






## 2017 Annual Environmental Report

For

**TopChem Pharmaceuticals Limited,  
Ballymote Business Park,  
Carrownanty,  
Ballymote,  
Co. Sligo.**

**License Number: PO828-01**

<u>Name</u>	<u>Title</u>	<u>Signature</u>	<u>Date</u>
Frances King	QA Manager & EHS Officer		09/04/2018
Margaret Garry	Operations Manager		18/04/2018
Dr Donal Coveney	Managing Director		19/04/2018

**Table of Contents:**

<b>Section</b>	<b>Topic</b>	<b>Page Number</b>
<b>1.0</b>	<b>Introduction</b>	3
1.1	Company Details	3
1.2	Activities	3
1.3	Environmental Policy	4
1.4	Environmental Management of the Company / Company Structure	4
<b>2.0</b>	<b>Resource Information</b>	6
2.1	Resource Consumption	6
2.2	Waste	9
2.3	Energy and Water Usage	28
2.4	Environmental Incidents and Complaints	28
<b>3.0</b>	<b>Environmental Management of Activity</b>	28
3.1	Environmental Objectives and Targets 2017	28
3.2	Environmental Management Report	29
3.3	Environmental Management Proposals 2018	30
<b>4.0</b>	<b>Financial Provision</b>	30
<b>5.0</b>	<b>Licence Specific Reports</b>	30
5.1	Pollutant Release Transfer Register (PRTR)	30
5.2	Residual Management Plan	31
5.3	Solvent Management Plan	31
5.4	Environmental Liability Risk Assessment (ELRA)	34
Attachment #1: AER Returns Worksheet		

## 1.0 Introduction

As per condition 11.8 of the TopChem Pharmaceuticals Limited Integrated Pollution Prevention & Control License, License Register Number P0828-01, attached is the Annual Environmental Report for the site covering period January 1<sup>st</sup> 2017 to December 31<sup>st</sup> 2017.

### 1.1 Company Details

TopChem Pharmaceuticals Limited is located in the Ballymote Business Park, Carrownanty, Ballymote, Co Sligo (National Grid Reference - 565818, 815634) where it is operating from a building leased from Ballymote Community Enterprise Limited. On February 20<sup>th</sup> 2008, TopChem Pharmaceuticals was granted an Integrated Pollution Prevention & Control (IPPC) license from the Environmental Protection Agency.

### 1.2 Activities

The IPPC License authorises TopChem Pharmaceuticals Limited to carry out the following activity at the site;

*The use of a chemical or biological process for the production  
Of basic pharmaceutical products.  
NACE Code - 2120  
RBME Risk Category – P-C2*

To date TopChem Pharmaceuticals has been involved in the manufacture of the following products at the facility;

- Malathion
- Benzyl Benzoate
- PGX-17
- Bretylium Tosylate
- Salicylic Acid
- 2,4 Dichlorobenzyl Alcohol
- Thiamine Hydrochloride
- Ethacrynic Acid
- Piribedil
- Tolcapone
- Selenious Acid
- Chromium III Chloride
- Isoniazid
- Chloromethyl Laurate

There was no production in 2017 for Isoniazid, Piribedil, Malathion, PGX-17, Salicylic Acid, 2,4 Dichlorobenzyl Alcohol, Ethacrynic Acid and Chloromethyl Laurate due to no customer demand for these products. There were no additional Products at the facility during 2017.

1.3 Environmental Policy

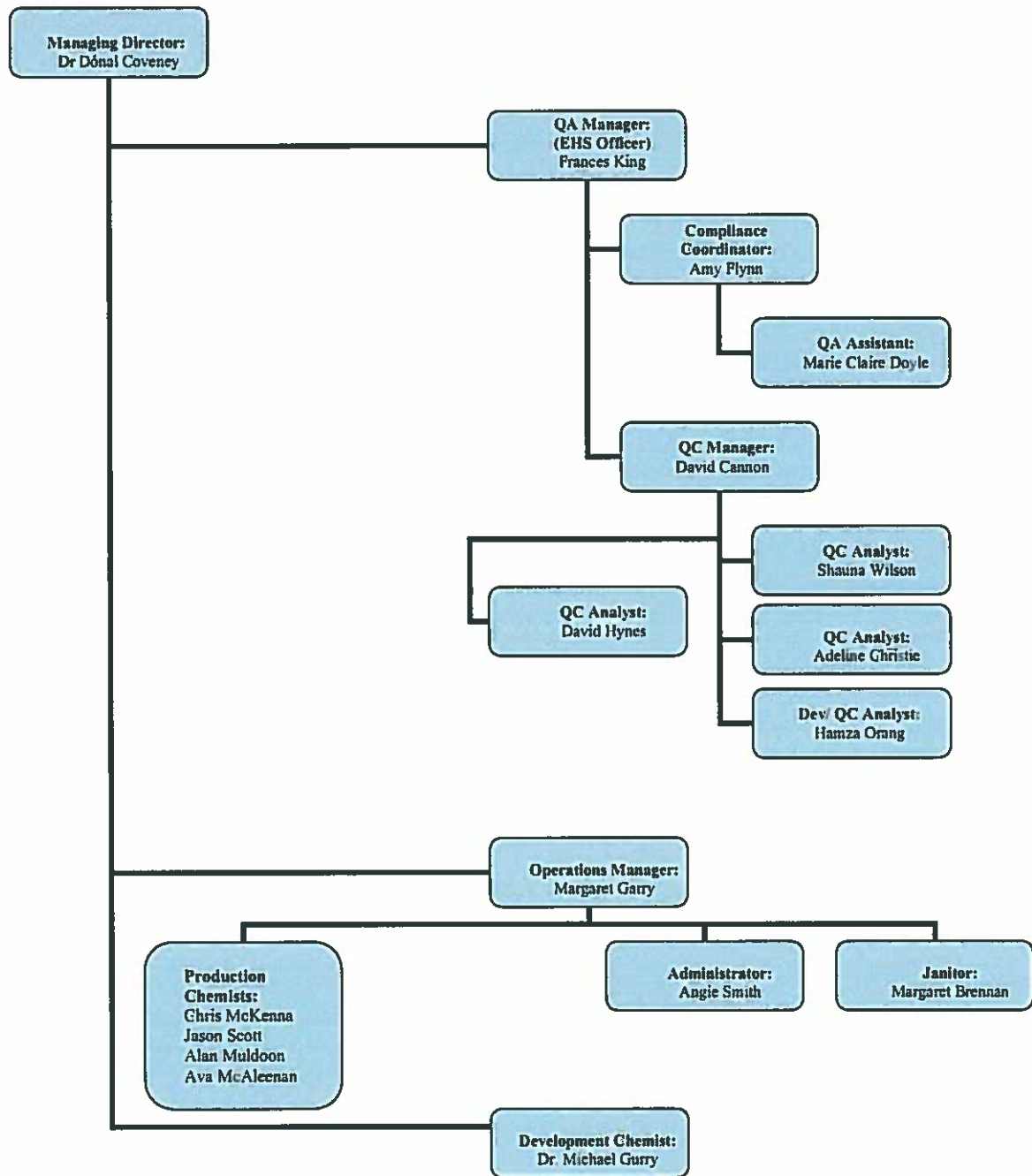
At TopChem Pharmaceuticals we continually assess all the environmental impacts associated with our activities. We aim to improve our management of the environment on a continuous basis. It is essential that all employees, visitors and contractors abide by all aspects of the environmental policy.

