The future, through chemistry

As a leading global producer of specialty chemicals, Chemtura Corporation is committed to Responsible Care®, the chemical industry’s voluntary initiative to protect the environment, ensure the safety and security of its operations, and safeguard the health and safety of employees and the communities where we live and work.

To help ensure that we uphold the standards of Responsible Care®, Chemtura has adopted methodologies for tracking, assessing, and reporting our performance in numerous areas, including personal health and safety, operational safety, operational performance, generation of hazardous and non-hazardous waste, and water usage. We consider these indicators to be the vital signs of a healthy company in our industry, and we are dedicated to continuously improving our performance in these areas.

Beyond this, we strive to create technologically advanced products for applications with a greener profile — extended-life lubricants for wind turbines, specialty chemicals used to create clean-energy solar panels, compounds to remove mercury from coal-fired power plant emissions, even an active ingredient formulated to combat mosquitoes that carry malaria and dengue fever.

We issue this report in the belief that through prudent management, we can harness the talent and dedication of our employees to make Chemtura Corporation a force for improving the sustainability of our planet. We have come a long way on our journey and as we look ahead, we see endless possibilities for a better future, through chemistry.

Sincerely,

Craig A. Rogerson
Chairman, President & CEO

Tom Strang
Vice President, EHS&S
and Regulatory Affairs
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About Chemtura

Chemtura Corporation, with headquarters in Philadelphia, Pennsylvania, USA, is one of the largest publicly traded specialty chemical companies in the United States and a leader in several global markets.

With more than 4,400 employees around the world and regional headquarters in Shanghai, China; Middlebury, Connecticut, USA; São Paulo, Brazil; and Trafford Park, UK/Frauenfeld, Switzerland, Chemtura provides products and services in more than 100 countries and maintains worldwide manufacturing and research facilities as well as global sales offices. Annual sales in 2010 were $2.8 billion.

Major end markets served by Chemtura include agriculture, building and construction, durable goods, electrical and electronics, industrial, and transportation.
Chemtura's Objective

Our Objective is to grow a global portfolio of leading specialty chemical businesses, committed to innovation and the creation of value for our stakeholders. This means executing business-specific strategies, investing for profitable growth, leveraging regional centers of excellence for shared services, and strengthening our current businesses for optimum value creation.

Chemtura's Principles

Safety and Environmental Stewardship
Ensuring the safety and health of the public, our employees, contractors, and customers, and protecting the environment are of paramount importance.

Ethical Conduct
To successfully compete and grow, we need to adhere to the principles that underlie our Code of Business Conduct.

Through implementation of Responsible Care®, we are achieving our sustainability goals, which support the achievement of our Objective and Principles.

A leading global producer of flame retardants, which reduce the flammability of a wide variety of combustible materials such as the foams and fabrics used in furniture and automobiles, computer monitor plastic casings, circuit boards in electrical appliances, and wiring behind walls.

A leading global supplier of elemental bromine and derivatives, serving manufacturing processes that are critical to everyday life, such as fine chemicals, pharmaceuticals, agrochemicals, and polymers.

A major supplier of key products to the energy industry, which include clear brine fluids in oil and gas production and GeoBrom™ used to reduce mercury emissions from coal-fired power plants.

A global leader in seed treatment and miticides, focusing on worldwide markets with products formulated for specific crops and geographic regions to enhance quality and increase yield. Key products also include insecticides, herbicides, fungicides, plant-growth regulators, and fumigants.

A leading global supplier of water sanitizers and related products for recreational and commercial pool and spa applications. Our specialty cleaning solutions sanitize and disinfect, and they bring a clean, fresh shine around the home.

A leading supplier of plastic antioxidants and UV stabilizers that inhibit plastic degradation and improve durability of plastic products in industries such as automotive, packaging, building and construction, agriculture, and electrical and electronics.
Responsible Care® Policy

Chemtura considers ensuring the safety and health of the public, our employees, contractors and customers and the protection of the environment now and for future generations to be our core values. We are committed to meeting all applicable laws, regulations, permits and internal standards throughout the world. Our goal is zero accidents and incidents, and zero harm to the environment. Continued performance improvement will be achieved with the involvement and commitment of our employees to:

- Conduct business ethically and in accordance with the Guiding Principles of Responsible Care® and the concepts of Sustainable Development.
- Implement the Chemtura Responsible Care Management System®, which integrates environmental, health, safety and security considerations into daily business practices.
- Improve the safety of processes, reduce the quantity and/or hazard of wastes generated and through our commitment to pollution prevention — minimize or eliminate the release of contaminants into the environment.
- Ensure all products and intermediates are properly registered, comply with applicable regulatory requirements and may be safely used for their intended purposes.
- Enhance the security of our employees and facilities, our information systems and our raw materials and finished products throughout the value chain.
- Provide our employees and other stakeholders with appropriate information necessary for their understanding of the environmental, health and safety aspects of our operations and products, our safety, health and environmental performance, and the contribution our products make to the quality of life.

