

Permit Reference Number: BU2349

Operator: Synthite Limited

Installation: Mold Chemicals (Alyn Works)

Form Number: A1

Reporting of Emissions to Air for the period from 01/10/16 to 31/12/16

Emissions to Air							
Emission Point	Substance / Parameter	Emission Limit Value [6]	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
A1	Dimethylamine	5mg/m3	<1.2	Gastec tube	29/11/16	None	25%
A2	Ammonia	10mg/m3	o/c	-	-	-	-
A3	Propionic Acid (Measured as VOC Toluene)	10mg/m3	0.4	VOC meter	12/10/16	None	25%
A4	Formic Acid (Measured as VOC Toluene)	10mg/m3	0.4	VOC meter	12/10/16	None	25%
A5	Ammonia	10mg/m3	<0.2	Gastec tube	12/10/16	None	25%
A5	Formic & Propionic Acid (Measured as VOC Toluene)	10mg/m3	0.3	VOC meter	12/10/16	None	25%
A6	Ammonia	10mg/m3	<0.2	Gastec tube	12/10/16	None	25%
A6	Formic Acid (Measured as VOC Toluene)	10mg/m3	0.9	VOC meter	12/10/16	None	25%
A7	Formaldehyde	2mg/m3	0	DNPH/HPLC	15/10/16	None	30%
A7	Acrylamide	5mg/m3	o/c	-	-	-	-
A7	Acrylic Acid	5mg/m3	o/c	-	-	-	-
A7	Ammonia	10mg/m3	0	Gastec tube	15/10/16	None	25%
A7	Sulphur Dioxide	50mg/m3	o/c	-	-	-	-
A7	n – Decane (Measured as VOC Toluene)	20mg/m3	0	VOC meter	15/10/16	None	25%
A8	Formaldehyde	5mg/m3	0.2	DNPH/HPLC	29/11/16	None	30%
A8	Methanol	40mg/m3	10.3	VOC meter	29/11/16	None	25%
A8	Dimethylamine	5mg/m3	<1.1	Gastec tube	29/11/16	None	25%

Operator : Synthite Limited Form Number : A1 continued							
A9	n – Decane (Measured as VOC Toluene)	10mg/m3	o/c	-	-	-	-
A10	Formaldehyde	5mg/m3	0.7	DNPH/HPLC	14/12/16	None	30%
A10	Methanol	1mg/m3	<0.3	Gastec tube	14/12/16	None	25%
A11	Ammonia	10mg/m3	4.1	Gastec tube	14/12/16	None	25%
A11	Formaldehyde	5mg/m3	0.6	DNPH/HPLC	14/12/16	None	30%
A11	Methanol	1mg/m3	<0.3	Gastec tube	14/12/16	None	25%
A12	Formaldehyde	5mg/m3	1.2	DNPH/HPLC	14/12/16	None	30%
A12	Methanol	5mg/m3	<0.4	Gastec tube	14/12/16	None	25%
A13	Methanol	0.5kg/hr [7]	0.1	Estimated	01/10/16 to 31/12/16	N/A	Not Known
A14	Methanol	0.5kg/hr [7]	0.1	Estimated	01/10/16 to 31/12/16	N/A	Not Known
A15	Formaldehyde	5mg/m3	2.9	DNPH/HPLC	14/12/16	None	30%
A15	Methanol	5mg/m3	1.1	Gastec tube	14/12/16	None	25%
A16	Formaldehyde	5mg/m3	0.3	DNPH/HPLC	14/12/16	None	30%
A16	Methanol	40mg/m3	0.1	VOC meter	14/12/16	None	25%
A16	Nitrogen Dioxide	50mg/m3	0.6	Gastec tube	14/12/16	None	25%
A17	Nitrogen Dioxide	150mg/m3	0.4	Gastec tube	15/12/16	None	25%
A18	Formaldehyde	5mg/m3	0.4	DNPH/HPLC	15/12/16	None	30%
A18	Methanol	20mg/m3	0.3	VOC meter	15/12/16	None	25%

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[6] The emission limit values are expressed as instantaneous and corrected to 273K, 101.3kPa and in relation to gases from combustion processes 3% oxygen, dry (for gaseous fuels).

[7] Taken as average vent concentration multiplied by the volume of expressed air and actual number of deliveries.

Signed 

Date...27/01/2017.....