1.4 Environmental Management of the Company / Company Structure

Responsibility for the Environmental Management System at TopChem Pharmaceuticals currently falls under the remit of the EHS Officer. Under this present arrangement, the Operations Manager acts as the deputy EHS Officer.

Environmental Management at the facility is co-ordinated through the Health & Safety Incident Report Log, metrics and participation from each of the core functions through Area Representatives. i.e. Production, Quality and Development.

Management and Reporting Structure:



Each department has appointed an EHS representative so that issues identified at a departmental level can be addressed in a timely manner.

There is an EHS Storyboard installed on the first floor overlooking the Reception area. This is updated monthly and displays the following information;

- Metric - Incidents and Accident Reporting,
- Metric - Corrective Actions,
- Metric - Housekeeping Inspections,
- Metric - Hours Lost,
- EHS Goals and Objectives.

There is also an Energy Management Notice Board installed, which is updated monthly and displays the following information;

- Energy Management Policy,
- Green Team members,
- Metric – Domestic Water Usage,
- Metric – Electricity Usage expressed per Employee,
- Awareness information,
- Energy Management / Green Goals and Objectives.

## 2.0 Resource Information

### 2.1 Resource Consumption

This section covers details on Electricity usage and Raw Materials consumed in our Production Laboratory for the review period January 1<sup>st</sup> 2017 to December 31<sup>st</sup> 2017.

#### 2.1.1 Electricity

TopChem Pharmaceuticals is currently leasing a block of 4 units in the Ballymote Business Park. Units 3 & 4 are used for Office Space and Manufacturing and all related support functions for the business. Unit 1 is used for storage purposes only. Unit 2 was renovated in 2016 and a 4<sup>th</sup> Production Room added at this time. Electricity is the only source of energy used at TopChem Pharmaceuticals. All units are serviced by Electric Ireland.

The Electricity Units consumed at the facility for the period under review are as documented in Table 1;

**Table 1:**

Provider	Unit #	Usage 2016 (KWH)	Usage 2017 (KWH)	Comment
Electric Ireland	1	787	667	15% decrease. Unit 1 used for Storage only.
	2	1,693	28,550	1686% increase. Additional Room added to Unit 2 in 2016 and further used for Production Purposes in 2017.
	3 & 4	200,864	172,121	14% decrease. Related to use of additional room in Unit 2

The following changes to electricity usage in 2017;

- Unit 1 used increasingly for Storage meaning less Electrical Supply needed in this Unit.
- Unit 2 with an additional Production Room in use requires additional supply.
- Unit 3 & 4 showing a decrease, attributing to the new Production Room and decrease in Staff from 2016.

#### 2.1.2 Raw Materials

Details of Process related Raw Materials, Intermediates, Products used / generated at the site during 2017 are as follows;

**Table 2:**

Product	Material	2017 Process Usage
Bretylum Tosylate	2- Bromobenzyl Bromide	6 Kg
	Hydrochloric Acid 37%	6 Kg
	Methyl Butyl Ether (MTBE)	17 L
	Purified Water	4 L
	Ethly-p-Toluenesulphonate	8 Kg
	Acetone	124 L
	Ethyl Acetate	166 L
	Sodium Hydroxide	8 Kg
	Dimethylamine Solution	11 L
	Bretylum Tosylate (Product)	7 Kg
Benzyl Benzoate	Benzyl Benzoate (Crude)	110 Kg
	Acetone	110 L
	Benzyl Benzoate (Product)	74 Kg
Thiamine Hydrochloride	Purified Water	705 L
	Thiamine Hydrochloride USP	826 Kg
	Isopropyl Alcohol	5000 L
	Thiamine Hydrochloride (Product)	641 Kg
Chromium III Chloride	Chromium Chloride Hexahydrate	2.5 Kg
	Acetone GPR Grade	8 L
	Ethyl Acetate GPR Grade	18 L
	Chromium III Chloride (Product)	0.5 Kg