Craig A. Rogerson
Chairman, President & CEO
Responsible Care® at Chemtura

Participation in the American Chemistry Council

Chemtura achieves sustainability through the tenets of Responsible Care®. We have shown continuous improvement in our environmental, health, safety, and security performance — and it is our goal to continue to improve performance. With this goal in mind, Chemtura is proud to be a member of the American Chemistry Council (ACC) and an active participant in the ACC’s various Responsible Care® initiatives, including in the implementation of ACC’s Responsible Care® Guiding Principles. Applying these principles helps us to measure our progress and to ensure that we are satisfying our EHS&S goals by:

- Implementing the Responsible Care Management System® to achieve and verify results,
- Obtaining independent certification that a management system is in place and functions according to professional standards,
- Implementing the Responsible Care® Security Code,
- Measuring and publicly reporting performance, and
- Tracking our performance with respect to Total Recordable Case Rate (TRCR), energy use, water use, and waste generation.

Except as specifically noted, this report provides information concerning our global operations encompassing more than 40 manufacturing and research and development facilities. Please note that by comparison, the ACC’s Web site provides data for only the U.S. operations of ACC member companies.

Responsible Care Management System® (RCMS®)

RCMS® is Chemtura’s way of implementing ACC’s Responsible Care® initiatives. RCMS® follows the Plan – Do – Check – Act model and encourages continuous improvement in performance.

- Plan – Setting RCMS® goals and facility-specific implementation programs,
- Do – Implementing those programs and establishing accountability for achieving the goals and facility-specific targets,
- Check – Periodically measuring performance against goals and targets with internal and external verification of performance, and
- Act – Reviewing achievements, adopting best practices or modifying practices, and continually improving performance by setting new, challenging targets.

Certifications

Another way we ensure accountability is through independent certifications for our facilities. In addition to corporate RC 14001 and ISO 14001 certifications, the following Chemtura facilities have received third-party RC 14001 certifications and/or ISO 14001 certifications.
**Sustainability Through Responsible Care®**

Sustainable development is achieved by realizing economic growth, improved environmental performance, and social and community benefits. Sustainable development serves the interests of our stakeholders, including our customers, our employees, and the communities where we operate. Through accountability and adherence to the principles of Responsible Care®, we believe that sustainable development can be achieved.

Chemtura actively participates in ACC’s Responsible Care® initiatives and implements ACC’s Responsible Care® Guiding Principles. This enables us to achieve our sustainable development goals: economic growth, improved environmental performance, and social and community benefits.

**Case History**

Our South Arkansas operations are just one example of how sustainable development is possible with careful planning and applying innovative solutions.

Chemtura’s Great Lakes Solutions business produces flame retardants. These products are used to prevent fires in products ranging from cell phones and laptops, to televisions, to cars. A key component of these products is bromine in various forms.

Bromine is a naturally occurring element. It is present in sea water in low concentrations. There are only a limited number of places on earth where bromine occurs in sufficient concentrations to be of economic utility. One of those places is South Arkansas, where bromine exists in high concentrations in the salt waters of the Smackover Formation at a depth of about 7,500 feet. Between the 1920s, when oil was first discovered in Arkansas, and now, the state has produced many millions of barrels of oil. When oil was discovered in South Arkansas, oil field “brines” were considered a worthless byproduct of drilling, and the oil producers had problems disposing of the salt water. Then, chemists discovered that the Smackover brines had high bromine content—about 50 times greater than that of ocean water.

In South Arkansas, Chemtura has three plants that produce bromine from the brine and manufacture bromine-related products. With hundreds of miles of pipeline, the plants pull brine out of the Smackover Formation, remove the bromine, substitute it with chloride ions, and then inject the brine back into the Smackover Formation. When salt water is pumped from the ground, an economically valuable mineral (bromine) is removed, another mineral (chloride ion) is added, and the salt water is replaced, keeping this valuable formation hydrostatically intact.
A closer look at Chemtura's South Arkansas plants and their neighboring industries tells a compelling story of how economic growth, environmental improvement, and societal benefit — the essential elements of sustainable development — can go hand-in-hand with manufacturing.

For example, with the extraction of brine come oil and natural gas. At the well head, oil and natural gas are separated from brine, and the small quantity of oil present is separated from the natural gas and provided to a local refinery for use. The natural gas (methane), which contains high levels of hydrogen sulfide, is called “sour gas.” Rather than burn off the sour gas at the well head and release carbon dioxide, we collect it through a network of piping, compress it, and send it to a neighboring industrial plant, where the impurities are removed and the natural gas (now called “sweet gas”) is returned to us. We then use that sweetened gas as an alternative fuel in our boilers. Instead of burning off methane at the well head, we reduce our carbon footprint by utilizing this methane to operate our plant and avoid the purchase of additional carbon-based fuel. Our industrial neighbor takes the hydrogen sulfide that was removed from the sour gas and produces elemental sulfur. That sulfur is, in turn, sold to another industrial neighbor, where it is turned into sulfuric acid, a useful raw material that is then sold.

Once the bromine is removed from the brine, it’s called “tail brine.” This tail brine contains valuable minerals that can be converted to useful products. In 2008, Chemtura and TETRA Technologies established a supply agreement by which Chemtura provides tail brine for TETRA's calcium chloride plant. TETRA takes some of the tail brine and recovers calcium chloride, sodium chloride, and magnesium hydroxide prior to the tail brine being placed back into the ground. The extraction of these minerals is without any adverse environmental impact. The new TETRA facility was built with an investment of about $100 million and permanently employs 65 people. The Chemtura South Arkansas facilities provide permanent employment to 400 people.

