

# Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

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Zeon Chemicals Europe Limited

Sully Polymerisation Plant  
Sully Moors Road  
Sully  
Vale Of Glamorgan  
CF64 5ZE

Variation application number  
EPR/UP3836SS/V002

Permit number  
EPR/UP3836SS

# Sully Polymerisation Plant

## Permit number EPR/UP3836SS

### Introductory note

**This introductory note does not form a part of the notice.**

The following notice gives notice of the variation and consolidation of an environmental permit.

This Environment Agency Led permit variation and consolidation has been issued for the following reasons:

- To review emissions to air and to water from the installation to better protect the environment;
- To amend errors in the original permit and review conditions;
- To update all conditions in line with the most recent template.

The schedules specify the changes made to the permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

#### Status log of the permit

Description	Date	Comments
Application UP3836SS received	Duly made 11/05/2006	Application for producing organic chemicals
Additional information received	12/06/2006	Response received 11/07/2006
Permit determined EPR/UP3836SS	12/12/2006	Original permit issued to Zeon Chemicals Europe Limited
Environment Agency Led Variation	Duly made 19/03/2012	Application to vary and update the permit
Variation determined EPR/UP3836SS	17/05/2012	Varied permit issued.

End of introductory note

# Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

**Permit number**

**EPR/UP3836SS**

**Issued to**

**Zeon Chemicals Europe Limited** (“the operator”)

whose registered office is

**16 Churchill Way**

**Cardiff**

**CF10 2DX**

company registration number **2343599**

to operate a regulated facility at

**Sully Polymerisation Plant**

**Sully moors Road**

**Sully**

**Vale of Glamorgan**

**CF64 5ZE**

to the extent set out in the schedules.

The notice shall take effect from 17/05/2012

Name	Date
<b>Eirian MacDonald</b> <b>Principal Permitting Team Leader</b>	<b>17/05/2012</b>

Authorised on behalf of the Environment Agency

## **Schedule 1**

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

The Environmental Permitting (England and Wales) Regulations 2010

**Permit number**

**EPR/UP3836SS**

This is the consolidated permit referred to in the variation and consolidation notice for application insert application number authorising,

**Zeon Chemicals Europe**

whose registered office is

**16 Churchill Way**

**Cardiff**

**CF10 2DX**

company registration number **2343599**

to operate an installation at

**Sully Polymerisation Plant**

**Sully moors Road**

**Sully**

**Vale of Glamorgan**

**CF64 5ZE**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
<b>Eirian MacDonald</b> <b>Principal Permitting Team Leader</b>	<b>17/05/2012</b>

Authorised on behalf of the Environment Agency

# 1 Management

## 1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

## 1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

## 1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

## 1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
  - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
  - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **2 Operations**

### **2.1 Permitted activities**

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

### **2.2 The site**

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 7 to this permit.

### **2.3 Operating techniques**

- 2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- (b) If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan specified in schedule 1, table S1.2 or otherwise required under this permit, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **2.4 Improvement programme**

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

## **3 Emissions and monitoring**

### **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3, tables S3.1 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Total annual emissions from the emission points set out in schedule 3, tables S3.1 and S3.2 of a substance listed in schedule 3 tables S3.1 and S3.2 shall not exceed the relevant limits in table S3.1 and S3.2.

### **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
  - (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

### **3.3 Monitoring**

- 3.3.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
  - (a) point source emissions specified in tables S3.1, S3.2 and S3.3;
  - (b) ambient air monitoring specified in table S3.4;
  - (c) process monitoring specified in table S3.5;
- 3.3.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

- 3.3.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.3.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.3.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.

## **3.4 Odour**

- 3.4.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.4.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan;
  - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

## **3.5 Noise and vibration**

- 3.5.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.5.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan;
  - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

# **4 Information**

## **4.1 Records**

- 4.1.1 All records required to be made by this permit shall:
- (a) be legible;
  - (b) be made as soon as reasonably practicable;

- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
  - (i) off-site environmental effects; and
  - (ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

## **4.2 Reporting**

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production /treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

## 4.3 Notifications

4.3.1 The Environment Agency shall be notified without delay following the detection of:

- (a) any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution;
- (b) the breach of a limit specified in the permit; or
- (c) any significant adverse environmental effects.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) the Environment Agency shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.7 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;
- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

## **4.4 Interpretation**

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “without delay”, in which case it may be provided by telephone.

