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New Pigment Could Transform Greenhouse Film Performance

Wynyard, UK – Huntsman has been testing an exciting new application for its latest titanium dioxide pigment innovation, award winning ALTIRIS® infrared reflecting pigment.

Test results strongly indicate that the pigment can improve the performance of polyethylene (PE) greenhouse film to provide improved growing conditions.

Our latest award winning innovation, ALTIRIS® infrared reflecting pigment, has been specially engineered by crystal size modification of rutile titanium dioxide to give high infrared reflectance. The pigment is coated with dense silica to make it super durable.

Recent laboratory-controlled tests and field testing in Turkey now show that ALTIRIS® pigment also has the potential to deliver benefits to commercial growers who use agricultural PE film for their greenhouses.

Greenhouses need a careful balance of light, heat and humidity for strong plant growth. Visible light from the sun must enter the structure to promote photosynthesis and UV light needs to be transmitted through the PE film so that bees can see flowers for pollination.

Greenhouses also need moderate infrared transmission to keep plants warm. Problems occur – especially in sunny climates – when too much heat from the sun's infrared energy enters the greenhouse. A very hot interior means some plants will wither and struggle to flourish.

A 50 micron polyethylene greenhouse film containing a one per cent loading of ALTIRIS® pigment is now being tested in field conditions near Istanbul in Turkey. The greenhouse using PE film containing ALTIRIS® pigment is being tested alongside a greenhouse using 50 micron PE film without ALTIRIS® pigment. Monitoring equipment has been installed inside both greenhouses to track temperature, solar intensity and humidity.

So far the test results indicate that when ALTIRIS® pigment is used in 50 micron greenhouse PE film it reflects infrared energy. The resulting reduced interior temperature helps keep relative humidity levels high to prevent plants from losing moisture.

“This new application for ALTIRIS® pigment is a very exciting development,” said Dr Robert Portsmouth, Director Business Development at Huntsman Pigments. “We can see considerable potential for ALTIRIS® pigment in helping to optimize growing conditions.”

Visitors to K2013 can find out more at the Huntsman stand. “We will also be pleased to talk with anyone who is interested in working with us to conduct further tests,” said Dr Portsmouth.

Please visit the ALTIRIS® pigment website for more information <http://altiris.huntsman.com/>

Side panel one: Lower infrared transmission prevents over-heating

Scientists at Huntsman have also tested 180 micron PE greenhouse film containing ALTIRIS® pigment under laboratory conditions. When compared with PE film without ALTIRIS® pigment, results show lower infrared transmission in the 700 – 2500 nanometer wavelength bands in the PE film containing ALTIRIS® pigment. Low transmission in these wavelengths prevents over-heating. In the visible region the PE film containing ALTIRIS® pigment preserves the wavelength balance of natural sunlight the plants need.

Image – PE greenhouse



Side panel two: A clear winner

Huntsman has just received the Best Technology Application of the Year award for its ALTIRIS® infrared reflecting pigment at the Plastics Industry 2013 Awards. This is our 1st polymers award for ALTIRIS® pigment and the 4th award for ALTIRIS® pigment since its launch last year. The judges said ALTIRIS® pigment is ‘an innovative approach to the development of a new type of pigment. It tackles an old problem of heat stability for polymers in a new way. The technical challenges and analytical techniques required to achieve the result highlight a thoughtful approach to the work. This is a clear winner in the application of innovative technology.’ The award was presented to members of the ALTIRIS® team at the Plastics Industry Awards 2013 ceremony held in London on Friday 27th September.

Image – PI Winners logo



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About Huntsman:

Huntsman Corporation is a publicly traded global manufacturer and marketer of differentiated chemicals with 2012 revenues of over \$11 billion. Our chemical products number in the thousands and are sold worldwide to manufacturers serving a broad and diverse range of consumer and industrial end markets. We operate more than 75 manufacturing and R&D facilities in over 30 countries and employ approximately 12,000 associates within our 5 distinct business divisions. For more information about Huntsman, please visit the company's website at www.huntsman.com.

Forward Looking Statements:

Statements in this release that are not historical are forward-looking statements. These statements are based on management's current beliefs and expectations. The forward-looking statements in this release are subject to uncertainty and changes in circumstances and involve risks and uncertainties that may affect the company's operations, markets, products, services, prices and other factors as discussed in the Huntsman companies' filings with the U.S. Securities and Exchange Commission. Significant risks and uncertainties may relate to, but are not limited to, financial, economic, competitive, environmental, political, legal, regulatory and technological factors. In addition, the completion of any transactions described in this release is subject to a number of uncertainties and closing will be subject to approvals and other customary conditions. Accordingly, there can be no assurance that such transactions will be completed or that the company's expectations will be realized. The company assumes no obligation to provide revisions to any forward-looking statements should circumstances change, except as otherwise required by applicable laws.

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