The net result is that our South Arkansas operations, in cooperation with several industrial neighbors, maximize the use of brine to generate bromine (used to produce useful products), oil, natural gas (which is then used as fuel), sulfur (used to make sulfuric acid), sodium chloride (road salt), calcium chloride (used in industrial applications), and magnesium hydroxide (used in water and wastewater treatment facilities). The close proximity of these plants allows these products to be extracted, supplied, and produced with minimal transportation footprint and risk. The net result is the creation of economically valuable products and stable jobs.
Chemtura Corporation’s Environmental, Health & Safety Performance

Personnel Safety
At Chemtura, “All Employees Actively Leading the Journey of Living Incident Free” is the safety vision statement we live by.

The Total Recordable Case Rate (TRCR) is an industry standard, quantitative measure of how well we are doing to achieve the goal of an incident-free workplace. The TRCR measures the number of recordable injuries in the workplace for each 200,000 hours worked. Chemtura’s TRCR target for 2010 was 0.5. The low TRCR achieved by Chemtura has placed it within the top quartile for best safety performance among all U.S. ACC member companies.

This was a result of Chemtura’s focus on safety performance, incident investigation, cause mapping, shared safety learnings, and prompt implementation of corrective actions. Chemtura’s focus on safety and an incident-free culture is exemplified by the continued outstanding performance by facilities such as the one in Rio Claro, Brazil. In March 2011, the Rio Claro site celebrated 11 years of continuous operation without a recordable injury (see box).

Greenhouse Gas Emissions
Chemtura tracks its Greenhouse Gas (GHG) emissions at its facilities worldwide and has presented the results for the period 2008-2010. Following the ACC’s protocol, Chemtura has reported the GHG emissions at its facilities as well as the GHG emissions due to purchased electricity, steam, natural gas, etc.

Between 2008 and 2010, Chemtura’s GHG emissions rate has decreased 22%. With increased production accompanying post-recession economic recovery, Chemtura reiterates its commitment to strive to minimize its carbon footprint and continue the downward trend in its GHG emissions rate.

Employees of Chemtura Indústria Química do Brasil Ltda., with its plant located in Rio Claro, Brazil, have achieved 11 consecutive years without a recordable injury case.
Energy Use
Chemtura tracks energy use at its facilities including electricity, natural gas, liquid fuels, and live steam. Energy use is recorded in the common unit of millions BTU or MM-BTU per tonne production.

Chemtura's total energy use decreased 8% from 2008 to 2010 while its production levels decreased 13% over the same period. Chemtura anticipates that total energy use will continue to decrease as it continues to deploy energy efficiency projects at its production facilities, thus leading to increased energy efficiency as measured by MM-BTU used per tonne of production. This will also help to reduce greenhouse gas emissions.

Water Consumption
Water consumption at Chemtura is reported in cubic meters. Chemtura’s water use rate per tonne of production increased 36% between 2008 and 2009. This same rate decreased by 10% between 2009 and 2010. Chemtura will continue to evaluate and manage its water use as part of an overall operations strategy for Responsible Care®.

Hazardous Waste
Between 2008 and 2009, Chemtura’s hazardous process waste generation rate (Kg waste per tonne production) increased 41%. That same rate increased 1% between 2009 and 2010. Chemtura is evaluating the implementation of minimization programs for its hazardous process waste and anticipates reducing its total waste generation in the future.

Non-Hazardous Waste
During the period of 2008 to 2009, Chemtura saw its disposal of non-hazardous process waste (Kg per tonne of production) increase by 17%. Between 2009 and 2010, that rate dropped by 1.5%. Chemtura is also evaluating the implementation of minimization programs for its non-hazardous process waste and anticipates reducing its total waste generation in the future.

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### Table: Energy Use [MM-BTU] per tonne production

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<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2009</th>
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### Table: Water consumption [m3] per tonne production

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<th>2010</th>
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</tbody>
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### Table: Hazardous waste [Kg] per tonne production

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<th>2009</th>
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<td></td>
<td>43</td>
<td>61</td>
<td>61</td>
</tr>
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1 Includes hazardous process wastes related to production. Hazardous wastes associated with remediation projects are not included.

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### Table: Non-hazardous waste [Kg] per tonne production

<table>
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<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tbody>
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<td></td>
<td>60</td>
<td>70</td>
<td>69</td>
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</tbody>
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2 Includes non-hazardous process wastes related to production. Non-hazardous wastes associated with remediation projects are not included.

* In all reported cases, rates were affected by the recession.
Responsible Care® at Chemtura

Reducing, reusing, recycling  ▶  Chemtura AgroSolutions

Chemtura recognizes the importance of ensuring that plastic containers for pesticides and other agrochemicals are cleansed of product residues, then either reused or recycled into renewable plastic products.

That’s why we are an active supporter of programs to fulfill social and environmental responsibilities related to the issue of empty containers in every global region where Chemtura AgroSolutions does business.