(Authorised to sign as representative of the Operator)

Permit Reference Number: BU23349

Installation: Mold Chemicals (Alyn Works)

Operator: Synthite Limited

Form Number: W1

Reporting of Emissions to Water (other than to Sewer) for the period from 01/10/16 to 31/12/16

Emissions to Water							
Emission Point	Substance / Parameter	Emission Limit Value [6]	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
W1	pH	6.0 – 8.5 [7]	7.0, 7.4	pH meter	20/10/16, 14/11/16	None	20%
	BOD	10mg/l	5	ISO5815:1989	10/11/16	None	20%
	Suspended Solids	20mg/l	Nil	GFA ISO11929:1997	All samples within quarter	None	20%
	Formaldehyde	0.25mg/l	0.2	DNPH/HPLC	20/10/16	None	30%
	Ammonia (Unionised as N)	5mg/l	1.6	Ion Selective Electrode	05/10/16	None	
	Temperature	25°C	14	Calibrated thermometer	05/10/16	None	20%
	Volumetric Flow Rate	700m3/day [8]	204	Meter (ISBN 011752364X)	22/12/16	None	20%
River Monitoring							
R. Alyn SJ 2363 6487	pH	n/a	8.2	pH meter	14/12/16	None	20%
	Formaldehyde	n/a	0.9	DNPH/HPLC	01/11/16	None	30%

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. colorimetry.

[3] For non-continuous measurements the date and time of the sample that produced the result is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[6] The emission limit values are expressed as instantaneous.

[7] The emission limit values for pH are expressed as minimum and maximum individual values.

[8] The emission limit value for volumetric flow rate is expressed as a daily maximum (not to exceed 30m3/hour).

Signed 

Date...27/1/2017.....

(authorised to sign as representative of the Operator)

Permit Reference Number: BU23349

Operator: Synthite Limited

Installation: Mold Chemicals (Alyn Works)

Form Number: S1

Reporting of Emissions to Sewer for the period from 01/10/16 to 31/12/16

Emissions to Sewer							
Emission Point	Substance / Parameter	Emission Limit Value [6]	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
S1	pH	5 – 9 [7]	6.1, 8.2	pH Meter	23/12/16, 14/10/16	None	20%
	Suspended solids	400mg/l	293	GFA ISO11929:1997	16/11/16	None	20%
	Formaldehyde	40mg/l	10.77	DNPH/HPLC	28/12/16	None	30%
	Methanol	40mg/l	10.0	Gas Chromatography	28/12/16	None	20%
	Ammonia (Unionised as N)	25mg/l	18.5	Ion Selective Electrode	28/12/16	None	
	COD	1500mg/l	851	Dichromate ISO6060:1989	18/11/16	None	20%
	Grease and Oils	10mg/l	Nil	Gas Chromatography	All samples within quarter	None	20%
	Volumetric Flow Rate	300m ³ /day [8]	299	Meter (ISBN 011752364X)	13/12/16	None	20%
	Temperature	40°C	24	Calibrated Thermometer	02/11/16	None	20%
Other Monitoring Points			Result [9]				
B/H1	Groundwater level	n/a	3.97	Dip Tape	03/11/16	None	10%
	Formaldehyde	n/a	0.06	DNPH/HPLC	03/11/16	None	30%
B/H8	Groundwater level	n/a	1.56	Dip Tape	03/11/16	None	10%
	Formaldehyde	n/a	0.01	DNPH/HPLC	03/11/16	None	30%
B/H9	Groundwater level	n/a	3.42	Dip Tape	03/11/16	None	10%
	Formaldehyde	n/a	0.12	DNPH/HPLC	03/11/16	None	30%
B/H10	Groundwater level	n/a	3.05	Dip Tape	03/11/16	None	10%
	Formaldehyde	n/a	0.00	DNPH/HPLC	03/11/16	None	30%
B/HA	Groundwater level	n/a	3.15	Dip Tape	03/11/16	None	10%
	Formaldehyde	n/a	0.00	DNPH/HPLC	03/11/16	None	30%

Emission Point	Substance / Parameter	Emission Limit Value [6]	Result [9]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
B/HB	Groundwater level	n/a	6.49	Dip Tape	03/11/16	None	10%
	Formaldehyde	n/a	0.00	DNPH/HPLC	03/11/16	None	30%
SP4	Groundwater level	n/a	1.58	Dip Tape	03/11/16	None	10%
	Formaldehyde	n/a	0.01	DNPH/HPLC	03/11/16	None	30%
Culvert Pump	Formaldehyde	n/a	30	Titration using sulphite method	16/11/16	None	30%

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. colourimetry.

[3] For non-continuous measurements the date and time of the sample that produced the result is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[6] The emission limit values are expressed as instantaneous.

