



IPC Enforcement Section,
 Environmental Protection Agency,
 Dublin Regional Inspectorate,
 Richview,
 Clonskeagh Road,
 Dublin 14.

3-04-19

ANNUAL ENVIRONMENTAL REPORT (AER) Calendar Year: 2018

License No.: P0058-02

Location: Kayfoam Woolfson
 Bluebell Industrial Estate,
 Naas Road,
 Dublin 12
 D12 PKR1

NACE Code: 20 1 4

Main Economic Activity: Manufacture
 of other organic basic chemicals

National Grid Reference: O 096 322
 53 329179 -06.353921

Class of Activity: 4(a)(viii) Basic plastic
 materials (polymers, synthetic fibres and
 cellulose-based fibres)

Description of Activity: The company, Kayfoam Woolfson, manufactures approximately 6700 tonnes of flexible polyurethane foam annually for the furniture and bedding markets. A conversion unit shapes the foam to the requirements of our customers. There is also an operation on site for manufacturing thermally bonded polyester wadding. The company accepts waste trimming of foam back from its customers and recycles it into re-constituted chip foam, or sales it for sale to the USA and UK where it is converted into carpet backing.

The activity remained unchanged from 2017, but production levels have marginally increased from the previous year.

Summary of Information

Emissions to Air:

Parameter	Mass Emission (2017)	Mass Emission (2018)	Licensed Mass Emission
Toluene diisocyanate	14.75 kg	13.15 kg	0.15 kg/day

The only emission to the air from the site is toluene diisocyanate. Under our licence terms the emission allowed is up to 0.15 kg per day. Since the 1996 inception of the license the EPA has monitored the stack emissions on several occasions, most recently in March

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www.kaymedworld.com

Registered address: Kayfoam Woolfson, Bluebell Industrial Estate, Naas Road, Dublin 12, Ireland. Registered Number 23530 VAT Number IE9245787C

2015. The most recent independent monitoring by an accredited test-house took place in Jan 2019. All the results and emission levels were compliant with the terms of the license. The Slight decrease in the Mass Emission level from 2017 to 2018 was due to the production mix over the same period.

Emissions to Water/Wastewater:

There are no emissions to water other than surface rainwater and human sewage. Storm water monitoring takes place regularly, with water samples from surface water drains tested in accordance with the terms of our IPC license. This water is rainwater falling on the hardstand surface and roofs of the facility. It is tested for pH and TOC. The range of pH measured is typically between 6.0 and 8.0. TOC levels are typically low, below 15 mg/L on average. Visual inspections of any surface water discharges also takes place.

Residuals Management:

The operation consists of a collection of bulk storage tanks for liquid chemicals, various pumps, a reaction mixer and an array of conveyors to transport the manufactured foam away from the reaction point. The process is one-shot, i.e., there is no intermediate reaction stage; the chemicals go from their initial liquid state to a solid flexible foam within minutes of mixing. The process produces no solid or liquid waste. There are no emissions to ground, surface waters or sewers. No toxic waste is produced or stored on site. Decommissioning this plant would be straightforward and would leave no environmental footprint. Stocks of bulk chemicals could be arranged and run down in such a manner that the entirety of them could be converted to saleable foam. It would be inevitable that in such a situation small quantities of surfactant, pigments and catalysts would remain but any leftover in sealed containers would be accepted back by the suppliers. The quantity that may have to be disposed of by means of an authorised chemical waste treatment operator would in any event be very small, less than 200 kg.

There is a constant and worldwide demand for foam processing equipment such as exists in Kayfoam. Any unsaleable equipment would have a scrap metal value.

There are no hazardous wastes stored on site such as transformers containing PCBs.

An examination of this operation will show that the decommissioning of residuals would not be an issue.

Prevention of Environmental Damage:

The main environmental risks that this plant presents are through accidental fire or chemical spillage. The entire factory, including warehouses, is protected by a pressurised water sprinkling system supplied from a 525,000 litre water storage tank on site. The system is checked and tested at regular intervals. In the event of a fire at the establishment there is no capacity to retain firewater. However, under our licence we have a diverter valve by which all firewater is diverted to the sewers under requirement



from South Dublin County Council.