For example, in South America we are associated with the National Institute for Processing Empty Containers (InpEV), a non-profit assisting the Brazilian crop protection industry with its responsibility to provide proper disposal of empty product containers. Chemtura and 40 other InpEV member companies have contributed more than $90 million (US) to the effort over the last five years.

In six years (2002 through 2007), the proper disposal of containers through InpEV brought an environmental gain equivalent to 302,000 barrels of oil that did not need to be extracted, meaning 131,000 tons of CO2 equivalent was not emitted into the atmosphere.

The program has removed more than 108,000 tons of empty containers from the environment since 2002 and has recycled more than 94 percent of the containers that were collected in 2008.

In Europe, Chemtura AgroSolutions works with the European Crop Protection Association (ECPA) and Crop Life International (CLI) to support the establishment of national container recycling programs throughout Europe. In 2009, a total of 2,400 metric tons of agricultural pesticide packaging was taken back through 276 collection points as part of the Packaging Recovery Agriculture (PAMIRA®) system in Germany. Programs for empty agricultural pesticide containers are now operational in 12 European countries with a further seven programs in Eastern Europe currently in the pilot phase. In 2009, these programs were responsible for the collection of more than 12,000 metric tons of plastic container material across the continent.

InpEV has removed more than 108,000 tons of empty containers from the environment since 2002 and has recycled more than 94 percent of the containers that were collected in 2008.

In six years (2002 through 2007), the proper disposal of containers through InpEV brought an environmental gain equivalent to:

► 302,000 barrels of oil which did not need to be extracted, and
► 131,000 tons of CO2 equivalent that was not emitted into the atmosphere.

What are the benefits?
Container management programs deliver a variety of benefits, including:

► Safe delivery of products to final customer,
► Protection of the environment and container recycling operator from unnecessary exposure,
► Safe disposal of used packaging, and
► Reduced waste and maximized recycling.

Resource conservation impacts of these programs include:

► Saving of landfill space,
► Energy savings (reducing need to burn or extract oil), and
► Reduction of carbon emissions.

What isagood program?
Since the inception of the program in May 1999, there have been 16,341,264 containers collected across Australia representing 21,237 tons of recyclable materials.

In the United States, Chemtura AgroSolutions works through the Ag Container Recycling Council (ACRC) to safely collect and recycle high-density polyethylene plastic crop protection product containers. Thousands of farmers and applicators nationwide participate in this free recycling program. The ACRC is fully funded by Chemtura and other member companies and affiliates that formulate, produce, package, and distribute crop protection and other pesticide products.

In Australia, Chemtura AgroSolutions supports the drumMUSTER industry waste reduction program through Agstewardship Australia to recycle eligible non-returnable, rigid plastic and steel containers utilized for crop protection and animal health products. The program’s objectives are to reduce the number of containers entering the distribution stream by encouraging manufacturers to adopt alternative packaging containers, technology and/or formulations, and to ensure non-returnable containers have a defined route for disposal that is socially, economically, and environmentally acceptable.

**Measurable savings**
ACRC-sponsored recycling programs have collected more than 100 million pounds of containers, resulting in:

- Saving more than 500,000 million cubic yards of landfill space,
- Reducing 19,500 metric tons of carbon equivalent, and
- Saving the energy equivalent of 22 million gallons of gasoline.

Every ton of high-density polyethylene (HDPE) plastic recycled into new products, as compared to using virgin HDPE plastic, results in an energy savings of 51,400,000 BTUs – the equivalent of 450 gallons of gasoline.
Responsible Care® at Chemtura

**VECAP™**  ►  **Great Lakes Solutions**

As a leading global producer of specialty chemicals, Chemtura is committed to Responsible Care®, the chemical industry’s voluntary initiative to protect the environment, ensure the safety and security of its operations, and safeguard the health and safety of employees and the communities in which we live and work.

Under Responsible Care®, we pledge to be stewards of our products from manufacturing and handling through transport and disposal.

As part of our product stewardship program, Chemtura is continually working to reduce emissions from our manufacturing sites as well as working with our supply chain partners to do the same.

Chemtura’s active participation in the brominated flame retardant industry Voluntary Emission Control Action Program (VECAP™) is an example of the depth of our commitment to product stewardship and emissions reduction.

Chemtura’s Great Lakes Solutions business helps its flame retardants customers to identify, control, and minimize the potential for emissions of its additive products to air, water, and land.


VECAP™’s Code of Good Practice makes health, safety, and the protection of the environment an integral part of all day-to-day activities associated with plastic additive manufacturing processes: design, production, marketing, use, recycling, and disposal.

“VECAP™ began with a focus on flame retardants, but its principles and methodology are applicable to a wide range of liquid and powdered solid plastic additives,” says Steve Scherrer, Great Lakes Solution’s Product Stewardship Manager.

One step in the VECAP™ process involves performing a “mass balance” analysis.

For plastics, analyzing the mass balance indicates that air emissions from the emptying of powdered products from packaging is a potential emission pathway in plastic applications. Working with customers to apply best practice procedures for emptying bags of flame retardants is a simple measure that can greatly reduce the potential for flame retardant emissions to the environment. Reductions of 50 percent or more are often readily achievable simply by more effectively emptying product packages.

Mass balance is only one step in the VECAP™ process, which starts with the user’s commitment to the program, signing on to the industry’s Code of Good Practice, and implementing it in daily operations.