# Schedule 1 - Operations

**Table S1.1 activities**

Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A1	S4.1A1(a)(ix)	Producing organic chemicals such as synthetic rubber	From receipt of raw materials to production, storage and despatch of final product including un-reacted monomer for re-use, disposal of waste and emission of exhaust gases and effluent.

**Directly Associated Activities**

A2	S5.3 A1(c)(ii)	Disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day, physico-chemical treatment.	From receipt and treatment of effluent, storage and disposal of sludge, to discharge of treated effluent to Momenive lagoon.
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**Table S1.2 Operating techniques**

Description	Parts	Date Received
Application	Application section Nos., ZIA005, ZIA 006, ZIA007, ZIA008, ZIA 010, ZIA011, ZIA019,ZIA020	20/03/06
Schedule 4 Notice Request dated 12/06/06	Response to question 5,6,7,8,9,10,16,22 providing further details of process control.	11/07/06

**Table S1.3 Improvement programme requirements**

<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IP1	<p>Submit a written plan to the Environment Agency for approval. The plan must contain measures to improve operation of the thermal oxidiser to achieve 97% availability. The plan must contain dates for the implementation of individual measures.</p> <p>The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan. You must implement the plan as approved, and from the date stipulated by the Environment Agency.</p>	01/10/2012
IP2	<p>Submit a written plan to the Environment Agency for approval. The plan must contain measures to reduce acrylonitrile and butadiene emissions to below Air Quality Standard Limits. The plan must contain dates for the implementation of individual measures.</p> <p>The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan. You must implement the plan as approved, and from the date stipulated by the Environment Agency.</p>	01/01/2012
IP3	<p>Submit a written report to the Environment Agency for approval. The report must include an investigation of installing on-line metering equipment to continuously monitor emissions from the installation at emissions point S1. The equipment must be certified to MCERTS standards, where applicable. The report must include a plan containing dates for the implementation of individual measures.</p> <p>The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the report. You must implement the plan as approved, and from the date stipulated by the Environment Agency.</p>	01/02/2013
IP4	<p>Submit a written plan to the Environment Agency for approval. The plan must contain measures to improve site infrastructure and containment measures to meet the requirements detailed on pages 19, 20 in Section 'Emissions of substances not controlled by emission limits to sewer, surface water and ground water' and on Pages 40 and 41 in Section 'Emissions to surface water and groundwater' in the guidance note 'How to comply with your Environmental Permit (EPR 1.00) V4.0'. The plan must contain dates for the implementation of individual measures.</p> <p>The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan. You must implement the plan as approved, and from the date stipulated by the Environment Agency.</p>	01/09/2013
IP5	<p>Submit a written plan to the Environment Agency for approval. The plan must detail how the effluent treatment plant will be optimised to meet the benchmarks given in Annex 1 of the Sector Guidance Note for the Speciality Organic Chemicals Sector EPR 4.02.</p> <p>The plan must contain dates for the implementation of individual measures.</p> <p>The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan. You must implement the plan as approved, and from the date stipulated by the Environment Agency.</p>	01/09/2015

# Schedule 2 - Waste types, raw materials and fuels

**Table S2.1 Raw materials and fuels**

Raw materials and fuel description	Specification
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## Schedule 3 – Emissions and monitoring

