit F43). Oil

samples of the ISO 32 oil were pulled from both units before they were converted to Monolec 6520. These samples of the commercial grade ISO 32 oil were sent to a laboratory for spectroanalysis. The commercial grade oil had been in unit F42 for 1,570 hours (see column 1 of test analysis) before testing and unit F43 had only 400 hours (column 3) before testing. The high copper count was from pump repair work recently done on the unit. The ISO 32 oil was drained and the units filled with Monolec 6520. Monolec 6520 was tested five times over the next year in both units. This amounted to 3,500 hours of use in each unit.

When Monolec 6520 was being considered for use in these forklifts, there were two critical questions raised by Kraft General Foods mechanics. First, was this oil going to flow freely enough to satisfy the pumps when the truck was operated for an extended period in the cold area? If it didn't, they would lose the pumps. Secondly, would the hydraulic operation be sluggish when the truck was operated for an extended period in the cold area? After a full year of use, operating three shifts per day on many days, it was determined that both of these questions had favorable answers. There has not been one operator complaint of sluggish operation and they have not lost a pump since converting to Monolec 6520.



Results

Results of the laboratory analysis:

	Unit F-42 Commercial ISO 32 1,570 hours	Unit F-42 Monolec 6520 3,500 hours	Unit F-43 Commercial ISO 32 400 hours	Unit F-43 Monolec 6520 3,500 hours
Iron	14	8	16	2
Chromium	0	0	4	0
Aluminum	2	1	9	1
Copper	1	2	242	2
Silicon	2	5	5	5
Phosphorus	450	370	390	250
Zinc	780	323	530	344
Water	.05	<0.1	.05	<0.1
Viscosity	30.8	36.0	29.2	33.8
Tan	1.52	0.60	1.06	0.56

Values for Monolec 6520 after 3,500 hours of use were substantially lower than that experienced with the previous commercial oil when it had less than half as many hours of use. The reduced rate of wear metals means longer life of the moving parts of the hydraulic system. The lower oxidation rate of Monolec 6520 also means less lubricant degradation and longer life for the oil.

The greatest difference noticed by the mechanics using Monolec 6520 was reduced leakage. Normal makeup oil with the commercial grade lubricant was 1.5 gallons per week, per forklift. This dropped to about one quart per month with Monolec 6520. The LE lubrication consultant was told that on an average, each forklift required one 55-gallon drum of hydraulic oil per year while operating under normal circumstances. Using Monolec 6520, they had operated two forklifts for a full year on one drum, and this included the initial fill for each one. This represents better than a 50% reduction in total usage and probably about 75% reduction in leakage. This reduction is due in part to the higher viscosity index of Monolec 6520 and

partly to the "kindness" of a 100% pure paraffinic oil as it affects seals, hoses and O-rings.

All forklifts have been converted to Monolec 6520 and they are now buying in LE's 550 gallon returnable Bulk Tank. Their oil leakage problems continued to dwindle as old hoses and seals which were subjected to the commercial grade lubricant were replaced. The hose reel seal gave continual problems. The master mechanic said, "I used to have to replace at least one of these seals per week, but since using LE's 6520, I almost never have to replace one. It's been so long, the last time I replaced one I had to look at the instruction manual to refresh my memory on how to do it." He further states, "If anyone had told me that there could be so much difference in the benefits of a high quality oil, I would have laughed at them."

Thank you to Kraft General Foods Corp, their mechanics, and to Don Wilkens, LE lubrication consultant (pictured), for providing the information used in this report.



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