**Table 2 - CONTINUED:**

<b>Product</b>	<b>Material</b>	<b>2017 Process Usage</b>
Selenious Acid	Methanol	92 L
	Purified Water	4 Kg
	Nitric Acid	1 µg
	Selenium Dioxide	3 Kg
	Hydrogen Peroxide 35%	2.5 µg
	Selenious Acid (Product)	0.9 Kg
Tolcapone	TOL-4	5 Kg
	Hydrochloric Acid	8 L
	Purified Water	24 L
	Ethyl Acetate	4 L
	Acetic Acid	11 L
	Acetone	2 L
	Aluminium Trichloride	2 L
	Pyridine	5 L
	Ethanol	33 L
	Tolcapone (Product)	3.76 Kg

## 2.2 Waste

There are four types of wastes generated at TopChem Pharmaceuticals which are as follows;

- Domestic Waste.
- Mixed Recyclable Waste.
- Hazardous Solid Waste.
- Hazardous Liquid Waste.

For Domestic & Mixed Recyclable waste, Barna Waste Disposal & Recycling is the approved waste disposal contractor.

For Hazardous waste (Solid & Liquid), SRCL, trading as ECO Safe Systems, are the approved waste disposal contractors.

SRCL, trading as ECO Safe Systems, removed all the Hazardous Waste from the TopChem site.

Table 3 overleaf is a summary of the quantity of waste collected from TopChem Pharmaceuticals during the review period Jan 2017 – Dec 2017.



**Table 3:**

<b>Waste Type</b>	<b>Quantity 2016</b>	<b>Quantity 2017</b>
Domestic Waste	0.47 Tonnes	0.40 Tonnes
Mixed Recyclables	0.58 Tonnes	1.70 Tonnes

The mixed recyclables collected by Barna Waste Disposal & Recycling are delivered to its facility in Carrowbrowne, Galway. Mixed recyclables are fed into their picking station where they are sorted into their individual waste fractions by a combination of machine (called a ballistic separator) and manual picking. Once separated materials are baled, stored and transferred off site to approved brokers for recycling.

Note:

- 1100 Liter Mixed Recyclable Bins is weighed by Barna Waste Disposal & Recycling.
- The 240 Litre Domestic Bins is also weighed by Barna Waste Disposal & Recycling.

The Domestic Waste quantity has decreased from 0.47 Tonnes in 2016 to 0.40 Tonnes in 2017, i.e. 15% decrease. This is most likely due the increase in Mixed Recyclables of almost 200%. An additional Mixed Recyclables Waste Bin was acquired by TCP due to the additional packaging for Raw Materials purchased in 2017.

Hazardous Solid & Liquid Waste Disposal 2017:

Table 4:

Solid Waste: (Total 2406Kg)

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
March 2017	23/03/2017	ECO Safe Systems	SO004438	109	1000Ltr Cardboard Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
March 2017	23/03/2017	ECO Safe Systems	SO004438	136	1000Ltr Cardboard Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
March 2017	23/03/2017	ECO Safe Systems	SO004438	139	Pallet	Pharmaceutically Contaminated Glass	Waste Packaging	15 01 10*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
April 2017	09/05/2017	ECO Safe Systems	SO004658	139	Pallet	Waste Packaging	Waste Packaging	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
April 2017	09/05/2017	ECO Safe Systems	SO004658	165	Pallet	Waste Packaging	Waste Packaging	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
April 2017	09/05/2017	ECO Safe Systems	SO004658	49	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
July 2017	30/08/2017	ECO Safe Systems	SO004818	22	30Ltr Open Top Plastic	Pharmaceutically Contaminated Glass	Waste Packaging	15 01 10*	IE 317855	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
July 2017	30/08/2017	ECO Safe Systems	SO004818	22	30Ltr Open Top Plastic	Pharmaceutically Contaminated Glass	Waste Packaging	15 01 10*	IE 317855	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
July 2017	30/08/2017	ECO Safe Systems	SO004818	22	30Ltr Open Top Plastic	Pharmaceutically Contaminated Glass	Waste Packaging	15 01 10*	IE 317855	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
August 2017	24/08/2017	ECO Safe Systems	SO004935	123	Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
August 2017	24/08/2017	ECO Safe Systems	SO004935	148	Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
August 2017	21/08/2017	ECO Safe Systems	SO004935	117	Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
August 2017	24/08/2017	ECO Safe Systems	SO004935	50	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
August 2017	24/08/2017	ECO Safe Systems	SO004935	27	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
October 2017	25/10/2017	ECO Safe Systems	SO005104	119	Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
October 2017	25/10/2017	ECO Safe Systems	SO005104	110	Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
October 2017	25/10/2017	ECO Safe Systems	SO005104	115	Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
October 2017	09/11/2017	ECO Safe Systems	SO005215	87	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
October 2017	09/11/2017	ECO Safe Systems	SO005215	91	Pallet	Waste Packaging – Empty Plastic Drums	Waste Packaging	15 01 10*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
October 2017	09/11/2017	ECO Safe Systems	SO005215	106	Pallet	Waste Packaging – Empty Steel Drums	Waste Packaging	15 01 10*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
October 2017	09/11/2017	ECO Safe Systems	SO005215	78	Pallet	Waste Packaging – Empty Fibre Kegs	Waste Packaging	15 01 10*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
December 2017	18/01/2018	ECO Safe Systems	SO005391	100	Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 318765	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
December 2017	18/01/2018	ECO Safe Systems	SO005391	120	Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 318765	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
December 2017	18/01/2018	ECO Safe Systems	SO005391	136	Box	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 318765	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
December 2017	19/01/2018	ECO Safe Systems	SO005391	44	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 318765	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgium. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
December 2017	06/02/2018	ECO Safe Systems	SO005391	11	Box	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 318189	AGR – RZR Herten, Im Emscherbruch 11, 45699 Herten, Germany License E56252039	Secondary Fuel
December 2017	06/02/2018	ECO Safe Systems	SO005391	11	Box	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 318189	AGR – RZR Herten, Im Emscherbruch 11, 45699 Herten, Germany License E56252039	Secondary Fuel
December 2017	06/02/2018	ECO Safe Systems	SO005391	10	Box	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 318189	AGR – RZR Herten, Im Emscherbruch 11, 45699 Herten, Germany License E56252039	Secondary Fuel

