



Pharmaceutical Ireland

# Responsible Care Report 2011

PHARMACHEMICAL IRELAND  
Focused on a Healthy Future

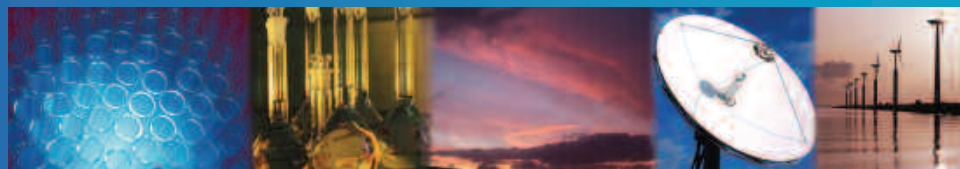


**Responsible Care®**  
OUR COMMITMENT TO SUSTAINABILITY



A business sector within IBEC | the Irish Business and Employers Confederation





## Chairman's Foreward



PharmaChemical Ireland

Once again it is a pleasure to review and comment on our collective performance in the area of Responsible Care. The performance achieved by our industry in this area is in part due to the significant focus the EHS working group brings to it and in part to the individual member companies who take Responsible Care to heart in their operations. Congratulations and thanks to all of you who have contributed to the results contained in this report.

2011 was another year of uncertainty in global markets. The number of people working directly in the industry continues to decline. This is reflected in the decline of 8.7% in the numbers of hours worked over the period in question (2008-2010). However, the good news is that production volume increased by 10% over the same period. As the employment number is considered to be a lagging economic indicator, it is hoped that the increase in production will feed through to increased employment in the coming years.

This is a people based industry. Many member companies operate in the human healthcare area - that is why it is essential that this commitment to human health starts on site. A 24% reduction in the "Lost Time Injury Rate", for the second year in succession, is a most impressive result which clearly demonstrates the importance placed by all of our members on providing a safe place to work. Nothing we do is worth any of our colleagues being injured so all companies are encouraged to keep the focus on further reducing this indicator in the coming years.

Clean water is becoming an increasingly scarce resource worldwide. Over the last few years the industry in Ireland has become conscious of the importance of this resource and actively encourages member companies to minimise its use in their day to day operations. We can report a decrease of 4.6% in water consumption by our member companies over the three year period to from 2008 to 2010. This is an excellent achievement during a period of increase output in production volumes.

The coming years will continue to bring many challenges. Pharmachemical Ireland will continue to use Responsible Care as a core differentiating activity. We do this because it makes sound business sense and because it is simply the right thing to do. Ireland rightly takes its place in the middle of the global pharmaceutical business; now we have an opportunity to show others how to drive great businesses in a responsible way. We will continue to encourage focus in this area and active participation in the EHS working group. Over the course of 2011 a total of 198 company personnel attended EHS working group meetings on member sites.

It is a privilege to represent the Pharma Chemical Industry and to be associated with the excellent EHS performance. While we work in an ever changing world, we continue to work hard to developing a sustainable business. To this extent we look forward to supporting Responsible Care in everything we do.

**Gerry Collins Janssen Pharmaceutical**  
Chairman, PharmaChemical Ireland



## Chairman's Foreward >

Environment, Health & Safety  
working group

Overall performance indicators for environment and safety continued to trend downwards in 2011 with significant decreases in a number of indicators, with particularly noteworthy reductions in waste disposal, water consumption and lost time injury rates. This continues a downward trend evident over almost a 10 year period in which employee numbers and production output increased, despite a recent drop off in growth due to the global economic downturn.

The figures reported to the end of 2011 look at trends over a three year period for member companies as a whole and they show significant progress in a number of areas. For example, we are pleased to report decreases of 15.7% in phosphate and 16.5% in nitrogen discharge to waters. Hazardous waste is reduced by 11.9% and non-hazardous waste by 39%. In addition, water consumption decreased by 5% over the reporting period.

There was a continued improvement in Lost Time Injury rates with a very significant overall decrease of 24% over the three year reporting period. This rate has halved since 2003 and it is a testament to the continuing in-company efforts to prioritise safety. Indeed this figure reads even better when one considers that it has occurred at a time when production levels have increased by 10%.

Within our member companies, Responsible Care is acknowledged as the fundamental non-corporate Environmental, Health and Safety initiative contributing positively to our employees and the communities in which we operate. We will continue to encourage all our members to reinforce their efforts to achieve the very best in their EHS commitments.

I would like to take this opportunity to thank all our member companies for their continued support and commitment to the Responsible Care principles and in particular for the generosity shown by many of our companies in sharing their best practices for the benefit of the sector as a whole.

**Conor O'Brien Recordati**  
**Chairman EHS working group**





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## Introduction



PharmaChemical Ireland has produced its 2011 annual Responsible Care report outlining the performance of the sector over the previous three years (2008- 2010).

This report follows the Responsible Care ethos and highlights the member companies' commitment and initiatives that were taken to demonstrate continuous improvement of operational performance.

Once again the report includes input from our sister organisation Chemical Distribution Ireland (CDI). CDI members are committed to best practice in chemical distribution and their ongoing responsibility in areas of product stewardship, safety, environment and quality. This is why they have embraced the ethos of Responsible Care and indeed it is now mandatory for membership of CDI.

A selection of the various Responsible Care activities is covered in this report including initiatives in communications, the environment and safety. Furthermore we report on the winners of the 2011 Responsible Care Awards.

The progress made by the companies' in reducing their emissions over many years has continued into this year. We are particularly pleased to report the following improvements:

### Environment >>

The report shows decreases of 12% for hazardous waste and 39% non-hazardous sent for disposal. In addition we note that phosphate discharges to waters decreased by 15.7% with a 16.5% reduction in nitrogen discharge to waters.

### Safety >>

There was a significant decrease of 24% in the lost time injury rate over the three year reporting period. This is the second year in succession that we have observed a similar rate.

The members of PCI evaluate themselves against a series of management codes to assess their commitment to EHS best practice. The health & safety, environment, energy and the product stewardship codes place a requirement on companies to identify gaps in their performance and address these areas. The results demonstrate that companies are improving on the requirements of the codes year on year.