Next, the company identifies the production flow sheet for its operations with a self-audit, followed by the mass balance, which signals any gaps in the amount of the specified plastic additive entering and leaving the production process.

The company then uses the results of an emissions survey as a baseline to demonstrate actual performance and to detect future emission reduction priorities. An emission improvement plan is next determined in accordance with the company’s own objectives and policies. Finally, once the plan is implemented, results are evaluated to look for further potential emissions reduction opportunities, ensuring effective continuous improvement.
GeoBrom™ — Great Lakes Solutions

For the last 10 years, Chemtura’s bromine enterprise has focused on a “Greener Is Better” approach to product development, with attention to manufacturing and new product introductions that help protect and improve the environment.

GeoBrom™ products are among the latest offerings under Chemtura’s “Greener Is Better” umbrella of products, in response to the global need to cut mercury emissions from coal-fired power plants and boilers.

Studies carried out at coal-fired power plants have shown that inorganic brominated derivatives like calcium bromide or sodium bromide are effective in oxidizing mercury into species that are more easily captured on sorbents, in flue gas desulfurization scrubbers, and in electrostatic precipitator units.

The bromine derivatives are added to the coal prior to, or after, pulverization; to the combustion zone in the boiler; or to the flue-gas upstream of the remediation controls. Removal efficiencies of up to 90 percent have been demonstrated with these types of technologies.

Other studies have shown that bromine and brominated derivatives such as sodium bromide can be used to produce halogenated activated carbon that is injected into the flue downstream from the boiler to oxidize and capture the mercury on the sorbent. This technology has also been demonstrated to remove up to 90 percent of the mercury from the power plant units burning coal fuel.

GeoBrom™ products have been designed for incorporation into new technologies that use bromine or brominated derivative products for the efficient removal of mercury from coal-fired power plant emissions. It is one of many ways in which Chemtura is delivering a cleaner future through chemistry.

Solar Panels & High Brightness LEDs — Organometallic Specialties

Emerging technologies hold the potential to supplement the world’s energy mix with options that convert solar energy into electricity — and one of the most promising is the thin-film photovoltaic (TFPV) solar module.

Chemtura Organometallic Specialties plays a major role as a leading producer of diethylzinc (DEZ), an essential precursor in the production of TFPV panels — the type of solar panel favored in various markets, including China, the world’s largest market for domestic photovoltaic panels — because they have a cost advantage and use less energy to produce than other types of solar technologies.

On the electricity consumption side, Chemtura Organometallic Specialties is applying its expertise to the production and marketing of trimethylaluminum (TMA), a key material used in the manufacture of high-purity metal organic precursors for use in the production of High Brightness LED (HB LED) chips.

The HB LED market is experiencing intensive growth, fueled by backlighting and general illumination applications, which require more energy efficiency.
Responsible Care® at Chemtura

Extended-Life Lubricants  ▶ Petroleum Additives

Ozone layer depletion, automotive emissions, and global warming are important issues among many affecting the health of our planet. And with approximately 60 percent of its portfolio composed of greener products, Chemtura’s Petroleum Additives business is helping end-users reduce their carbon footprint.

Chemtura’s Hatcol® and Everest® refrigeration oils are compatible for use with the non-ozone layer depleting refrigerants that are mandated to phase out ozone-layer depleting refrigerants in Europe and the U.S., with other countries and regions expected to follow.

Extended-life industrial and automotive oils are made possible by Chemtura’s Synton® line of high-viscosity polyalphaolefins, with Synton® PAO 40 widely used in wind turbines to generate electricity with low emissions.

Chemtura anti-oxidants promote longer lubricant life and help reduce automotive emissions as mandated by the U.S., European Union, Japan and increasingly in China and Russia.

Advanced friction modifiers from Chemtura help vehicle manufacturers meet the U.S. National Highway Traffic Safety Administration’s Corporate Average Fuel Economy (CAFE) standards.

Rancona® seed treatment  ▶ Chemtura AgroSolutions

Modern seed treatments go a long way to protect and improve crop yields using low application rates. They are applied at about 1% of the rate per acre compared to other forms of crop protection and are targeted where they are needed — the seed, and then the growing plant.

Rancona® seed treatment from Chemtura AgroSolutions (active ingredient: ipconazole) offers the most protection with the lowest application rates in the industry — 50 times lower than traditional seed treatment fungicide rates and eight times lower than modern industry leaders, such as difenoconazole.

Rancona®-treated seed results in ultra-low crop residues. In most crops, it is so low in fact that there is not considered to be any meaningful dietary uptake once food grown from treated seed is consumed, a status attained by meeting the most stringent scientific measurement method available.

Even in crops where Rancona® meets only the normal standards, residues still can’t be detected by conventional means when applied at five times the normal use rate.

Rancona® gives farmers a new tool for better and more reliable yields – fewer instances of disease wiping out a crop stand under adverse conditions, more food for a hungry planet. The payback in terms of sustainability is big: improved crop quality and higher yields, feeding more people from the same land.

Chemtura pioneered the modern seed treatment era with the introduction Vitavax® (active ingredient: carboxin) circa 1970, to replace the mercury-based compounds that had been in common use until then.