**Table 5:**

Liquid Waste: (Total 12793 Kg)

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
March 2017	09/06/2017	ECO Safe Systems	SO004438	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
March 2017	09/06/2017	ECO Safe Systems	SO004438	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
March 2017	09/06/2017	ECO Safe Systems	SO004438	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
March 2017	09/06/2017	ECO Safe Systems	SO004438	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
March 2017	09/06/2017	ECO Safe Systems	SO004438	202	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
March 2017	09/06/2017	ECO Safe Systems	SO004438	202	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
March 2017	09/06/2017	ECO Safe Systems	SO004438	201	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
March 2017	24/05/2017	ECO Safe Systems	SO004438	228	210	Basic Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
March 2017	24/05/2017	ECO Safe Systems	SO004438	208	210	Basic Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
April 2017	22/05/2017	ECO Safe Systems	SO004658	193	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
April 2017	22/05/2017	ECO Safe Systems	SO004658	193	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
April 2017	22/05/2017	ECO Safe Systems	SO004658	193	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
April 2017	22/05/2017	ECO Safe Systems	SO004658	193	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
April 2017	22/05/2017	ECO Safe Systems	SO004658	193	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
April 2017	22/05/2017	ECO Safe Systems	SO004658	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel



Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
April 2017	22/05/2017	ECO Safe Systems	SO004658	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
April 2017	22/05/2017	ECO Safe Systems	SO004658	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
April 2017	22/05/2017	ECO Safe Systems	SO004658	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
April 2017	09/05/2017	ECO Safe Systems	SO004658	195	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
April 2017	09/05/2017	ECO Safe Systems	SO004658	190	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
July 2017	07/09/2017	ECO Safe Systems	SO004818	199	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
July 2017	07/09/2017	ECO Safe Systems	SO004818	199	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
July 2017	07/09/2017	ECO Safe Systems	SO004818	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
July 2017	07/09/2017	ECO Safe Systems	SO004818	199	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
July 2017	07/09/2017	ECO Safe Systems	SO004818	208	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
July 2017	07/09/2017	ECO Safe Systems	SO004818	208	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
July 2017	07/09/2017	ECO Safe Systems	SO004818	208	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
July 2017	01/12/2017	ECO Safe Systems	SO004818	216	210	Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
July 2017	01/12/2017	ECO Safe Systems	SO004818	224	210	Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	219	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
October 2017	11/12/2017	ECO Safe Systems	SO005104	219	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	219	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	219	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	197	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
October 2017	11/12/2017	ECO Safe Systems	SO005104	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	219	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	201	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	201	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
October 2017	11/12/2017	ECO Safe Systems	SO005104	201	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	222	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	223	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
October 2017	11/12/2017	ECO Safe Systems	SO005104	222	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
October 2017	01/12/2017	ECO Safe Systems	SO005104	220	210	Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
October 2017	01/12/2017	ECO Safe Systems	SO005104	221	210	Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
October 2017	01/12/2017	ECO Safe Systems	SO005104	223	210	Liquid Waste	Aqueous Waste	16 05 07*	IE 318201	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
October 2017	03/11/2017	ECO Safe Systems	SO005104	194	210	Liquid Waste	Chlorinated Waste	07 01 03*	IE 318772	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
October 2017	03/11/2017	ECO Safe Systems	SO005104	194	210	Liquid Waste	Chlorinated Waste	07 01 03*	IE 318772	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
October 2017	03/11/2017	ECO Safe Systems	SO005104	194	210	Liquid Waste	Chlorinated Waste	07 01 03*	IE 318772	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
October 2017	03/11/2017	ECO Safe Systems	SO005104	195	210	Liquid Waste	Chlorinated Waste	07 01 03*	IE 318772	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
December 2017	12/01/2018	ECO Safe Systems	SO005391	203	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
December 2017	12/01/2018	ECO Safe Systems	SO005391	203	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
December 2017	12/01/2018	ECO Safe Systems	SO005391	203	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel



Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
December 2017	12/01/2018	ECO Safe Systems	SO005391	203	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
December 2017	12/01/2018	ECO Safe Systems	SO005391	205	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
December 2017	12/01/2018	ECO Safe Systems	SO005391	210	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
December 2017	12/01/2018	ECO Safe Systems	SO005391	210	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 318506	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
December 2017	15/01/2018	ECO Safe Systems	SO005391	229	210	Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
December 2017	15/01/2018	ECO Safe Systems	SO005391	229	210	Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
December 2017	15/01/2018	ECO Safe Systems	SO005391	229	210	Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 318202	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Hazardous Waste Disposal Comparison:

**Table 6:**

<b>Waste Stream</b>	<b>2016 Qty</b>	<b>2017 Qty</b>	<b>Variance</b>	<b>Comment</b>
<b>Solid Waste</b>	2392Kg	2406 Kg	No major change	No Major Change
<b>Contaminated Glassware</b>	175 Kg	237 Kg	+ 26%	Increase of 26%. Related to larger output in 2017.
<b>Contaminated Steel &amp; Plastic Drums</b>	421Kg	752 Kg	+ 137%	A reflection of the change of Raw Material Packaging in 2017
<b>Non Chlorinated Waste</b>	10137Kg	9196 Kg	- 10%	A reflection of the types of Production Processes in 2017
<b>Chlorinated Waste</b>	231Kg	777 Kg	+ 300%	An increase of over 300% related to Production Process type in 2017.
<b>Basic Aqueous Waste</b>	0Kg	223 Kg	Returned as a Waste Stream	A reflection of the types of Production Processes in 2017
<b>Sodium Hydroxide</b>	4889Kg	2389 Kg	- 50%	Over 50% decrease related to return of Basic Aqueous Waste and a reflection of the type of Production Processes
<b>Hydrochloric Acid</b>	0Kg	0 Kg	N/A	No change Year on Year
<b>Mercury Waste</b>	0 Kg	0 Kg	N/A	No change Year on Year.
<b>Acidic Waste</b>	178 Kg	0 Kg	N/A	No Acidic waste removed in 2017. A reflection of the type of processes.

### 2.3 Energy & Water Usage

Electricity is the only source of energy used in TopChem Pharmaceuticals.

Refer to section 2.1 for consumption details for the period under review.

As regards Water Usage at the site, any water required in the Production Process is purchased as a raw material. All remaining water requirements at the facility are for domestic purposes only, i.e. Toilets, Kitchen. Water is also used in the Production Laboratory for equipment cooling but this is non-process contacting.

During the period under review TopChem Pharmaceuticals purchased 7200L of Purified Water from Ultra-Pure Laboratories, Foxford, Co Mayo for use in the Production Process.

### 2.4 Environmental Incidents & Complaints

During the review period January 1<sup>st</sup> 2017 to December 31<sup>st</sup> 2017, no environmental complaints were received by TopChem Pharmaceuticals Limited.

There were no incidents at the TopChem Pharmaceuticals site which required reporting to the Environmental Protection Agency.

There were no Environmental incidents reported within TopChem Pharmaceuticals during the period Jan 1<sup>st</sup> 2017 – Dec 31<sup>st</sup> 2017.

## 3.0 Environmental Management of Activity

### 3.1 Environmental Objectives & Targets

Table 7 below is an update on each of the Objectives agreed for the period Jan 1<sup>st</sup> 2016 – Dec 31<sup>st</sup> 2017.

**Table 7:**

<b>Objective</b>	<b>Status</b>
Install system to collect rain water for servicing Toilets	Not completed. On the list of tasks to be completed in 2018.
Review Lighting across the facility with a view to reducing costs	Ongoing. All replacement fittings are LED e.g., Staircase, Exits and Production Areas.
Assess the viability and benefit of introduction of a “bike to work scheme”	Evaluated. At the moment there are no individuals interested in the Scheme but it will remain in place for 2018.

### 3.2 Environmental Management Report

The key environmental objective for the company in 2017 was to continue to track all conditions in the company's IPPC License (P0828-01) and ensure that the high level of environmental compliance achieved in previous years was maintained.

With this in mind the following is an overview of the environmental accomplishments for the facility during 2017,

- The company received no environmental complaints during the Year.
- All mobile bunds used at TopChem Pharmaceuticals were inspected on a regular basis and all were found to be satisfactory.
- The bund in the Chemical Store was certified on the 18/11/2015 by Chemstore, Clondrinagh Industrial Estate, Ennis Road, Limerick. The water used in the certification process was collected by Thornton's Tanker Services, Unit 53B, Parkwest Business Park, Dublin 10 and sent for treatment.
- An Environmental Noise Survey was completed by KD Environmental, 1 Swiftbrook Glen, Virginia, Co. Cavan, ref Report No 2015/01/01 on 15 December 2014. The noise monitoring was undertaken to verify compliance or otherwise with the Noise Emission Limits as in accordance with the guidelines as set out in guidance note for noise. It was observed that the specific noise level from the facility at all measurement locations was significantly below the relevant limits for day, evening and night time, hence no non-conformances were noted. No major changes were made to Processes since this Test and no new pieces of Equipment were introduced which may impact the noise levels at the facility.
- The company's EHS Goals & Objectives and associated key performance indicators were updated as required and results posted on a dedicated Environmental Health & Safety notice board.
- On site environmental communications were maintained with employees through EHS Representatives.
- The company continued to use approved waste disposal contractors for disposal of hazardous, domestic and recyclable waste streams generated on site.
- The company continued to facilitate EHS training on site in areas such as basic chemical awareness, use of spill kits, manual handling and fire safety training.
- Monthly Housekeeping Inspections were conducted on site.

Overall, the company continued to display high levels of control & employee awareness on environmental health and safety matters during 2017.