The aim of the industry is to produce products that enhance the quality of life, prevent and treat diseases and alleviate suffering. We recognize that the health of the environment and public wellbeing are part and parcel of achieving this goal. We believe that it is in the interest of all stakeholders in our industry to have a vibrant pharmachem sector operating in Ireland to world class standards. That is why Responsible Care is a foundation principle of the activities of PharmaChemical Ireland.



## What is Responsible Care?



**Responsible Care is our commitment to sustainability: the global chemical industry's unique initiative to improve its health, safety and environmental performance.**

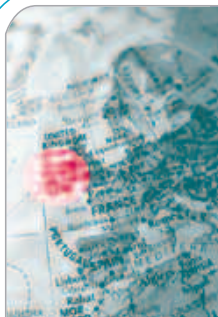
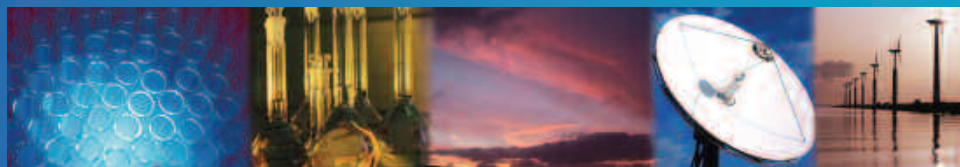
Responsible Care is the global Chemical industry's environmental, health and safety (EHS) initiative to drive continuous improvement in performance of the pharmaceutical and chemical sector in all aspects, which directly and indirectly impact on the environment, employees or the general public. Responsible Care companies actively strive to maintain leadership in safety and environment performance.

The Responsible Care ethic helps chemical companies to operate safely, profitably and with due care for future generations.

In Ireland each member of PharmaChemical Ireland is expected to voluntarily adopt the following commitments and principles;

- A formal commitment on behalf of each company to a set of Guiding Principles signed, in the majority of cases, by the Chief Executive Officer
- A series of codes, guidance notes and checklists to assist companies to implement the commitment
- The progressive development of indicators against which improvements in performance can be measured
- Ongoing process of communication on health, safety and environment matters with interested parties inside and outside the industry
- Provision of forums in which companies can share views and exchange experiences on implementation of the commitment
- Adoption of a title and a logo which clearly identify national programmes as being consistent with and part of the concept of Responsible Care
- Consideration of how best to encourage all member companies to commit to and participate in Responsible Care
- Systematic procedures to verify the implementation of the measurable (or practical) elements of Responsible Care by the member companies.

Pharmaceutical Ireland manages Responsible Care at a national level; the European Chemical Industry Council (Cefic) manages Responsible Care at an EU level; and the International Council of Chemical Associations manages Responsible Care at a global level.



## Chemical Distribution Ireland



**Chemical Distribution Ireland (CDI), formerly the Irish Chemical Marketers Association, was established in 1994. CDI is affiliated to IBEC and is a member of FECC, the European Association of Chemical Distributors. CDI is the leading representative body for the chemical distribution Industry in Ireland.**

Membership of CDI demonstrates the member Company's commitment to best practice in chemical distribution and ongoing responsibility in areas of product stewardship, safety, environment and quality. Members of CDI work to provide secure supply chains from producers to users and act as a valuable partner for material sourcing, storage and delivery.

The main aim of CDI is to promote, support and encourage the further development of the multinational and indigenous chemical sector in Ireland. CDI achieves this by building and maintaining excellent relations and a positive profile with Government, public agencies, other representative organisations, international bodies and other interested parties.

### Objectives:

- Promotion of Responsible Care
- Representation of the industry at European and International Level
- Networking and developing relationships within the broader industry network
- Working to secure the longterm future of the chemical distribution industry in Ireland



CDI members follow the Guiding Principles of Responsible Care. Using the assessment tool SQAS Distributor ESAD, CDI members are undergoing assessments of their Responsible Care programmes. These assessments are mandatory for CDI members.

SQAS Distributor ESAD is a document developed jointly by chemical suppliers and distributors for use in one single assessment of distributors. It includes health, safety, environmental and quality aspects. There are also sections which cover the principles of GTDP (Good, Trade and Distribution Practice). Trained assessors conduct assessments.

Associate members, who are service providers to CDI members in the area of warehousing and transport, are required to undergo a relevant SQAS Assessment such as SQAS Transport or SQAS Warehouse.

Details of the SQAS assessments can be found at the website [www.sqas.org](http://www.sqas.org).





## CDI membership



### FULL MEMBERS >>>

Associated Chemicals Ltd.  
Brenntag  
Brockley Group Ltd.  
Carbon Chemicals Group Ltd.  
Charles Tennant & Company (Eire) Ltd.

Goulding Chemicals Ltd.  
Micro-Bio (Ireland) Ltd.  
National Chemical Company Ltd.  
P-K Chemicals Ltd.  
Univar Ireland Ltd.

### ASSOCIATE MEMBERS >>>

C&G Logistics  
Twoway Aramex

#### Contact details for CDI:

**Address:**

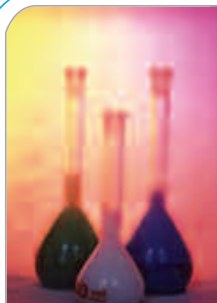
Chemical Distribution Ireland  
Confederation House  
84-86 Lower Baggot Street  
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[www.chemicaldistributionireland.ie](http://www.chemicaldistributionireland.ie)



## Responsible Care Activities in 2011



Each year members of PharmaChemical Ireland seek ways to improve their environmental, health and safety performance. Data submitted in the Responsible Care report is analysed and areas where improvement is needed are identified and programmes put in place to address member needs.

The following are a brief outline of some of the main achievements of Responsible Care in Ireland.

### Communication >>

- **Sharing Best Practice – Quarterly meetings**  
Members of the Responsible Care environment, health & safety group met five times in 2011. The meetings allow members to network and share experiences in all aspects of environment, health & safety matters. Four of the meetings were held on sites and we are very grateful to Bristol Meyers Squibb (Cruiserath), Roche, Genzyme and Pfizer (Ringaskiddy) for hosting meetings. In addition we had one of our process safety sub-group meetings hosted by Alkermes for which we are also very grateful.
- **EHS updates**  
This year we introduced the concept of EHS updates that were circulated throughout the year when a number of issues arose that warranted widespread communication. A total of 20 updates were released this year. It should be noted that these are in addition to the numerous updates on specific issues such as REACH, CLP or IPPC licensing.
- **Responsible Care workshop**  
On the 6th May we held a Responsible Care workshop which was kindly hosted by MSD in Ballydine. This workshop was designed to maximise the use of data collected every year as part of our Responsible Care obligations. It was targeted at those who have to submit data on behalf of their companies and also those people who are looking to get more back from the data they have submitted. Representatives from 17 companies attended.