This tradition lives on. Seed treatments do a lot with a little. Rancona® does the most with the least.
Chemtura AgroSolutions has developed a variety of formulations of its Dimilin® larvicide to control mosquitoes around the world in an effort to combat the diseases they transmit — primarily malaria and dengue fever in the developing regions of Africa, Asia-Pacific, and Latin America.

The active ingredient — diflubenzuron — kills mosquitoes by preventing their larvae from molting.

Diflubenzuron, which does not affect humans, mammals, or birds, is formulated as a wettable powder for spray application, an effervescent granule for broadcasting into breeding sites in shallow water, and an effervescent tablet for use in rain-collection potable water tanks.

The specifications for the active ingredient and formulations have been published by the World Health Organization (WHO) Pesticide Evaluation Scheme following an evaluation of quality standards by a joint WHO and United Nations Food and Agriculture Organization committee. This allows Chemtura to participate in public tenders issued by such organizations as WHO, the United Nations Children’s Fund (UNICEF), and the United States Agency for International Development (USAID).

Chemtura’s diflubenzuron and the granule and tablet formulations also have received the WHO recommendation to be used for treating drinking water. Drinking water in containers is the main breeding site for Aedes aegypti, the mosquito vector of dengue fever. A significant percentage of the populations of Latin America and Asia do not have fresh running water at home and are obliged to collect rain water for drinking, washing, and cooking.

In addition, Chemtura is conducting a multi-year project in Ivory Coast to demonstrate the value of a larvicide strategy in combination with indoor residual spraying to reduce the incidence of malaria.

In Latin America, Chemtura is in the process of registering diflubenzuron products in Colombia, Panama, Ecuador, Mexico, Argentina, Brazil and Uruguay for Aedes aegypti control to reduce the number of dengue cases. In Brazil alone, there are about 600,000 cases of dengue fever each year and 300,000 cases of malaria.

According to UNICEF, malaria kills 1 million of the 350 million to 500 million clinical cases contracted globally each year. Sub-Saharan Africa is the world’s hardest-hit region for malaria. More than 80 percent of each year’s global deaths — 800,000 — occur among African children under age 5: three of these children die of malaria every two minutes.

Community outreach in India

P.S. Mohan, head of plant and supply chain at Chemtura’s plant in Gajraula, India, distributes winter clothing to a pupil from a school for underprivileged girls from nearby Ujhnaari village. In addition to the provision of clothing, Chemtura has taken responsibility for the children’s education. Previously, the Gajraula plant extended a bore well pump for drinking water and provided fencing for the school grounds. “The Gajraula plant is keen on extending the support to the children under poverty to continue their education successfully,” said Bharat Pandey, Chemtura general manager, South Asia.
Chemtura’s Businesses

Chemtura AgroSolutions

Chemtura AgroSolutions is a leading provider of fungicides, herbicides, insecticides, miticides, plant growth regulators, and seed enhancement products with a reputation for product innovation and field service expertise.

Our products protect and enhance the quality and yield of tree fruits, tree nuts, vines, vegetables, cereals, ornamentals, and select row crops.

Our products are carefully formulated to enhance quality and increase yield in specialty crop markets across the globe by protecting plants from insect pests, mites and diseases, as well as eliminating unwanted weeds. We provide comprehensive solutions to our customers and take pride in doing the right thing, the right way.

Headquartered in Lawrenceville, Georgia, United States, we’re a global business serving four distinct regions: North America; Latin America; Asia Pacific; and Europe, Middle East and Africa (EMEA). With a new, state-of-the-art Technology Development Center, we’re positioned better than ever to serve our customers’ unique needs.

Formerly known as Chemtura Crop Protection, we renamed our business to reflect our long-term strategy, initiatives, and investments that directly support new product formulations, applications, delivery, and service. Chemtura AgroSolutions supports safe and efficient pest control use with a manufacturing platform focused on product quality and availability. Formulations are continually reviewed and repurposed for specific crops and geographical regions to enhance quality and increase yield.

Chemtura AgroSolutions remains focused on delivering high-value plant health and pest control products that are backed by proven field expertise and service. We’re also committed to expanding our portfolio of solutions for customers in targeted markets around the globe. Chemtura AgroSolutions will build on its past global success with an ongoing commitment to long-term portfolio investment for new product development, improved product availability and delivery, and new crop labels and pest control options to meet growers’ needs.

Petroleum Additives and Lubricants

Our Petroleum Additives business comprises a broad portfolio of lubricant additives, fuel additives, synthetic basestocks, and synthetic finished lubricants and greases used in a wide range of applications and industries. These include the automotive industry, marine industry, power generation, aviation, and certain niches in the industrial market, such as refrigeration and grease.

Petroleum Additives is a combination of Chemtura’s heritage businesses such as Witco detergents, Uniroyal antioxidants, and Great Lakes phosphate esters, complemented by the acquired fluids business of Hatco and Anderol. These businesses have strong cohesion due to a common set of global customers and a focus on lubrication.

The business is globally organized with manufacturing, sales, and customer service capabilities in all regions to serve our customers’ needs both on a regional and global basis.