### 3.3 Environmental Management Proposals for 2018

**Table 8:**

<b>Objective</b>	<b>Responsibility</b>	<b>How objective will be achieved</b>	<b>Timeframe</b>
Install system to collect rain water for servicing Toilets	EHS Officer	Identify Service Contractor and implement accordingly	Q1- Q4 2018
Review Lighting across the facility with a view to reducing costs	EHS Officer	Reduce the # of bulbs per fitting and continue LED replacement	Q1 – Q4 2018
Assess the viability and benefit of introduction of a “bike to work scheme”	QA	Keep Process in place for future employee interest.	Q1 – Q4 2018

### 4.0 Financial Provision

TCP Ltd make allowances for financial provision as required under Condition No. 12 of licence no. P0828-01. Details of same can be referenced in the ELRA Report submitted to the Agency.

### 5.0 Licence Specific Reports

#### 5.1 PRTR

Attached are the following AER / PRTR files which were submitted to the Agency in April 2017.

- Facility ID and Activities sheet
- Releases to Air – nothing reported given TCP has no emissions to Air other than minor fugitive emissions.
- Releases to Water – Nothing reported given TCP has no emissions to Water.
- Releases to Waste Water or Sewer – Nothing recorded given TCP has no emissions to sewer other than wastes from Toilet and kitchen facilities and purified water from heating and cooling baths which are non-product contacting.
- Releases to Land – Nothing reported given TCP has no emissions to Land.
- Treatment of Transfers of Waste

## 5.2 Residual Management Plan

Details can be referenced in the Residual Management Plan submitted to the Agency in April 2018.

## 5.3 Solvent Management Plan

As per condition 6.11.1, TCP must report on the use of solvents per each calendar Year as part of its AER.

As advised in the Solvent Management Plan submitted to the Agency in April 2018, due to the scale of the operation at TopChem Pharmaceuticals, only small volumes of solvents are used, hence there is no requirement for fugitive emissions monitoring or a solvent reduction plan.

The procurement, disposition and disposal of solvents are monitored on an on-going basis under the auspices of our internal quality control and environmental health and safety systems.

The Table overleaf summarises Solvents consumed at TCP for the period January 1<sup>st</sup> 2017 – December 31<sup>st</sup> 2017.

Solvents & Water Usage in litres at TCP from January 1<sup>st</sup> 2017 to December 31<sup>st</sup> 2017

Table 9:

Month	Acetone	Methanol	MeCN	EtoAC	Hexane	Heptane	THF	DCM	MTBE	EtOH	Toluene	IPA	Water
Stock carried over 2017 (L)	1000	500	0	0	5	1000	6.5	15.5	50	56	0	780	1760
<b>Solvents ordered 2017 in Litres (L)</b>													
Jan-17													
Feb-17									50				
Mar-17	350	300		176					350				2400
Apr-17												760	
May-17	300									75			
Jun-17													
Jul-17	100			222.5							7.5	1560	
Aug-17	300			94						75			2400
Sep-17		200								88			
Oct-17	25									102.5			2400
Nov-17	300												
Dec-17													
<b>Total Ordered (L)</b>	<b>1375</b>	<b>500</b>	<b>0</b>	<b>492.5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>400</b>	<b>340.5</b>	<b>7.5</b>	<b>2320</b>	<b>7200</b>
<b>Total In-house (L)</b>	<b>4375</b>	<b>1000</b>	<b>0</b>	<b>492.5</b>	<b>5</b>	<b>1000</b>	<b>6.5</b>	<b>15.5</b>	<b>450</b>	<b>396.5</b>	<b>7.5</b>	<b>3100</b>	<b>8960</b>
<b>Remaining Stocks End 2017 (L)</b>	<b>2850</b>	<b>600</b>	<b>0</b>	<b>278</b>	<b>5</b>	<b>1000</b>	<b>6.5</b>	<b>15.5</b>	<b>228</b>	<b>162.5</b>	<b>5.4</b>	<b>58</b>	<b>740</b>
<b>Total Usage (L)</b>	<b>1525</b>	<b>400</b>	<b>0</b>	<b>214.5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>222</b>	<b>234</b>	<b>2.1</b>	<b>3042</b>	<b>8220</b>

\*Additional Material Received from Sister Company TCL.

MeCN	=	Acetonitrile	IPA	=	Isopropyl Alcohol	DCM	=	Dichloromethane
EtoAC	=	Ethyl Acetate	EtOH	=	Ethanol			
THF	=	Tetrahydrofuran	MTBE	=	Methyl- tert-Butyl- Ether			



Table 10 below provides an overview of the total solvents procured by TCP during the review period January 1<sup>st</sup> 2017 – December 31<sup>st</sup> 2017.

It also illustrates the opening and closing balances on site for 2017 together with new waste produced, shipped and a volume balancing result.

**Table 10:**

Item	Unit	Quantity
<b>Solvent Usage</b>	Litres	<b>15729</b>
<b>Opening Solvent Waste Balance Jan 2016</b>		1246
Non Chlorinated solvent waste -		600
Chlorinated solvent Waste -	Litres	200
Basic Aqueous –		200
Acidic –		246
Mercury -		0
<b>Net Solvent Waste Recorded Jan 2017 – Dec 2017</b>		12419
Non Chlorinated solvent waste -		9050
Chlorinated solvent Waste -	Litres	777
Basic Aqueous –		200
Sodium Hydroxide		2192
Acidic –		200
Mercury -		0
<b>Closing Solvent Waste Balance Dec 2017</b>		612
Non Chlorinated solvent waste -		191
Chlorinated solvent Waste -	Litres	62
Basic Aqueous –		200
Acidic –		159
Mercury -		0
<b>Solvent Waste shipped Jan 2016 – Dec 2016</b>		<b>12585</b>
Non Chlorinated solvent waste -		9196
Chlorinated solvent Waste -		777
Basic Aqueous –	Kg	223
NaOH		2389
HCl		0
Acidic –		0
Mercury -		0
<b>Solvent Volume Balancing Result (Solvent Usage V's Solvent Waste Recorded)</b>	%	<b>120%</b>

