



**THERMINOL**

Heat Transfer Fluids by Eastman

## Fluid changeover strategy

*Maximizing production capacity and fluid benefits through technical support*

### PROBLEM

Mineral oil causing damage, insoluble deposits, and increased fuel consumption and exceeding maintenance outages and top ups

### ANALYSIS

Switching to a synthetic heat transfer fluid could help alleviate these issues; however, there was no time to shut down for a fluid changeover.

### SOLUTION

With the support of Eastman's technical department, a changeover fluid strategy that avoided system cleaning was devised, allowing the direct substitution of used mineral oil with Eastman Therminol® heat transfer fluid while minimizing the production break.

### RESULT

A cleaner system; less heat requirements, resulting in lower fuel consumption; and reduced maintenance and top ups

Founded in 1965 in Switzerland, Gutta Group is a multinational company with production sites and offices in several European locations. Production covers a range of building materials and garden products, including bituminous and insulated roofing sheets, waterproofing membranes, nets, grass gratings, and draining membranes. The nature of Gutta products, which are based mainly on bitumen and high-density polyethylene (HDPE), means that heat and heat transfer factors are vital to the company's success.

In its production site at Filago in northern Italy, Gutta produces membranes and bituminous sheets. In 1996, Gutta installed a new heat transfer fluid system to both serve asphalt heating and deliver heat to drying machines. The system was initially filled with mineral oil, and the heater's normal operating temperature was 509°F (265°C) with peaks of 536°F (280°C). The system had an open expansion vessel.

Within 3 years of system start-up, the operators found that the heat transfer fluid circuit was dirty and several mechanical seals were damaged. In addition, there were insoluble deposits and fuel consumption had increased.

Due to the success of Gutta products, a new higher-temperature-rated heater was installed in 2000 to satisfy the higher production requirements. The amount of mineral oil top ups then increased continuously, forcing the system to a standstill for cleaning and repair. In 2002, Gutta engineers researched the heat transfer fluid market to find a product that would meet its operational criteria. The company opted for a synthetic, high-temperature fluid known as Eastman Therminol® heat transfer fluid.

At the time, the Filago site was at maximum production capacity with increasing demand. As a result, production management required that the maintenance outage to change the fluid be minimized.

With the support of Eastman's technical department, a changeover fluid strategy that avoided system cleaning was devised, allowing the direct substitution of used mineral oil with Therminol while minimizing the production break.



## The benefits of the fluid change were clear

- Over time, the solvency power of Therminol synthetic fluid cleaned the system internally, including heat exchange surfaces, resulting in a better heat transfer coefficient.
- Less heat was required to reach the desired production capacity, leading to a consistent reduction of fuel consumption.
- After 4 years of continuous operation, maintenance and fluid top up are now reduced to a minimum. The operation of Therminol is being monitored regularly through Eastman's analytical service program.

Angelo Rota, utility manager for the Filago production units, said, "The reduction of fuel consumption and maintenance operations in the HTF (heat transfer fluid) system implied a return of Therminol capital investment in less than 1 year. Now, thanks to Therminol, heat transfer system downtimes and heavy maintenance work belong to the past."



For more information or to find the sales or technical contact nearest you, visit the "Contact us" page on our website:  
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