The business has a strong focus on greener technologies with 60% of the business volume targeted at applications that are of environmental benefit. These include:

- **Synton® High-Viscosity Polyalphaolefins (PAO)** – used in gear oils in wind turbines, which generate electricity with low emissions, and industrial and automotive applications to extend the life of the fluid.
Hatcol®, Everest® refrigeration oils – Polyolester (POE)-based oils, which are compatible for use in conjunction with hydrofluorocarbon (HFC) refrigerants. HFC refrigerants are considered to have a reduced effect on the stratospheric ozone layer, unlike the chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants they are replacing. HFCs are already used in Europe and the U.S., and are increasingly being selected for use in China and elsewhere.

Naugalube® antioxidants – prolong lubricant life and help reduce automotive emissions as mandated by the U.S. Environmental Protection Agency, the European Union, the Japanese Ministry of Economy, Trade and Industry, and increasingly China and Russia.

Naugalube® friction modifiers – help reduce friction and hence fuel consumption in automobiles, helping automakers achieve the number of miles per gallon mandated according to Corporate Average Fuel Economy (CAFE) standards. Used in engine oils on a global basis.

Urethanes

Chemtura's Urethanes business is a world leader in hot-cast prepolymers and a leading manufacturer of specialty aqueous urethane dispersions and polyester polyols.

The business is characterized by a strong customer focus, exceptional product and applications development capability, and outstanding technical service. Our customer relationships, combined with our broad product range and technical capabilities, allow us to create value-added solutions for demanding urethane applications around the world. Customers bring us their most complex processing and application challenges, and we work with them to develop winning solutions.

We offer more than 300 Adiprene®/Vibrathane® hot-cast urethane prepolymer products. The product range includes a wide variety of wear and abrasion resistant cast elastomers that are recognized worldwide for their toughness, load-bearing capacity, and cut and tear resistance. These products give strength and durability to mining, oil, gas, and paper industry equipment and electrical components. Our prepolymers, curatives and systems are used in industrial and printing rolls, mining and oil and gas machinery and equipment, mechanical goods, solid industrial tires and wheels, electronic devices and processing equipment, and a variety of recreation and consumer goods.

In addition to the physical properties that characterize the performance of the materials, the Urethanes business places strong focus on the sustainability of its products. To this end, many newer technologies have been developed with significant environmental, health, and safety benefits. Chemtura Urethanes is a leading innovator in the development of the low-free isocyanate technology, which brings unparalleled performance and safety benefits to the market.

The Duracast® system is one notable mention. It combines the best of our low-free pre-polymer, with the curative MOCA-free benefits of our Duracure™ curative technology. In another effort to reduce environmental impacts of Vibrathane®/Vibracure Quasi Systems, mercury has been replaced with lower-impact alternatives.
Antioxidants and UV Stabilizers

The broad range of our antioxidants plays an important role in counteracting the effects of degradation and oxidation of material when exposed to ambient air during processing and in the end product.

Of equal importance, our UV stabilizers counteract the deteriorating effects of the sun and its UV radiation on many organic materials, polymers, and human skin.

The business is a leader in delivering its materials in non-dust forms, including liquid antioxidants and its proprietary Anox NDB® technology that enables up to eight components to be delivered in a single granular blend. The avoidance of dust provides our customers with a series of environmental and safety benefits.

Thus, our products lend important attributes that increase the performance and value of plastics in numerous applications, from light-weight, fuel-saving components for transportation to high-performance building and construction materials. A one-year study by the American Chemistry Council found that the use of plastic building and construction materials saved 467.2 trillion BTU of energy over other materials. That’s enough to meet the average annual energy needs of 4.6 million U.S. households.

Chemtura is committed to maintaining the highest standards of excellence in product quality, productivity, and customer satisfaction. And, this philosophy also applies to our environmental practices. We recognize that wise environmental practices today can ensure safety and prosperity for future generations. Therefore, Chemtura takes an active role in Responsible Care® by continually refining our manufacturing processes to further improve our sound environmental record.

Great Lakes Solutions

Great Lakes Solutions is the flame retardants, brominated performance products and fumigants business of Chemtura — providing materials and services for use in electronics, electrical, building and construction, fine chemicals, agriculture, power generation, transportation, water treatment, oil refining, applications and more.

Great Lakes Solutions is dedicated to providing bromine and phosphorus flame retardants and brominated performance products that are the most innovative and reliable. Great Lakes Solutions works to deliver products that minimize the impact on our environment and human health. For close to a century, we have helped our customers to meet their current and future performance, safety, and compliance requirements by refining and redefining our portfolio with new and improved products.

The business is committed to strong performance and to providing for the safety of its employees, customers and their customers, as well as meeting industry and environmental standards and goals. The areas of performance, safety, and sustainability permeate the organization and are closely related to make Great Lakes Solutions the business it is today.

A new series of flame retardants is the result of our dedication to providing products that are innovative and reliable and also minimize the impact on our environment and human health without sacrificing performance or quality.

We offer a wide variety of performance products for a variety of applications, including fine chemicals, power generation, transportation, oil refining, water treatment and more. Our GeoBrom™ bromine and bromine derivative products are part of the clean coal technologies developed to efficiently remove mercury emissions from coal-fired boilers and power plant installations.