### Environment >>

- **Environmental Protection Agency (EPA) Technical Forum**  
PharmaChemical Ireland has established an ongoing technical forum with the Irish EPA which meets on a biannual basis. In addition, PCI meet with the EPA on a number of specific technical issues throughout the year. We met with the EPA 9 times in 2011. Personnel from the EPA presented at some of our EHS working group meetings.

### Health & Safety >>

- **Health & Safety Authority (HSA)**  
The HSA has liaised with PCI on inspection priorities for process industry sites. In addition PCI is represented on the Technical and Scientific Advisory Committee (TSAC) of the HSA. In total we met with the HSA 8 times in 2011.
- **Sub-groups**  
In 2011, we facilitated a total of 7 sub-group covering areas as diverse as reclassification of waste, VOC in water, ISO 17025, registered electrical contractors, EPA LEMA project and REACH intermediates guidance. All of these sub-groups operated on an ad-hoc basis and met a number of times depending on the needs of the issue. In addition we facilitate a permanent process safety sub-group.
- **Process Safety Sub-group**  
The PSSG met once in 2011 and we are very grateful to Alkermes who hosted the meeting. In addition PCI continues to circulate process safety alerts. These alerts, posted on the PCI website, allow the sharing of information that will prevent similar incidents in other member companies.



## PharmaChemical Ireland Responsible Care Awards



The 2011 winners were Pfizer Newbridge and BMS Cruiserath. The winners were presented with their awards at the PharmaChemical Ireland AGM on 7th October in Ashford Castle, Cong, Co. Mayo.

### Pfizer Newbridge

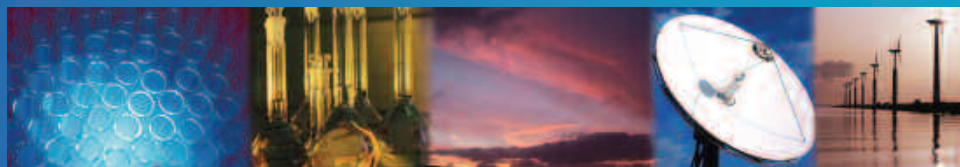
The Pfizer Newbridge project 'YOU have The Power' details the journey of the facility in Newbridge to becoming a greener site. Pfizer Newbridge has developed a comprehensive, holistic, cross-functional Energy Program that seeks to optimize the consumption of energy and other resources at the Newbridge site. Over the past year 'YOU Have The Power' has been a great source of information, knowledge sharing, motivation and above all a platform to recognise the energy results achieved and plans for the future.

Three core elements combine to deliver this strategy. Green Living, Green Working and Green Future are the pillars developed to execute the energy awareness campaign in 2010 and beyond. The balanced nature of the three areas created a holistic and sustainable energy campaign. To date 'YOU Have The Power' has impacted students, teachers, local businesses, associations and been rooted in the wider Newbridge community. 'YOU Have The Power' is a demonstration of Pfizer's ongoing commitment, a visible reduction in energy and passion for change. It illustrates the business value of responsible care, along with outstanding community outreach initiatives and innovative approaches to increase energy efficiency within the organization. Results from Jan-May 2011 compared to the same time last year show a:

- 35.1% reduction in Energy Consumption
- 5.1% reduction in Water Consumption
- 7.8% reduction in Carbon Emissions

This is a sustainable and transferrable strategy. Community engagement is an integral part of the energy strategy. By focusing on the home environment through Green Living, family and friends become a key driver for influencing change. Green Working fosters a more positive approach to energy efficiencies in the workplace. This strategy recognises that Green Future (or Renewable Technologies) is a collective approach to a greener future.

Pfizer Newbridge is striving to become a carbon neutral site and is truly on a journey to a greener site. To this end, ten thousand mixed native trees were planted onsite in 4 hectares of land. It is intended that in time, the thinnings will be used to promote "Green Pfizer" in the local community.



## PharmaChemical Ireland Responsible Care Awards *continued*



### BMS Cruiserath

During 2010 a number of Safety Behaviour-Based walkabouts on the BMS Cruiserath site observed a gap in the adherence to elements of the Lock-Out/Tag-Out (LO/TO) Standard Operating Procedure. Lock-Out/Tag-Out (LO/TO) or lock and tag is a safety procedure which is used in industry and research settings to ensure that dangerous machines are properly shut off and not started up again prior to the completion of maintenance or servicing work. It requires that hazardous power sources be "isolated and rendered inoperative" before any repair procedure is started.

So in a proactive manner it was decided by the site management team that this non-adherence required a focus in order to prevent an incident or injury occurring. In order to understand why the SOP was not always being complied with, the barriers to adherence were examined and it was found that issues with the LO/TO equipment itself was contributing to this SOP non-adherence. In order to deliver the maximum benefit in the shortest time period a Lean Six Sigma team was formed. Using this Kaizen Team, led by one of the Maintenance Kaizen Leaders, it was agreed to focus the aim of this project on a review of the hardware side of our LO/TO procedure. The outcome of the project would therefore be optimisation in the use and effectiveness of the LO/TO equipment. The team had three full-time team members representing Maintenance and Technical Services.

In total, the team came up with 22 different solutions that were deemed to be viable and of real benefit and these have now been implemented. In order to ensure sustainability of the solutions, training has been completed with effected personnel, check sheets developed to monitor progress and, most importantly, the ownership of the sustainability plan has been handed over to the various area owners.

Since the successful implementation of the LO/TO equipment changes, the project has been presented to their sister site in Swords and in addition, the work was also shared with the global BMS EHS community at a global meeting.





## Performance Indicators of the Responsible Care Programme for 2010



The figures reported look at trends over a three-year period (2008-2010) for the member companies as a whole. This year we have again achieved a very high level of participation with 94% of companies submitting data.

