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News Release from: **GE Plastics**

Edited by the Engineeringtalk Editorial Team on **29 September 2005**

Silicone fluids boost downhill performance

GE's technical expertise and unique silicone fluid technology have enabled Holmenkol to achieve measurable increases in speed and durability for its ski waxes.

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In the rarified world of performance ski racing - particularly the Olympic Winter Games - speeds are measured in fractions of a second, and the ski wax formulas that can help shave off those milliseconds are a closely guarded secret. For a winning ski wax, the key to acceleration is the level of

water repellency. In other words, the wax must excel at preventing adhesion of snow, ice, and moisture that can slow down the ski's movement.

Many different additives are used to enhance the water repellency - and durability - of a ski wax formulation.

Among the most popular are fluorinated chemical components.

Unfortunately, these additives are not very soluble in the wax matrix (typically paraffin waxes).

This limits their use and, in turn, the level of water repellency they can deliver.

As a supplier to all of the national race teams that will compete in the 2006 Olympic Winter Games in Torino, Italy, Holmenkol sought a new approach that could help these athletes perform at their highest levels.

Said Dr Markus Schuetz, Head of R and D for Holmenkol: 'We wished to take our ski-wax technology beyond the limitations of existing additives, and provide a competitive edge for the teams competing at the Olympic Winter Games and for our business'.

'We needed an innovative ingredient to improve water repellency that could be easily incorporated into the wax matrix'.

After sampling silicone fluids from GE Bayer Silicone Laboratories, Schuetz was intrigued by their excellent wax compatibility and increased water repellency.

GE's wide array of silicones enabled the combined Holmenkol/GE teams to identify a material candidate with the precise characteristics required.

The GE silicone material not only increased water repellency and durability, but also proved to be compatible with fluorinated additives and the wax matrix itself.

GE's technical expertise and unique silicone fluid technology enabled Holmenkol to achieve measurable increases in speed and durability for its ski waxes.

Most notably, the use of Holmenkol ski waxes containing GE's silicone fluids may help racers to increase speed by 0.6 to 1.0%.

In practical terms, for a typical two-minute downhill race, this means cutting about a second off the total time - which could be the difference between finishing fourth, winning, and even establishing a new world record.

According to Schuetz, this improved water repellency is highly significant - so important that the company has applied for a patent for the new wax formulations.

'We're delighted with this formulation featuring GE's silicones, and we're using it in many of our products, including our World Cup blends as well as some new universal products for recreational skiers and snowboarders'.

'Why should only racers have all the fun?' he said.

Durability is another important benefit that GE's silicone fluids provide to Holmenkol's products.



Although this depends on such factors as snow characteristics and the amount of pressure on the skis, on average, the Holmenkol waxes containing GE's silicone fluids are up to 30% more durable.

This means each application of the wax lasts longer, resulting in less maintenance and extended peak performance.

Based on the excellent support that Holmenkol has received from GE, Holmenkol plans to expand the range of products in which GE's silicones will be used.

These include not only other ski waxes, but also nautical performance waxes that are applied to the hulls and sails of sailboats.

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