In summary, the volume of waste solvent produced does not meet the volume of solvent purchased. The Variation of 20% could be accounted for by use of water to rinse vessels at the end of the process and for Cooling. A total of 8220 Litres of Purified Water was consumed during the Production Campaigns in the PL Department. Some of this 'solvent' will not go through the Waste Process. Purified Water is also used in Water Baths and for cooling of Product and Equipment without contamination. This water is not salvaged or reused. As such some of this water cannot be attributable. This is the 20% difference.

5.4 ELRA:

The ELRA Report was updated and submitted to the Agency in April 2018. During 2017, the following changes, as previously advised to the Agency, were implemented on site;

- No Changes.



Environmental Protection Agency

[ PRTR# : P0828 | Facility Name : TopChem Pharmaceuticals Limited | Filename : p0828\_2017.xls | Return Year : 2017 ]

9/4/2018 12:39

[Guidance to completing the PRTR workbook](#)

# PRTR Returns Workbook

Version 1.1.18

<b>REFERENCE YEAR</b>	2017
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## 1. FACILITY IDENTIFICATION

Parent Company Name	TopChem Pharmaceuticals Limited
Facility Name	TopChem Pharmaceuticals Limited
PRTR Identification Number	P0828
Licence Number	P0828-01

### Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Ballymote Business Park
Address 2	Carrownanty
Address 3	Ballymote
Address 4	
	Sligo
Country	Ireland
Coordinates of Location	-8.52188 54.0885
River Basin District	IEWE
NACE Code	2120
Main Economic Activity	Manufacture of pharmaceutical preparations
AER Returns Contact Name	Frances King
AER Returns Contact Email Address	frances@topchempharma.com
AER Returns Contact Position	QA Manager & EHS Officer
AER Returns Contact Telephone Number	071 9189685
AER Returns Contact Mobile Phone Number	0868738675
AER Returns Contact Fax Number	
Production Volume	727.0
Production Volume Units	Kg
Number of Installations	1
Number of Operating Hours In Year	6000
Number of Employees	17
User Feedback/Comments	Waste Levels changes year on year due to variation in Customer and Product Orders. In addition Staff numbers in such a small company will have a major impact on Domestic Waste and Energy Usage.
Web Address	www.topchempharma.com

## 2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
4(e)	Installations using a chemical or biological process for the production on an industrial scale of basic pharmaceutical products

## 3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption?	No
If applicable which activity class applies (as per Schedule 2 of the regulations)?	Not Applicable
Is the reduction scheme compliance route being used?	Not Applicable

## 4. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities)?	No
---	----

This question is only applicable if you are an IPPC or Quarry site

**SECTION A : SECTION SPECIFIC PM10 POLLUTANTS**

**RELEASES TO AIR**

Please enter all quantities in this section in KG

No. Annex I	POLLUTANT Name	M/C/E Method Code	Method Used [Organization or Description]	Emission Point 1		QUANTITY	
				I (Total) KG/Year	A (Actual) KG/Year	F (Fugitive) KG/Year	R (Total) KG/Year
				0.0	0.0	0.0	0.0

\* Based on use by sub-reporting on the Product Form (Column B) from data for release to air

**SECTION B : REMAINING PM10 POLLUTANTS**

**RELEASES TO AIR**

Please enter all quantities in this section in KG

No. Annex I	POLLUTANT Name	M/C/E Method Code	Method Used [Organization or Description]	Emission Point 1		QUANTITY	
				I (Total) KG/Year	A (Actual) KG/Year	F (Fugitive) KG/Year	R (Total) KG/Year
				0.0	0.0	0.0	0.0

\* Based on use by sub-reporting on the Product Form (Column B) from data for release to air

**SECTION C : REMAINING POLLUTANT EMISSIONS AS REPORTED BY YOUR LICENSEE**

**RELEASES TO AIR**

Please enter all quantities in this section in KG

Pollutant No.	POLLUTANT Name	M/C/E Method Code	Method Used [Organization or Description]	Emission Point 1		QUANTITY	
				I (Total) KG/Year	A (Actual) KG/Year	F (Fugitive) KG/Year	R (Total) KG/Year
				0.0	0.0	0.0	0.0

\* Based on use by sub-reporting on the Product Form (Column B) from data for release to air

**Additional Data Requested from Landfill operators**

For the purpose of the National Inventory of Greenhouse Gases, landfill operators are requested to provide additional information on the amount of methane generated from their operations in compliance with the Kyoto Protocol. Operators should only report data that address the methane generation by the amendment under Treaty only the Section A. Under separate PM10 pollution data. Please complete the table below.