[7] The emission limit values for pH are expressed as minimum and maximum individual values.

[8] The emission limit value for volumetric flow rate is expressed as a daily maximum.

[9] Readings are in metres below the respective borehole surface.

Signed 

Date...27/01/2017..... (Authorised to sign as representative of the Operator)

Permit Reference Number: BU2349

Operator: Synthite Limited

Installation: Mold Chemicals (Alyn Works)

Form Number: R1

Reporting of Waste Disposal and Recovery for the year 2016

Waste Disposal & Recovery			
Waste Description	Disposal		Recovery
	Route	Tonnes	Tonnes
1) Hazardous Wastes			
Chemical waste	D9	399.100	
Other general	D1	212.72	
Total hazardous waste		611.82	
2) Non-Hazardous Wastes			
Pallets	Recycled		889**
Paper/cardboard	Recycled		57.3
Total non-hazardous waste			75.08
TOTAL WASTE		686.9	

Trends in Waste Disposal and Recovery				
Year	Parameter			
	Haz	Non-Haz	Total Waste	Waste per unit output
2004	579	2,809	3389	0.025
2005	438	390	828	0.005
2006	274	748	1,057	0.006
2007	303	392	664	0.003
2008	306	456	762	0.003
2009	108	413	521	0.003
2010	67	162	230	0.001
2011	575	214	789	0.003
2012	952	113	1065	0.005
2013	344	64	407	0.002
2014	330	100	430	0.002
2015	362	96	458	0.003
2016	612	75	687	0.004

Operator's comments :

** = Number of Packages NOT tonnes

Signed ...

Date...27/01/2017.....

(Authorised to sign as representative of the Operator)

Permit Reference Number: BU2349

Operator: Synthite Limited

Installation: Mold Chemicals (Alyn Works)

Form Number: WU1

Reporting of Water Usage for the year 2016

Water Usage		
Water Source	Usage (m ³)	Specific Usage (m ³ /t)
Mains water	117,669	
Boreholes A&B	53,166.6	
TOTAL WATER USAGE	170,835.6	

Trends in Water Usage				
Year	Parameter			
	Mains water	Boreholes	Total Water usage	Water per unit output
2004	210,558	78,612	289,170	2.14
2005	172,031	83,600	255,631	1.64
2006	145,004	93,392	238,396	1.49
2007	159,226	88,712	247,939	1.22
2008	160,359	57,944	218,303	0.95
2009	133,162	64,965	198,126	0.97
2010	147,159	57,064	204,222	0.80
2011	172,442	20,173	192,616	0.83
2012	111,323	63,635	174,958	0.74
2013	127,394	110,043	237,437	1.07
2014	137,550	44,420	181,970	0.79
2015	143,692	47,937	191,629	1.05
2016	117,669	53,166.6	170,835.6	1.09

Operator's comments :

Signed 

Date...27/01/2017.....

(Authorised to sign as representative of the Operator)

Permit Reference Number: BU2349

Operator: Synthite Limited

Installation: Mold Chemicals (Alyn Works)

Form Number: E1

Reporting of Energy Usage for the year 2016

Energy Usage			
Energy Source	Energy Usage		CO ₂ Produced (tonnes)
	Quantity	Primary Energy (MWh)	
Electricity *	13,795 MWh	35,831 MWh	-
Exit Gas Boiler**	6,487.15 MWh	8,108.9 MWh	3,186.79
Catalytic Steam**	4,845.42 MWh	6,056.8 MWh	2,434.48
Natural Gas	451,865.42 m ³	4,762 MWh	919.29
Gas Oil	0 Tonnes	-	-
TOTAL		54,759	6,540.56

* Conversion factor for delivered electricity to primary energy = 38.5

**Exit Gas Boiler and Catalytic Steam Generator conversion at 80% of primary energy – consistent with CCA

Operator's comments :

Trends in Energy Usage			
Year	Parameter		
	Primary Energy usage	CO ₂ produced	CO ₂ per unit output
2004	78,449	13,009	0.096
2005	73,664	12,127	0.078
2006	79,222	12,160	0.076
2007	76,517	11,070	0.054
2008	68,385	8,954	0.039
2009	59,155	7,097	0.035
2010	58,212	7,779	0.031
2011	53,447	6,473	0.028
2012	51,904	6,340	0.027
2013	52,569	6,012	0.027
2014	53,100	6,409	0.028
2015	55,341	6,766	0.037
2016	54,759	6,541	0.042

Signed ... 

Date...27/01/2017.....

(Authorised to sign as representative of the Operator)