

# Automotive

## The Unique Challenge

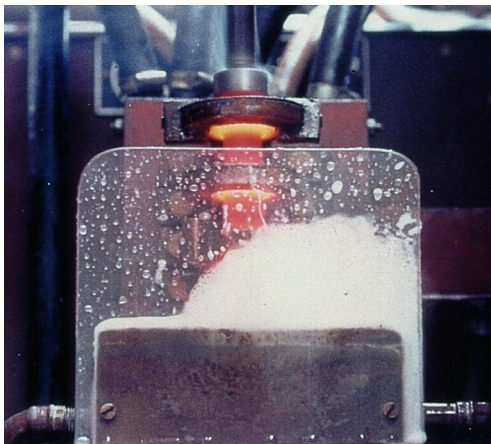
A US based global Tier I supplier to the automotive industry utilizes Houghton aqueous quenchant for their induction hardening processes.

Controlling the concentration is essential in aqueous quenchant to ensure the proper metallurgical properties of the heat treated part.

Kinematic viscosity is the best method for controlling concentration, but not conducive for the plant floor.

Most customers utilize a refractometer for checking concentration. The refractometer reading is multiplied by a factor to determine the concentration.

The refractometer requires manpower for checking concentration of each induction hardening system and can be susceptible to contamination (oil, dirt, etc.).



## The Houghton Approach

The **Greenlight® Unit** is a self-contained measurement system which sets the new standard for continuous concentration monitoring of metalworking fluids, including aqueous quenchant for immersion and induction hardening applications. The sensor housing and integrated flow through adapter are detachable for easy cleaning and maintenance. Red, yellow, and green lights illuminate to indicate if fluid concentration is within specified programmable process parameters. The patented sensor is up to 1000 times more accurate than a typical handheld refractometer.

## Case Study:

**GREENLIGHT® for Heat Treatment Applications** ensures a stable quenching process

The Houghton Team worked with the Senior Engineer for Heat Treat at the Tier I supplier in evaluating the **Greenlight® Unit**.

A unit was shipped to the induction hardening OEM for testing and run-off.

## Results and Benefits

The **Greenlight® Unit** worked successfully in measuring the concentration of the aqueous quenchant utilized in the induction hardening process.

The induction hardening machine was then sent to the manufacturing facility.

According to the Senior Heat Treat Engineer benefits include:

- **Real time confirmation of the quench concentrations to ensure a stable process.**
- **Ability to integrate with the monitoring systems on the induction hardening machine to confirm each cycle processed at the correct quench concentration and is recordable.**
- **Ensures AIAG CQI-9 conformance to the induction process.**
- **Easy to set up and use.**

The Tier I supplier eventually purchased 18 more **Greenlight® Units** and have plans to purchase an additional 14 Units.



HOUGHTON®

# Fluid Partnerships Making A World Of Difference

Case study after case study demonstrates why Houghton International is leading the global Metalworking Fluids market today. More than 20,000 customers worldwide across a diversified range of manufacturing processes have improved operations due to the mission-critical product portfolio of Houghton.

## Building A Team For Customer Success

An approach that combines chemistry and technology with business expertise uniquely positions Houghton to support customer growth and changing market requirements. With around 2,000 employees in 80 countries, and 12 manufacturing facilities in 10 countries, we are well prepared to capture regional and local business opportunities and support growing expansion of global customers.

Through innovation, expertise and efficiency, our engineers and business specialists are able to build a team with the customer that ensures product optimization, employee health and safety, procurement and logistics management, and reduction of environmental impact. By providing both the solution to customers' fluid challenges and the foundation for continued improvement, Houghton offers a proven method of sustainable profitability.

***For immediate consideration and evaluation of your fluids needs, and to request additional support material, please contact your Houghton International sales representative at [www.houghtonintl.com](http://www.houghtonintl.com)***

## Houghton International Product Portfolio



● Metal Removal	35%
● Hydraulic Fluids	14%
● Steel Rolling	12%
● Metal Finishing	12%
● Non-Ferrous Rolling	7%
● Heat Treatment	7%
● Metal Forming	5%
● Metal Protection	4%
● Metal Cleaning	3%
● Other	1%

## Established Client Relationships

Houghton International has long-standing partnerships with over

***20,000 Leading Global Customers***

serving their metalworking fluids needs across a wide range of applications and diversified end-markets including ***automotive, aerospace, fabricated metal goods, bearings, energy, non-ferrous and steel.***



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