

Permit Number: BV4223IE

Operator:

Huntsman Corporation UK Limited

Facility: Llanelli Plant

Form Number:

Air1

Reporting of emissions to air for the period from 1st July 2021 to 31st December 2021

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
A1	Hydrogen chloride	20 mg/m ³	Minimum 1-hour period	0.24	BS EN 1911	09 December 2021 18:46 - 19:50	0.108
A1	Hydrogen fluoride	2 mg/m ³	Minimum 1-hour period	0.02	ISO 15713	23 December 2021 14:33 - 15:33	0.018
A1	Sulphur dioxide	100 mg/m ³	Minimum 1-hour period	0.61	BS EN 14791	23 December 2021 15:44 - 16:44	0.178
A1	Cadmium & thallium and their compounds (total)	0.05 mg/m ³	over minimum 30 minute, maximum 8 hour period	0.0007	BS EN 14385	09 December 2021 16:30 - 18:34	0.0007
A1	Mercury and its compounds	0.05 mg/m ³	over minimum 30 minute, maximum 8 hour period	0.0004	BS EN 13211	09 December 2021 16:30 - 18:34	0.0004
A1	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/ m ³	over minimum 30 minute, maximum 8 hour period	0.0905	BS EN 14385	09 December 2021 16:30 - 18:34	0.005
A1	Dioxins/furans (I-TEQ)	0.1ng/m ³	Over minimum 6 hour, maximum 8 hour period	0.0061	BS EN 1948 (1,2,3)	09 December 2021 10:15 - 16:19	0.0386
A1	Dioxin/furans (WHO-TEQ Humans/Mammals) ng/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.0049	BS EN 1948/Ts(part 4)	09 December 2021 10:15 - 16:19	0.0349
A1	Dioxin/furans (WHO-TEQ Fish) ng/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.0058	BS EN 1948/Ts(part 4)	09 December 2021 10:15 - 16:19	0.0384

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
A1	Dioxin/furans (WHO-TEQ Birds)	No limit set	Over minimum 6 hour, maximum 8 hour period	0.0114	BS EN 1948/TS(part 4)	09 December 2021 10:15 - 16:19	0.0506
A1	Dioxin-like PCBs (WHO-TEQ Humans/Mammals) ng/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.0005	BS EN 1948/TS(part 4)	09 December 2021 10:15 - 16:19	0.0003
A1	Dioxin-like PCBs (WHO-TEQ Fish) ng/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.00003	BS EN 1948/TS(part 4)	09 December 2021 10:15 - 16:19	0.00001
A1	Dioxin-like PCBs (WHO-TEQ Birds) ng/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.0014	BS EN 1948/TS(part 4)	09 December 2021 10:15 - 16:19	0.0035
A1	Poly-cyclic aromatic hydrocarbons (PAHs) Total ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	1.94	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Anthracene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	< 0.0014	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Benzo[a]anthracene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.00	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Benzo[b]fluoranthene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.00	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Benzo[k]fluoranthene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	< 0.0014	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Benzo[b]naph [2,1-d]thiophene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.00	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ⁽¹⁾	Test Method ⁽²⁾	Sample Date and Times ⁽³⁾	Uncertainty ⁽⁴⁾
A1	Benzo[c]phenanthrene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	< 0.0014	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Benzo[ghi]perylene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.01	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Benzo[a]pyrene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	< 0.0014	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Cholanthrene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	< 0.0014	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Chrysene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.00	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Cyclopenta[c,d]pyrene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	< 0.0014	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Dibenzo[ah]anthracene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	< 0.0014	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Dibenzo[al]pyrene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	< 0.0014	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Fluoranthene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.04	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%
A1	Indo[1,2,3-cd]pyrene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	< 0.0014	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.3%

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
A1	Naphthalene ug/m ³	No limit set	Over minimum 6 hour, maximum 8 hour period	0.64	BS ISO 11338-1 and BS-ISO 11338-2	23 December 2021 08:15 - 14:21	30.2
A2	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	400 mg/m ³	Minimum 1 hour period	162	BS EN 14792	09 December 2021 10:15 - 16:19	2.1
A2	Carbon monoxide	200 mg/m ³	Minimum 1 hour period	1.93	BS EN 15058	09 December 2021 10:15 - 16:19	1.7

- 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 Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
- 3) For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
- 4) The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed  (EUS) (Official) Date 26/01/2022

Authorised to sign as representative of Huntsman Corporation UK Limited
representative of Huntsman Corporation UK Limited