The trend in employment number continued downwards with a 10% reduction over the three year period. However, the good news is that production volume increased by 10% over the same period. As the employment number is considered to be a lagging economic indicator, it is hoped that the increase in production will feed through to increased employment in the coming years.

We are pleased to report decreases of 16% in phosphate discharge to waters, and 16% in nitrogen discharge to waters. Hazardous waste reduced by 11.9% and non-hazardous waste by 39%. Water consumption decreased by 5% over the reporting period. All of these reductions were achieved against a backdrop of a 10% increase in production. A number of other parameters including carbon dioxide from energy use and COD to waters showed small increases in line with the increases in production. There were increases in VOC and SOx which were slightly above the level of increase in production. These parameters will be closely monitored by the industry in the coming year when we expect to see a reduction in SOx, one of the few remaining sites using significant quantities of fuel oil converts to natural gas.

There was a significant decrease of 24% in the lost time injury rate over the three year reporting period along the lines of a similar decrease in the previous period.

Within our member companies, Responsible Care is acknowledged as the fundamental non-corporate Environmental, Health and Safety initiative contributing positively to our employees and the communities in which we operate.

We will continue to encourage all our members to reinforce their efforts to achieve the very best in their EHS commitments.

### Economic Factors

#### Employees:

-10%

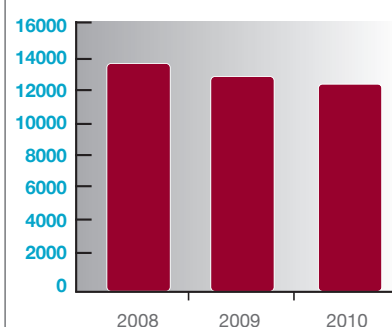
During the three-year period, the numbers employed in the sector decreased by 10%. This is slightly higher than the 7.2% reported in 2010 and reflects the more difficult trading conditions for some of the member companies due to the continued global economic downturn. A number of companies have downsized their operations in response to global reorganisations of their businesses and this has resulted in some decrease in numbers employed in their Irish facilities. A small number of facilities have unfortunately closed during the period. It is hoped that as output is showing strong signs of increasing, the numbers employed in the industry will increase in the coming years.

#### Production:

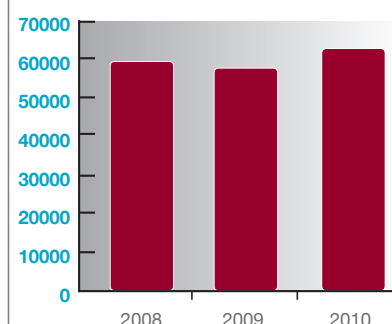
+9.8%

The output from the reporting firms increased by 9.8% over the three year period from 2008 to 2010. We hope that this trend will continue in the coming years as the global economy recovers from one of the deepest recessionary periods in recent history.

Number of employees in company



Production (production output, annual)





## Performance Indicators



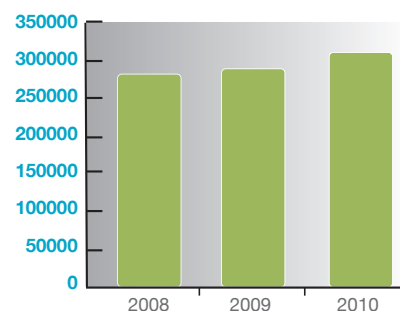
### Air Emissions

**Carbon Dioxide:**  +7.1%

The trend in CO<sub>2</sub> emissions showed an increase of ca. 7.1% over the three year period. This increase is likely to be as a result of increased production over the period. The member companies continue to maintain a strong focus on all aspects of energy management and will carefully monitor the trend in energy parameters in the coming years.

We look forward to improvement in this area as more of our member companies put structured energy management systems in place and move towards the adoption of the standard EN 160001 / ISO 50001 Energy Management Systems in the coming years.

**CO<sub>2</sub> Emissions** (tonnes of CO<sub>2</sub> equivalent)

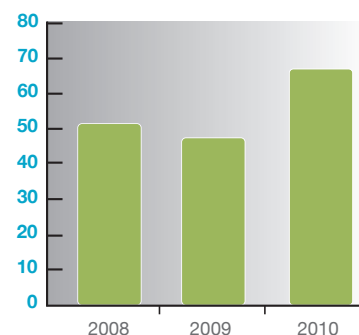


**Volatile Organic Compound:**

 +13.8%

This parameter has shown an increase of 13.8% over the three year period with a substantial increase in the 2009 to 2010 period. Detailed investigation of this trend shows that a small number of sites are contributing to the increase. The industry is concerned at this trend and will focus the efforts of the Safety and Environmental professionals to address the increase in this parameter in the coming years.

**Volatile Organic Compounds/VOC** (tonnes)

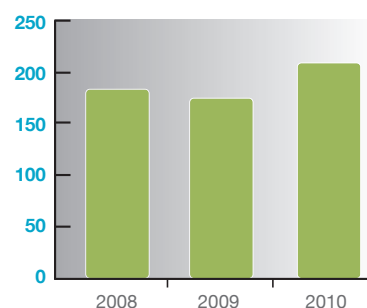


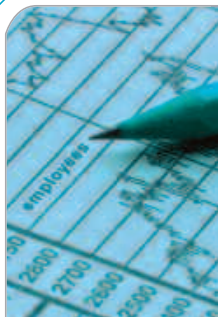
**Sulphur Dioxide:**

 +15.6%

Sulphur Dioxide showed an increase of 15.6% over the three-year period. This is the first increase in this parameter for quite a few years. Further investigation of this trend revealed that it was largely due to increased demand on one of the few sites in the group still using heavy fuel oil. This site has recently completed a conversion to natural gas which will show a dramatic reduction in this parameter in the next report.

**Sulphur dioxides/SO<sub>x</sub>** (tonnes)





## Performance Indicators

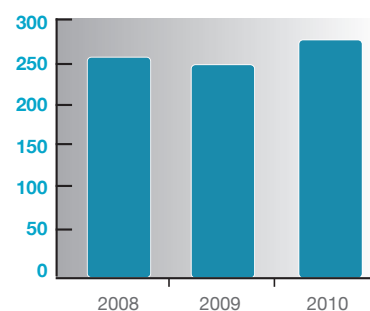


### Water Discharges

**Chemical Oxygen Demand:** +7.3%

This parameter has shown a small increase of ca. 7.3% which is slightly less than the increase in production output over the period. This will be an area of focus for the industry during the coming year and we will continue to work to reduce the impact of our operations on all aspects of our environment.