**Landfill:**

Please enter summary data on the quantities of methane stored and / or utilized

Total estimated methane generation (as per the model)	M/C/E Method Code	Method Used Designation or Definition	Factory Total Capacity m3 per hour	Methane stored (as reported in Section A above)
311,000,000			N/A	0.0 (Total Flaring Capacity)
				0.0 (Total Utilising Capacity)
				N/A

**4.2 RELEASES TO WATERS**

[Link to previous years emissions data](#)

Facility: P0828 Reg No: 10001 TopChem Pharmaceuticals Limited (Facility: P0828\_2017.xls) (Return Year: 2017)

Sheet: 10/17

**SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS**

**RELEASES TO WATERS**

*Data on ambient monitoring of stormwater, water or groundwater conducted at end of year licence requirements, should NOT be submitted under AER / PRTR reporting as this only*

Please enter all quantities in this section in KGs

No. Against It	POLLUTANT	Name	Method Used		Emission Point 1	T (Total) KG/Year	QUANTITY	
			M/C/E	Method Code			A (Accidental) KG/Year	F (Fugitive) KG/Year
				Description or Description		0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

**SECTION B : REMAINING PRTR POLLUTANTS**

**RELEASES TO WATERS**

Please enter all quantities in this section in KGs

No. Against It	POLLUTANT	Name	Method Used		Emission Point 1	T (Total) KG/Year	QUANTITY	
			M/C/E	Method Code			A (Accidental) KG/Year	F (Fugitive) KG/Year
				Description or Description		0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

**SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)**

**RELEASES TO WATERS**

Please enter all quantities in this section in KGs

Pollutant No.	POLLUTANT	Name	Method Used		Emission Point 1	T (Total) KG/Year	QUANTITY	
			M/C/E	Method Code			A (Accidental) KG/Year	F (Fugitive) KG/Year
				Description or Description		0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

**4.3 RELEASES TO WASTEWATER OR SEWER**

[Link to previous years emissions data](#)

11/19/18 10:21:14 AM, Name: Region, Parameter: Number, Units: kg/yr, 2/19/18 10:21:14

SECTION A - PRRR POLLUTANTS		OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE WATER TREATMENT OR SEWER		Please enter all quantities in this section in KGs		QUANTITY		
No. Annex II Pollutant	Name	M/C/E	METHOD		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Description Used				
					0.0	0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the add button

SECTION B - REMAINING POLLUTANT EMISSIONS (as required in your license)		OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER		Please enter all quantities in this section in KGs		QUANTITY		
Pollutant No	Name	M/C/E	METHOD		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Description Used				
					0.0	0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the add button

**4.A RELEASES TO LAND**

[Link to previous years emissions data](#)

Facility: 10828 | Facility Name: TopChem Pharmaceuticals | Order #: Adunum\_10828\_2017 us | Return Year: 2017

9/3/18 13:31

**SECTION A : PTRR POLLUTANTS**

SECTION A : PTRR POLLUTANTS		RELEASES TO LAND		QUANTITY	
No. Above 1	POLLUTANT Name	Emission Point 1	T (Total) KGYear	A (Accidental) KGYear	
		0.0	0.0	0.0	

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

**SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your License)**

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your License)		RELEASES TO LAND		QUANTITY	
Pollutant No.	POLLUTANT Name	Emission Point 1	T (Total) KGYear	A (Accidental) KGYear	
		0.0	0.0	0.0	

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

**5. ON-SITE TREATMENT & OFF-SITE TRANSFERS OF WASTE**

**Please enter all quantities on this sheet in Tonnes**

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	MCE	Method Used		Location of Treatment	UK Waste Name and Description (No. of Non Hazardous, No. of Recycled, No. of Recovered)	UK Waste Address of Recipient/Disposer	Name and Contact Details of Recipient/Disposer (UK Waste DMRV)	Actual Address of Final Destination (e.g. Final Recovery/Disposal Site (UK Waste DMRV))
							Method Used	Method Used					
To Other Countries	08 02 04	Yes	2.4	sodium and potassium hydroxide	R12	M	Weighted	Abroad	ECO Safe Systems Limited, 54-2 WCP-DC-00-1203-01	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland
To Other Countries	07 01 03	Yes	0.6	organic halogenated solvents, washing liquids and mother liquors	R12	M	Weighted	Abroad	ECO Safe Systems Limited, 54-2 WCP-DC-00-1203-01	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland
To Other Countries	07 05 04	Yes	9.2	mother liquors	R12	M	Weighted	Abroad	ECO Safe Systems Limited, 54-2 WCP-DC-00-1203-01	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland
To Other Countries	15 01 10	Yes	0.5	packaging containing residues of or contaminated by dangerous substances	R12	M	Weighted	Abroad	ECO Safe Systems Limited, 54-2 WCP-DC-00-1203-01	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland
To Other Countries	15 02 02	Yes	1.7	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R12	M	Weighted	Abroad	ECO Safe Systems Limited, 54-2 WCP-DC-00-1203-01	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland
To Other Countries	18 05 07	Yes	0.2	discarded inorganic chemicals consisting of or containing dangerous substances	R12	M	Weighted	Abroad	ECO Safe Systems Limited, 54-2 WCP-DC-00-1203-01	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland	Unit 1A, Allied Industrial Estate, Kilmore Road, Ballyfermot, Dublin 10, Ireland
To Other Countries	15 01 10	Yes	0.03	packaging containing residues of or contaminated by dangerous substances	D10	M	Weighted	Abroad	SRCL, NWCP-08-01178-03	430 Beech Road, Western Industrial Estate, Nassa Road, Dublin 12, Ireland	430 Beech Road, Western Industrial Estate, Nassa Road, Dublin 12, Ireland	430 Beech Road, Western Industrial Estate, Nassa Road, Dublin 12, Ireland	430 Beech Road, Western Industrial Estate, Nassa Road, Dublin 12, Ireland

\* Select a row by clicking on the 'Transfer' or 'Return' button in the 'Method Used' column.