

MAXWELL®

Cooling Solutions for a Warming Planet

SMARTER HEAT TRANSFER FLUIDS™

About HT Materials Science & Maxwell®

HT Materials Science, founded in 2018, is a pioneer in the development and manufacturing of heat transfer fluids for commercial cooling & heating applications. Maxwell is our flagship solution and proven to deliver **up to a 15% increase in energy efficiency** for most HVAC and process cooling systems. Payback periods average < 2.5 years, depending on utilization, fluid volume and utility rates. HTMS is headquartered in Ireland with manufacturing in Italy and sales offices in the US, Europe and the Middle East.

What is Maxwell?

An engineered suspension of sub-micron aluminum oxide (Al_2O_3) particles in a base fluid of water or water/glycol.

Is it safe to use?

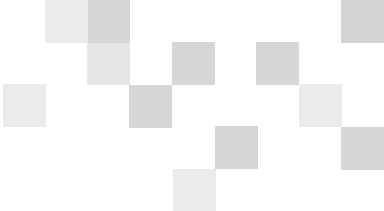
Maxwell is non-toxic, non-corrosive and environmentally-friendly. It is suitable for applications with incidental food contact.

Where can Maxwell be used?

Any closed-loop hydronic system that uses chillers, heat pumps, energy-recovery units and other heat exchangers.

How is it installed?

Maxwell is an additive that is injected into the fluid loop of mechanical systems while operating, requiring no shutdown and no preparatory CapEx.



MAXWELL® W

Fluid additive compatible with water-only systems, containing standard anti-corrosives and biocides.

MAXWELL® PG

Fluid additive compatible with water and up to 50% propylene glycol concentration, containing standard anti-corrosives and biocides.

MAXWELL® EG

Fluid additive compatible with water and up to 50% ethylene glycol concentration, containing standard anti-corrosives and biocides.

Monitoring and Maintenance Program

HTMS provides each client with an onsite Monitoring & Maintenance Unit (MMU) for the recording of key system fluid properties including fluid density, pH, and system pressure.

Measurement and Verification Program

Upon request, HTMS will track and record the Co-efficient of Performance (CoP) for each chiller and/or heat pump for both baseline and reporting periods in compliance with EVO's International Performance Measurement and Verification Protocol (IPMVP).

All data from these programs is made available to clients via our online portal MyMaxwell.net.

MAXWELL®

Heat Transfer Fluid Additive

Maxwell is a patented solution comprised of submicron aluminum oxide (Al_2O_3) particles suspended in water or glycol and treated with corrosion inhibitors and biocides. Maxwell increases the thermal capacity of most water and glycol systems by 15% or more.

Applications

Injected at only a 2% concentration, Maxwell is suitable for any closed-loop cooling and heating systems using water or glycol as the primary fluid. Compatible equipment includes air & water cooled chillers, water-source heat pumps, air handling units and heat exchangers.

Typical applications include:

- cooling & heating systems
- energy recover
- data centers
- thermal storage systems
- district cooling loops
- blow molding
- other process cooling

Efficiency Rating: A

High thermal conductivity and increased mass flow-rate increase the convective heat transfer coefficient by up to 15% over water, improving energy efficiency and thermal capacities.

Anti-Corrosion Rating: A

Long-life formulation with synergistic corrosion inhibitors tested using ASTM D 1384 standards. Also contains a biological inhibitor and polyacrylates to prevent scale precipitation.

Non-Toxicity Rating: A

Maxwell W and Maxwell PG classified as Non-Toxic and Food-Safe by the NSF with HT1 and HT2 certifications respectively.

Antifreeze Properties

Maxwell PG and Maxwell EG available with custom glycol concentration.