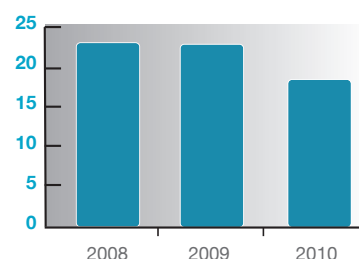
Chemical Oxygen Demand, to waters (O<sub>2</sub> tonnes)



**Phosphate:** -15.7%

The phosphorous emissions from members' sites decreased by ca. 16% over the three-year period. This follows on from a decrease of 8% reported for the previous period. This demonstrates the continuous improvement ethos of our member companies in the important area of waste water management.

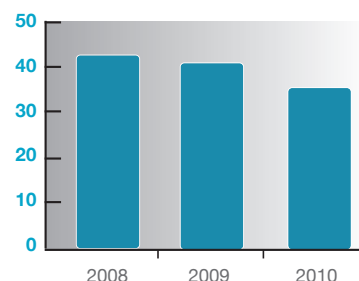
Aquatic Release of Phosphorous Compounds (tonnes of P)

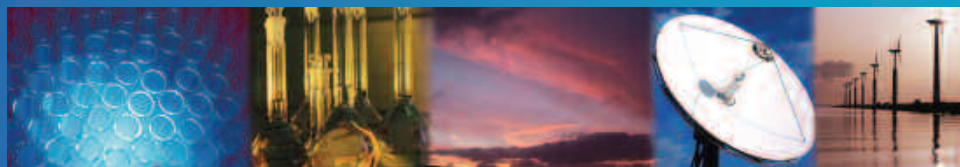


**Nitrogen:** -16.5%

This year is the sixth consecutive year of reductions in aquatic release of nitrogen. A 16.5% reduction in this parameter has been achieved over the three-year period which follows a 20% reduction reported last year. This demonstrates the effectiveness of member companies' wastewater treatment plants in reducing the impact of discharges of nitrogen to waters and hence reducing the potential for nitrification.

Aquatic Release of Nitrogen Compounds (tonnes of N)





## Performance Indicators

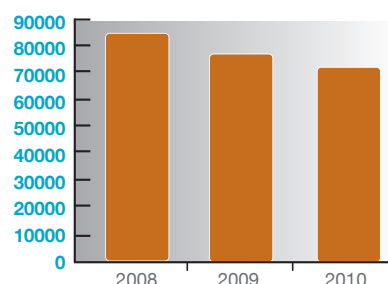


### Waste Disposal

**Hazardous Waste:** -11.9%

The proper disposal of hazardous waste is an important priority of all member companies and is critical to the success of the Responsible Care initiative. The reduction of 11.9% achieved follows on from a 22% decrease reported last year. Our member companies are determined to minimise the generation of hazardous waste in all aspects of operations and thereby continue a high standard of environmental protection.

**Hazardous Waste for Disposal;  
on/off site disposal (tonnes)**



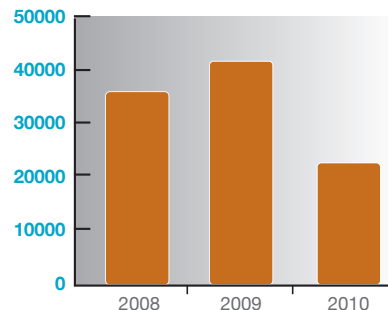
-39.1%

### Non- Hazardous Waste:

We are pleased to report that this parameter shows a significant decrease over the reporting period. The parameter can be impacted by the amount of construction waste generated as a result of capital investment activity and can be somewhat variable year to year. When this is excluded, non-hazardous waste disposal continues its underlying downward trend reflecting the increased levels of recycling of non-hazardous waste in the member companies.

The commitment to Responsible Care means continually striving to improve the levels of reuse and recycling. This will help to conserve scarce resources for future generations. We will continue to play our part in this national effort.

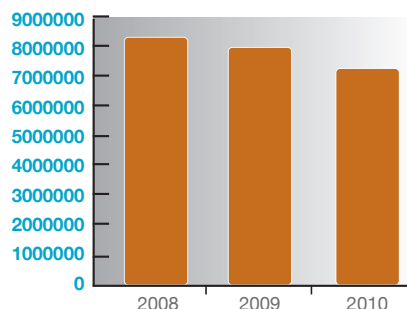
**Non-Hazardous Waste for Disposal;  
(tonnes)**



### Water Consumption: -4.6%

Clean water is rapidly becoming a more scarce resource worldwide as each year passes. We are conscious of the importance of this resource and actively encourage our member companies to minimise its use in their day to day operations. We can report a decrease of 4.6% in water consumption by our member companies over the three year period to 2010. This is an excellent achievement in a period of increased production activity. This shows the importance we attach to conserving our scarce water resources and making the best use of water in our facilities.

**Total water consumption (Cubic metres)**







## Performance Indicators



### Safety

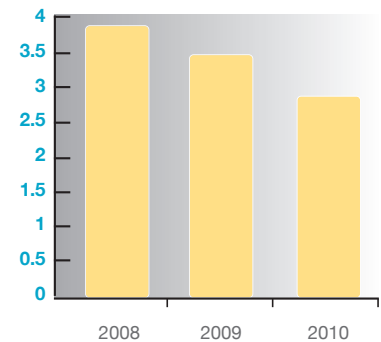
The safety of our employees is of paramount importance to our member companies.

#### Lost Time Injury Rate:

-24%

We are happy to report a substantial reduction of 24% in the lost time injury rate following on from a similar reduction reported last year and show a consistent reduction in this important parameter over the last six years. With over 23 million hours worked in the sector in 2010, the low level of lost time injuries is testament to the continued overall effectiveness of the health and safety management systems in the sector.

Lost Time Injuries Frequency Rate  
per millions hours worked





## Codes of Practice

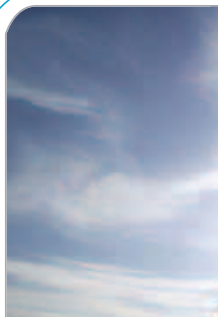


Companies are required to assess their performance against Responsible Care management codes of good practice in environment management, process safety, and energy management and newly introduced last year, Product Stewardship management.