GeoBrom™ products are part of Great Lakes Solutions’ commitment to the “Greener Is Better” program, focusing on adding value to the power industry and contributing to energy sustainability, environmental stewardship, and clean, reliable, cost-effective power for the consumer.
Organometallics

Chemtura Organometallics’ core competency is the production and safe handling of selected reactive organometallic products. The combination of 50 years of operation and innovative development excellence with our global supply chain capabilities form the basis for a sustainable, customer-oriented business model.

Chemtura Organometallics is a global partner for manufacturing, marketing, and development of specialty organometallic products used in polymer production, synthesis of fine chemicals and pharmaceuticals, in processes for production of semiconductor devices and photovoltaic modules, in glass coating, and in automotive anticorrosion coatings.

Among exciting recent developments are the formation of a joint venture with UP Chemical Co. Ltd. of South Korea for the production and sale of high-purity metal organic precursors for the rapidly growing LED market — the future of energy-efficient commercial and domestic lighting. The Organometallics business also recently expanded production capacity for custom-made, high-purity diethylzinc to satisfy growing demand in thin-film photovoltaic applications — part of the growing global market for clean solar energy.

Chemtura’s Organometallics business has the following market focus areas:

**Polymerization Catalyst Components** – Essential part of the catalyst system used as activator to accelerate the reaction which produces a polymer.

- **Ziegler-Natta** – Established and continuously optimized and steadily growing technology used in polymerization and oligomerization of alkenes resulting in polyolefin products of high performance with a broad variety of applications. Includes products like triethylaluminum (TEA) and ethylaluminum sesquichloride (EASC).

- **Single Site Catalysts** – Are used in this modern polymerization technology to produce polymers with special properties such as engineered plastics, car parts, specialty food packaging, and high performance pipes. Includes metallocenes and methylaluminoxane (MAO).

- **Organic Synthesis** – Our products are used as reagents in the production of pharmaceuticals and other fine chemicals to conduct complex chemical reactions. Generally used to make active ingredients or key building blocks for pharmaceuticals. Includes metal alkyls like diethylzinc (DEZ), diisobutylaluminium hydride (DIBAH), trimethylaluminum (TMA) and a variety of organotin compounds.

- **Photovoltaics / Electronics** – Products mostly related to solar cells and specialty semiconductors. Metal alkyls are used as a source to produce a high-purity metal oxide coating. Includes DEZ and TMA.

- **Organotin Coating Products** – Chemtura is a leading provider of a wide range of solid and liquid organometallic compounds, sold under the trade name AXION™. AXION™ compounds are used in various applications including esterification, transesterification, curing and cross-linking in coatings, glass coating, and organic synthesis of pharmaceutical intermediates.

- **Organotin Intermediates** – Chemtura offers a range of intermediates used in the manufacture of fine chemicals and pharmaceuticals as well as in the manufacture of other chemical products used in a spectrum of industrial synthetic applications.
Chemtura’s Businesses

Consumer Products

Pool and Spa

Chemtura’s Consumer Products business is a leading global supplier of water-treatment sanitizers and related products for recreational and commercial pool and spa applications, promoting cleanliness, health, and safety. We have a comprehensive product offering, multiple distribution channels, and an excellent reputation for our value-added services.

Our product range includes:
Sanitizers, algaecides, oxidizers, pH balancers, mineral balancers, shock chemicals, and specialty chemicals to keep pools and spas sparkling clean. Our products can assist in solving any swimming pool or spa problems. We help make pool and spa maintenance easier for consumers and provide valuable tools and programs to assist professional retailers.

Our pool and spa products are marketed under several brand names (BioGuard®, Aqua Chem®, BAYROL®, Guardex®, Hydrotech®, Miami, Omni®, Pool Time®, ProGuard®, Spa Essentials®, SpaGuard®, Spa Time® and Sun®).

Household Cleaners

Chemtura’s specialty and multipurpose cleaning products are useful for both indoor and outdoor applications. Our proprietary formulas can be used in the household in the kitchen, bath and laundry as well as for the patio and garage and on automotive surfaces.

Our products include The Works® brand of cleaners and Greased Lightning® brand of multipurpose cleaners for tough cleaning tasks and everyday use.
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As a leading specialty chemicals company, Chemtura Corporation is well-positioned to grow through innovation in greener technologies. Our expertise ranges from highly specialized organometallics for making clean-energy solar panels to advanced lubricant additives that help increase gas mileage and lower tailpipe emissions.

Chemtura’s motto – *The Future Through Chemistry* – envisions the opportunity to continue developing advanced technology products while promoting sustainability and environmental stewardship.

The same philosophy guided the production of this report, printed on Rolland Enviro100 Print® paper, which is manufactured using biogas energy, contains 100 percent post-consumer fiber, and is Forest Stewardship Council (FSC) certified. This report also has been printed using 100 percent vegetable-based pigments in a facility that is FSC-certified.

FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world’s forests. FSC certification is a voluntary, market-based tool that supports responsible forest management worldwide. FSC certified forest products are verified from the forest of origin through the supply chain. The FSC label ensures that the forest products used are from responsibly harvested and verified sources.

Chemtura applauds the Forest Stewardship Council in its efforts to raise global awareness of the benefits of responsible forest management and the sustainable use of wood and wood fibers.