All bulk chemicals are stored within bunded compounds. All large capacity pumps are also located within these bunds. An underground containment tank of 10,000 litres is installed at the chemical off-loading point to collect any spillage that may occur. Chemical suppliers conduct periodic audits of our off-loading and storage facilities and procedures to ensure the operation is safe.

The company holds public liability insurance in respect of our legal liability to pay compensation to Third Parties in respect of claimant's costs and expenses for any accidental loss or damage. The indemnity limits are 6.5 million euro in respect of any one accident with unlimited liability in any one period of insurance.

The company employs a fulltime Health and Safety officer and maintains a comprehensive Health and Safety Statement covering all aspects of production and material handling. This statement includes the instruction to contact the EPA in the event of an environmental incident. The foam department is credited with ISO 9001; 2008 and the management of chemicals is designated to a limited number of trained personnel who follow strict written standard operating procedures. During non-operational hours, frequent security checks are made on the premises, the security company being instructed to contact relevant personnel in the event of an incident.

The company also operates under the guise of the HSA as it is classified as a Seveso Site Under S.I 74 control of major accident & hazard (COMAH) regulations. Kayfoam's Major Accident Prevention Policy (MAPP) document was developed to set out the policies of Kayfoam Woolfson in respect of Major Accident Prevention (MAP) at their facility at Bluebell. The storage and handling of dangerous substances can give rise to a risk of major accident hazards and Kayfoam has obligations to ensure that there are necessary measures are in place to prevent major accidents occurring and to limit the consequences of any such major accidents for people and the environment under the legislation. The consultancy firm Byrne-O'Cleirigh has carried out a Hazard Identification and Risk Assessment (HAZID) exercise at the site, including Consequence Modelling for Major Accident Scenarios, and an Assessment of Explosion Risks (ATEX) assessment. These identified controls in place to prevent major accidents and additional controls have been implemented as a result of these assessments.

Environmental Management Programme (EMP)/Continuous Improvement:

The company maintains an Environmental Management System (EMS) as part of our IPPC licence. The EMS is reviewed on an annual basis. The management and reporting structure remains unchanged from 2017.

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Environmental Objectives and Targets:

- The objective of eliminating solvent based adhesives was completed this year by the purchase of a new water-based gluing line.
- We hoped to increase resource efficiency through capital expenditure. This involved the introduction of more energy efficient machinery and the purchase of a new recycling plant for chip foam which has come into use in 2016.
- We managed to reduce environmental emissions to the air of TDI in proportion to the level of activity at the site through new product development and additive research & development.
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- Our objectives going into 2019 include
 - Reduction in landfill waste by 10%
 - An increase in energy efficiency from new technology
 - TDI emissions reduction by 5%.

Noise:

The operation produces no discernible noise and no abatement is required.

Resource Usage/Energy Efficiency

The energy requirements are satisfied by natural gas, electricity, and gas oil, with usage detailed below. All fuel oil used is sulphur free. Water used is from public supply with an average of 90 tonnes per annum in the manufacture of foam. It is a necessary component in the production reaction and there is no remaining water after the process.

Consumption	Year 2017	Year 2018
Electricity	1004MW	1115 MW
Natural Gas	2695MW	2762 MW
Gas Oil	215MW	205MW
Total Energy	3914MW	4082 MW

Complaints/Incidents:

There were no Incidents in 2018.

Waste:

Waste, at 241 tonnes, was sent to a recycler for segregation and land filling. This is an 11% Increase from the 2017 figure. The high cost of landfill disposal will always act as an incentive to reduce waste generation. The waste produced is only dry, solid, non-toxic mixed municipal waste. Our obligations under the Waste Management Act are being fulfilled by registration with Repak, which levies industry in proportion to the weight of packaging material put into the domestic market.

The company has switched several of its drum stock purchases of chemicals to one tonne IBC containers. These are collected periodically and returned to the suppliers. Water used in manufacturing produces no waste as it is all used up in the foam manufacturing process. There is no liquid waste produced by the operation other than sewage, which is discharged to the foul drainage system.

All the data and information presented in this report has been checked and certified as being accurate. The quality of the information is assured to meet licence requirements

Eoin O Mahony



General Manager
Kayfoam Woolfson
Bluebell Avenue
Dublin 12

Date: 3/4/2018