While this procedure is self-assessment, it does require the Company Director or Chief Executive Officer to verify any report at stage 5 or stage 6. The numeric scale used for the various stages has the following meanings:

- |          |  |
|----------|--|
| <b>1</b> | <b>No action</b>   |
| <b>2</b> | <b>Evaluation against the code requirement completed</b> |
| <b>3</b> | <b>Developing an action plan</b>                         |
| <b>4</b> | <b>Implementing the action plan</b>                      |
| <b>5</b> | <b>Code requirement is in place</b>                      |
| <b>6</b> | <b>Annual review of the code requirement</b>             |

This year the report will compare the overall performance of the codes to the last two years of results in order to see more clearly the progress companies are making. A detailed breakdown of how companies are rated in each section of the code will be available as an appendix on the PharmaChemical Ireland website ([www.pharmachemicalireland.com](http://www.pharmachemicalireland.com)). The participation in this aspect of the Responsible Care initiative continues at a high level with over 84% of the companies participating in the Safety, Environment and Energy Codes with 69% contributing to the newer Product Stewardship Code and 82% providing data to the new Security Code which was launched last year.

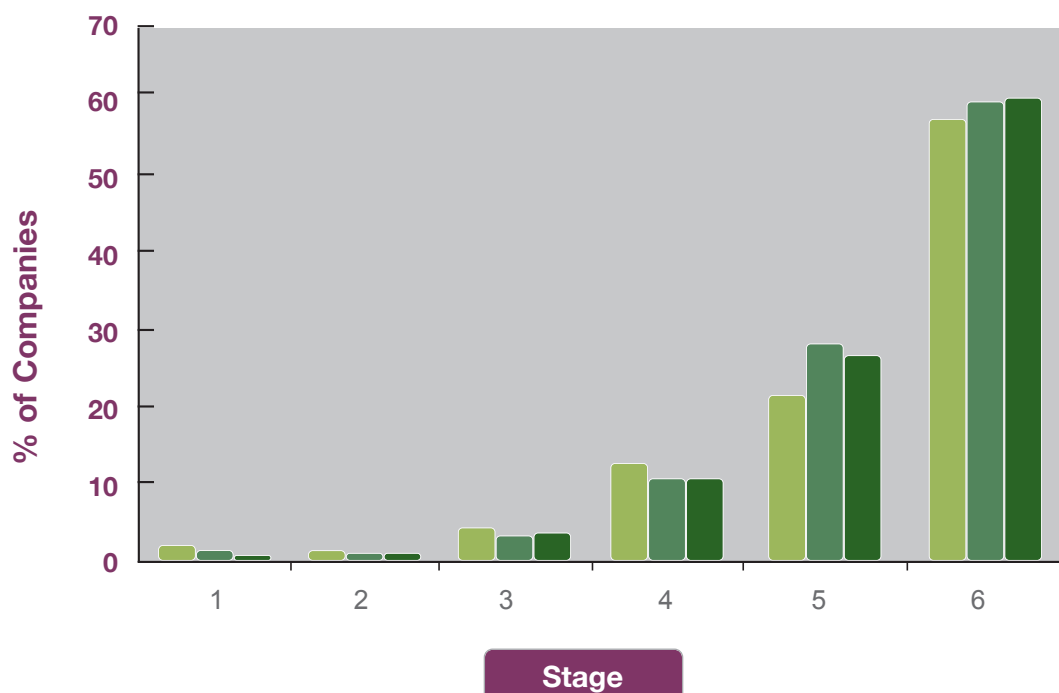


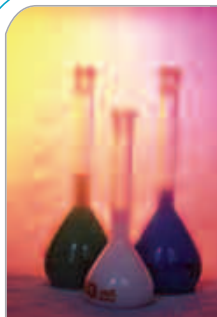
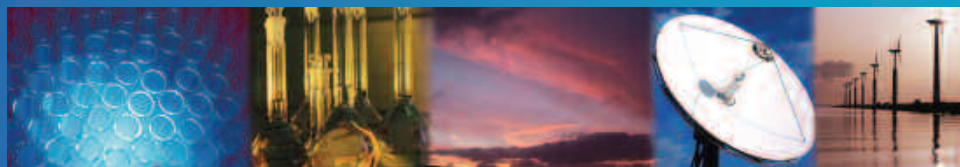
## Environment Code



The progress in implementation of the Environment Code across member companies continues steadily with over 84% of participants achieving Level 5 or greater and 94% of respondents achieving at Level 4 or above. The increase in achievement at level 6 shows a progressive improvement in implementation each year, demonstrating the culture of continuous improvement in environmental performance in accordance with the principles of Responsible Care.