CASE STUDY:

<i>Application & Location</i>	The Dubai Metro, Dubai, UAE
<i>Equipment</i>	(3) York air-cooled chillers totaling 2,300 refrigerant tons
<i>Environmental Cooling</i>	Maxwell W was added to the chilled water loop of three (3) Dubai metro stations
<i>Chiller Efficiency Increase</i>	Maxwell W increased the chiller efficiency (COP) by 14.25% , reducing chiller energy consumption by an equivalent amount

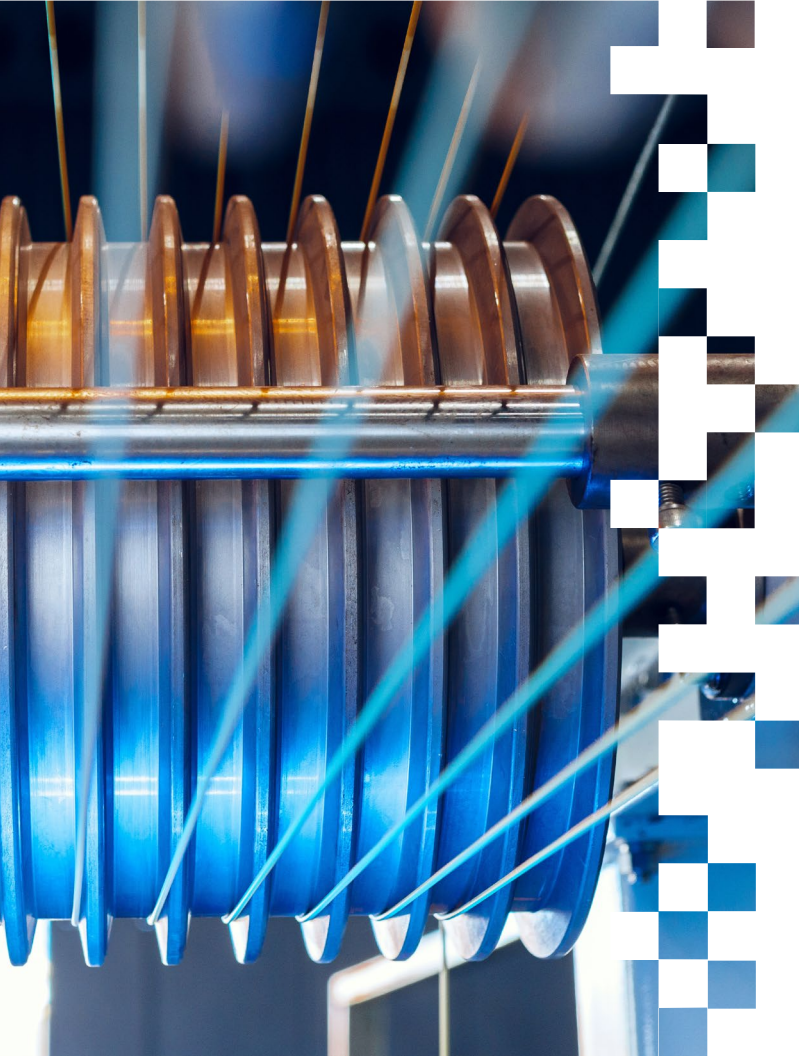
MAXWELL® W



CASE STUDY: **REGENERON**

<i>Application & Location</i>	Pharma Energy Recovery, New York, USA
<i>Equipment</i>	A circulating pump and energy recovery coils
<i>Process Cooling</i>	Maxwell PG was added to the glycol loop which captures exhaust thermal energy used to preheat and precool outside air
<i>Chiller Efficiency Increase</i>	Maxwell PG increased the thermal energy capture from the recovery coil resulting in a 23% increase in overall system efficiency

MAXWELL® PG



CASE STUDY: Microsoft

<i>Application & Location</i>	Manufacturing Facility, United Kingdom
<i>Equipment</i>	(4) Mitsubishi air-cooled chillers with total cooling capacity of 715 kW
<i>Environmental Cooling</i>	Maxwell EG was added to the primary chilled water loop serving air handling units and heat exchangers
<i>Chiller Efficiency Increase</i>	Maxwell EG increased the chiller efficiency by 11.6% (COP), reducing electrical energy consumption by an equivalent amount

MAXWELL® EG

Benefits of Maxwell

Environmental & Economic

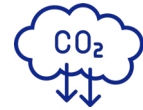
By improving the overall energy efficiency of mechanical systems, Maxwell enables commercial and industrial facilities to reduce electricity consumption and CO₂ emissions.



**Increased
System
Capacity**



**Less
Energy
Consumed**



**Exceptional
Sustainability
Rating**



Easy Installation



**No System
Downtime**



**Non-Toxic &
Non-Corrosive**

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