Environment Summary





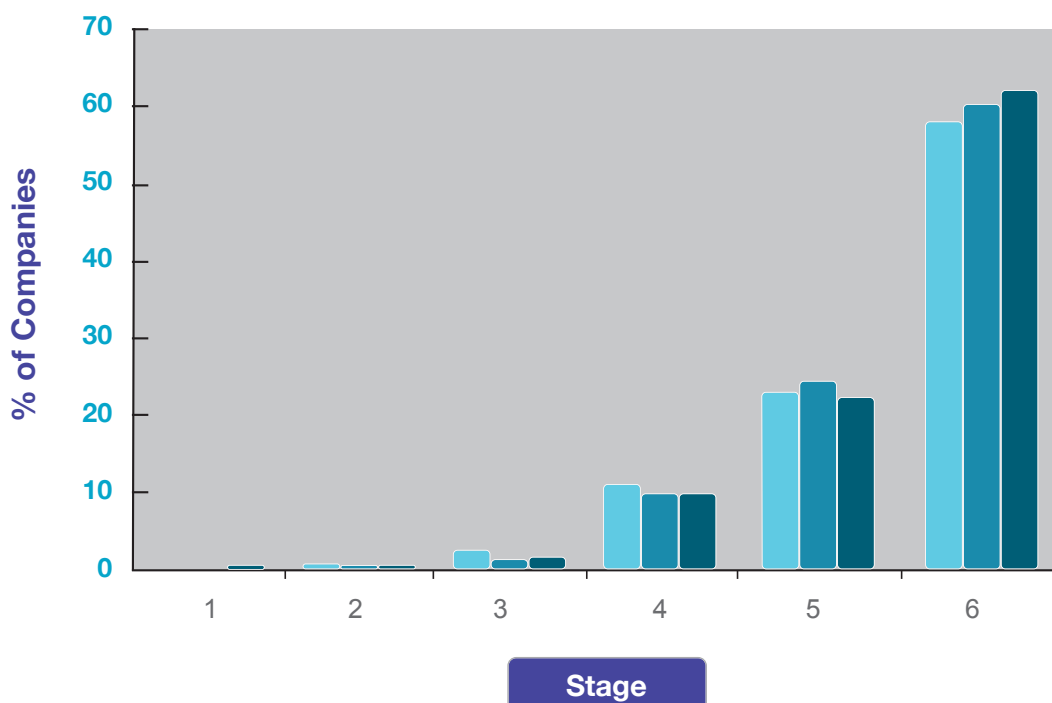
## Health and Safety Code



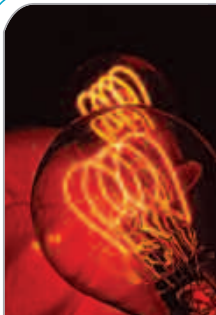
The Health and Safety Code continues to show steady progression over time. To date over 88% of member companies achieve Level 5 or greater and 97% rated at Level 4 or above. The strong focus on safety continues to be reflected in the steady reduction in the overall accident rate in the sector with a further 24% reduction achieved in the last three year period following on from a similar improvement over the previous period.

The health and safety of our employees is of paramount importance to our member companies, as evidenced by the efforts made to continuously improve the Safety performance of our facilities.

**H&S Summary**





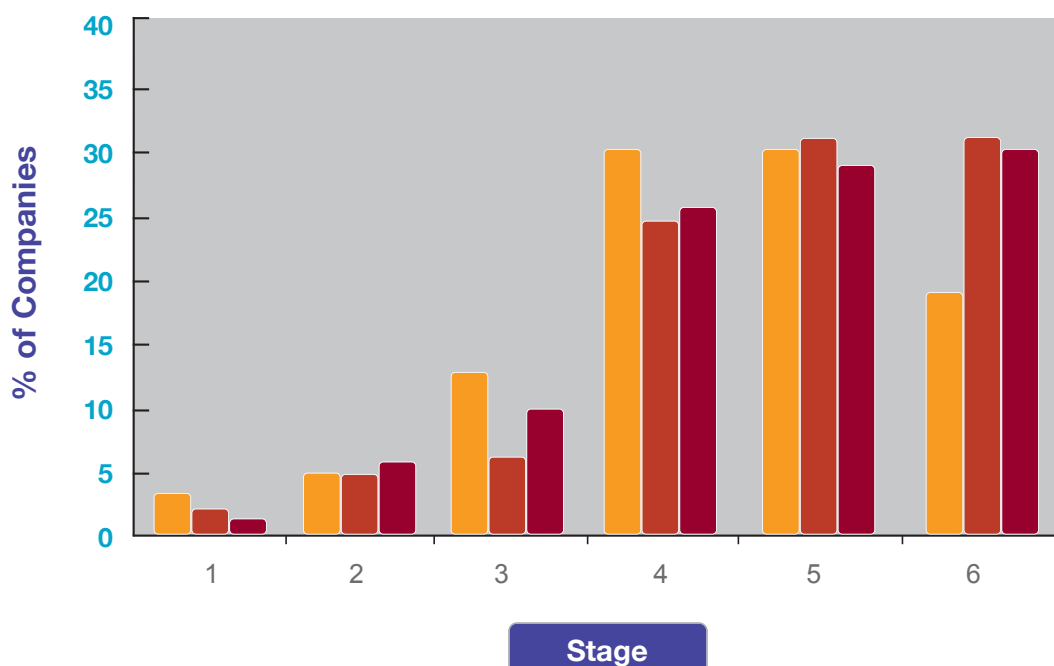


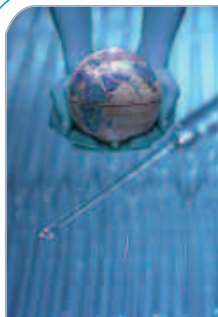
## Energy Code



The returns for the Energy Code this year show that 58% of companies are performing excellently at Levels 5 or 6 with 83% of companies operating at level 4 or higher. The energy code is now reaching maturity, with results similar to the more mature Safety and Environment Codes. We remain committed to reducing our energy consumption to the lowest practicable level thereby conserving these scarce resources for future generations.

Energy Summary



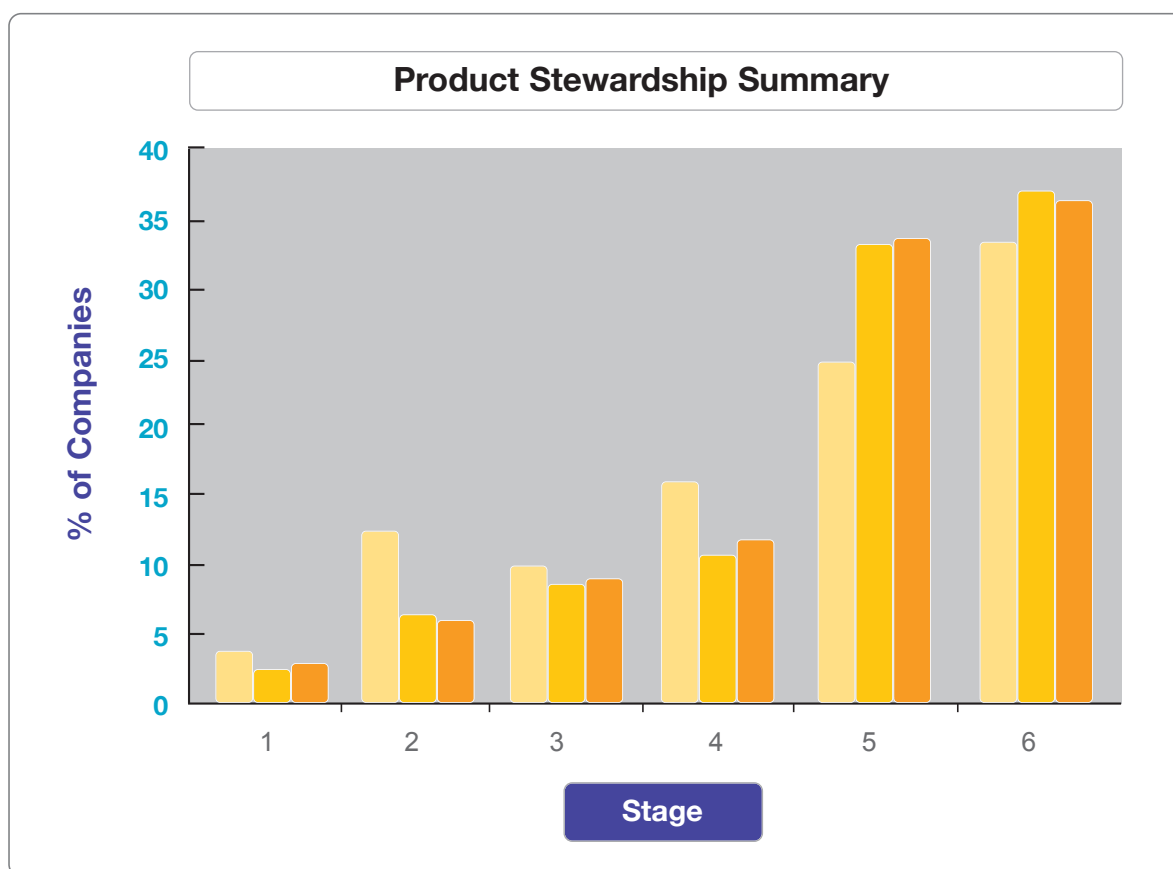


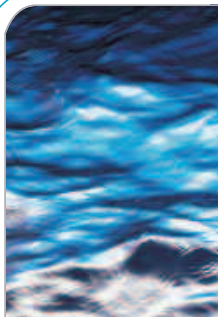
## Product Stewardship Code



Under Responsible Care, the member companies of PharmaChemical Ireland are committed to improving the responsible management of our products throughout their lifecycles – from the input of raw materials to ultimate product end-use and disposal. The goal of product stewardship is to ensure that parties up and down the product supply chain have active management systems to ensure the safe, environmentally sound, and socially responsible handling of the product. The following code is seen as a holistic approach for companies to manage their Product Stewardship requirements and bring together all aspects of the supply chain.

As this is a relatively new code introduced for the first time in 2005, we have seen a steady improvement in the returns over the last six years. We are pleased to report that over 70% of the member companies are rated at Level 5 or Level 6 with over 82% rated above Level 4. In line with the experience of the Energy Code, we expect to see a move to even higher levels as the code further matures over the next few years.





## Security Code



Under Responsible Care, the member companies of PharmaChemical Ireland are committed to ensuring that their facilities, raw materials and products are maintained in a secure environment at all times. The goal of security code pilot is to ensure that member companies have structured security systems and procedures in place to manage this important aspect of their operations.

A pilot of this code was completed in 2010 and we have now adopted the code formally in 2011. We are pleased to report that over 66% of companies are operating at Level 5 or 6, up from 58% last year and 79% operating at Level 4 or above. In line with the experience of following the introduction of other codes, we expect to see a move to higher levels as the code further matures.





## Data Collection



Mr Liam Tolton of Second Sight Technical independently collected, analysed and reviewed the data used in the generation of this report and prepared the initial draft report.

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## Second Sight Technical >>

Second Sight Technical is an engineering consultancy headed up by Mr. Liam Tolton.

Mr. Tolton holds primary degrees in Engineering and Economics with a Masters Degree in Process Safety and Loss Prevention. He has worked in oil refining and bulk pharmaceutical manufacturing as a project engineer, Engineering Section Head and Department Manager with responsibility for engineering, utilities, environment and safety. He is a certified Dangerous Goods Safety Advisor and a six sigma black belt.

## List of companies involved >>

PharmaChemical Ireland gratefully acknowledges the assistance of the following companies for their assistance in compiling this report:





## List of Companies



### LIST OF COMPANIES >>>

- |   |  |  |
|---|--|--|
| • Abbott Cork (formerly Fournier Pharma / Solvay)   | • Gilead Sciences Ltd. Cork                                  | • Pfizer Newbridge                                     |
| • Alkermes (formerly Elan Pharma International Ltd) | • Glaxo Smith Kline Cork                                     | • Pfizer Grangecastle                                  |
| • Allergan Pharmaceuticals Ireland                  | • Helsinn Birex Pharmaceuticals Ltd                          | • Pfizer Cork  |
| • Arran Chemicals                                   | • Henkel Loctite   | • Pfizer Ringaskiddy                                   |
| • Astellas Ireland (Dublin)                         | • Hovione  | • Recordati  |
| • Astellas Ireland (Kerry)                          | • Ipsen Manufacturing Ireland Ltd                            | • Roche Ireland Limited                                |
| • Bristol Myers Squibb Cruiserath                   | • Janssen Pharmaceuticals                                    | • Rottapharm Ireland                                   |
| • Cara Partners & Wallingstown Co Ltd               | • Janssen Biologics (Centecor)                               | • SAFC Arklow Limited                                  |
| • Cognis Ireland Limited                            | • Leo Pharma   | • Servier Irl. Industries Ltd                          |
| • Covidien (formerly Tyco)                          | • Lonza (formerly Arch Chemicals BV)                         | • Stiefel Laboratories (Ireland) Ltd.                  |
| • Clarochem Ireland (formerly Helsinn Chemicals)    | • Merck Sharp & Dohme Irl Ltd                                | • Swords Laboratories                                  |
| • Eli Lilly S A - Irish Branch                      | • MSD Swords (formerly Schering Plough / Organon)            | • Takeda Ireland Bray                                  |
| • FMC International                                 | • MSD Rathdrum (formerly Schering Plough (Avondale) Company) | • Takeda Ireland Grangecastle                          |
| • GE Healthcare, Carrigtwohill, Co. Cork            | • Novartis Ringaskiddy Ltd                                   | • Temmler Ireland Limited                              |
| • Genzyme   | • Pfizer Ireland Pharmaceuticals                             | • Teva Pharmaceuticals Ireland Ltd                     |
|   |  | • UCB Manufacturing Ireland (formerly Schwartz Pharma) |







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