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements**

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 (see map ZSM001 , response to schedule 4 notice)	Butadiene	2" vent pressure relief from monomer recovery located at N55 building	0.25kg/hr	-	Continuous	Method of measurement to be approved by the Environment Agency.
A2 (see map ZSM001 , response to schedule 4 notice)	No parameters set	6" vent N55 building	-	-	-	-
A3 (see map ZSM001 , response to schedule 4 notice)	Butadiene	Polymerisation vac pump	0.2kg/hr	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH1024
A3 (see map ZSM001 , response to schedule 4 notice)	Acrylonitrile	Polymerisation vac pump	0.5kg/hr	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH 1604
A4 (see map ZSM001 , response to schedule 4 notice)	Butadiene	8 Bottle vents N55 building (vents grouped together.)	0.1kg/hr for each bottle vent	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH1024
A5 (see map ZSM001 , response to schedule 4 notice)	Acrylonitrile	N58 acrylonitrile storage tank	0.1kg/hr	Spot sample over a one hour period	Quarterly Not required after IP1 implemented.	BS EN 13649:2002 with subsequent analysis to NIOSH 1604
A6 (see map ZSM001 , response to schedule 4 notice)	Acrylonitrile	Blend tank scrubber	0.1kg/hr	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH 1604
A7 (see map ZSM001 , response to schedule 4 notice)	Butadiene	N159 building Weigh tank, intermediate tank Coagulator vent	0.25kg/hr	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH1024

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A7 (see map ZSM001 , response to schedule 4 notice)	Acrylonitrile	N159 building Weigh tank, intermediate tank Coagulator vent	0.6kg/hr	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH 1604
A11 (see map ZSM001 , response to schedule 4 notice)	Butadiene	N205 building Fluid bed drier exhaust	0.33kg/hr	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH1024
A11 (see map ZSM001 , response to schedule 4 notice)	Acrylonitrile	N205 building Fluid bed drier exhaust	0.5kg/hr	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH 1604
A12 (see map ZSM001 , response to schedule 4 notice)	Butadiene	N205 building Drier exhaust	0.4kg /hr	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH1024
A12 (see map ZSM001 , response to schedule 4 notice)	Acrylonitrile	N205 building Drier exhaust	1.25 kg /hr	Spot sample over a one hour period	Quarterly	BS EN 13649:2002 with subsequent analysis to NIOSH 1604
A13 (see map ZSM001 , response to schedule 4 notice)	No parameters set	N160 building Polyblack drier exhaust	-	-	-	-
A14 (see map ZSM001 , response to schedule 4 notice)	No parameters set	N99 building Polyblack blend tank exhaust	-	-	-	-
A15 (see map ZSM001 , response to schedule 4 notice)	No parameters set	N99 building Polyblack coagulator exhaust	-	-	-	-
A16 (see map ZSM001 , response to schedule 4 notice)	Butadiene	Thermal Oxidiser exhaust stack	0.1kg/hr	-	Annually	Method of measurement to be approved by the Environment Agency.

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A16 see map ZSM001 , response to schedule 4 notice	Acrylonitrile	Thermal Oxidiser exhaust stack	0.1kg/hr	-	Annually	Method of measurement to be approved by the Environment Agency.
A17 see map ZSM001 , response to schedule 4 notice	Substance B defined in CIC submission	ZSC mixer exhaust vent	-	Spot sample over a one hour period	Quarterly	As agreed with the Agency.
A18 see map ZSM001 , response to schedule 4 notice	Substance B defined in CIC submission	ZSC mixer scrubber stack	-	Spot sample over a one hour period	Quarterly	As agreed with the Agency.
A19 see map ZSM001 , response to schedule 4 notice	Substance B defined in CIC submission	ZSC mixer scrubber stack	-	Spot sample over a one hour period	Quarterly	As agreed with the Agency.
A20 see map ZSM001 , response to schedule 4 notice	No parameters set	Location U167 Belt press exhaust	-	-	-	-
A21 see map ZSM001 , response to schedule 4 notice	No parameters set	N54 location methanol road tanker offloading	-	-	-	-
A22 see map ZSM001 , response to schedule 4 notice	No parameters set	N54 location Fugitive ammonia emission from refrigeration plant	-	-	-	-
A23 see map ZSM001 , response to schedule 4 notice	No parameters set	N71 building Latex stock tank fugitive emissions	-	-	-	-

**Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
S1 discharge to Momentive lagoon (ST1425 6816)	Total suspended solids	Site effluent treatment plant	100mg/l	Max	Daily	BS EN 872 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	Total suspended solids	Site effluent treatment plant	80mg/l The 95th percentile of all samples taken over the period of one calendar month shall not exceed this value.	24-hr flow proportional sample	Daily	BS EN 872 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	Total suspended solids	Site effluent treatment plant	50mg/l Effective after completion of IP5	Max	Daily	BS EN 872 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	Total suspended solids	Site effluent treatment plant	30mg/l The 95th percentile of all samples taken over the period of one calendar month shall not exceed this value.  Effective after completion of IP5	24-hr flow proportional sample	Daily	BS EN 872 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	Acrylonitrile	Site effluent treatment plant	3.0mg/l The 95th percentile of all samples taken over the period of one calendar month shall not exceed this value.	24-hr flow proportional sample	Daily	SCA blue Book method 170 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	Acrylonitrile	Site effluent treatment plant	5.0mg/l	Max	Daily	SCA blue Book method 170 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	COD	Site effluent treatment plant	1400mg/l The 95th percentile of all samples taken over the period of one calendar month shall not exceed this value.	24-hr flow proportional sample	Daily	BS ISO 15705:2002 or other method agreed with the Environment Agency.

**Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
S1 discharge to Momentive lagoon (ST1425 6816)	COD	Site effluent treatment plant	1800mg/l	Max	Daily	BS ISO 15705:2002 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	COD	Site effluent treatment plant	125mg/l The 95th percentile of all samples taken over the period of one calendar month shall not exceed this value on completion of IP5.	24-hr flow proportional sample	Daily	BS ISO 15705:2002 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	COD	Site effluent treatment plant	150mg/l on completion of IP5.	Max	Daily	BS ISO 15705:2002 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	Methanol	Site effluent treatment plant	3.0mg/l The 95th percentile of all samples taken over the period of one calendar month shall not exceed this value.	24-hr flow proportional sample	Daily	SCA blue Book method 170 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	Methanol	Site effluent treatment plant	5.0mg/l	Max	Daily	SCA blue Book method 170 or other method agreed with the Environment Agency.
S1 discharge to Momentive lagoon (ST1425 6816)	pH	Site effluent treatment plant	10	Max	Daily	BS6068-2.50 or other method agreed with the Environment Agency.

**Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements**

Emission point ref. & location	Parameter	Source	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1 discharge to Momentive lagoon (ST1425 6816)	pH	Site effluent treatment plant	6	Min	Daily	BS6068-2.50 or other method agreed with the Environment Agency.

**Table S3.3 Annual limits**

Substance	Medium	Limit (including unit)
Butadiene	Air	1750kg in a year
Acrylonitrile	Air	2500kg in a year
Acrylonitrile	Water	542kg in a year
Methanol	Water	536kg in a year

**Table S3.4 Ambient air monitoring requirements**

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Monitoring points detailed on Passive Tube Location Map April 2011 (L1 to L14) or other revised plan as agreed with the Environment Agency.	Butadiene	Continuous	Diffusion tube analysis	Measurements to be reported to the Environment Agency on a quarterly basis. Monitoring to continue until otherwise agreed with Environment Agency.
Monitoring points detailed on Passive Tube Location Map April 2011 (L1 to L14) or other revised plan as agreed with the Environment Agency.	Acrylonitrile	Continuous	Diffusion tube analysis	Measurements to be reported to the Environment Agency on a quarterly basis. Monitoring to continue until otherwise agreed with Environment Agency.

**Table S3.5 Process monitoring requirements**

<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
Fugitive release of acrylonitrile	Acrylonitrile	Annually	As agreed in writing with the Environment Agency	NA
Fugitive release of butadiene	Butadiene	Annually	As agreed in writing with the Environment Agency	NA
Thermal Oxidiser	Availability (%)	Continuous	Not applicable	Must be above 95% until completion of IP1 and above 97% following completion of IP1
Thermal Oxidiser	Temperature	Continuous	Not applicable	Must be above 900°C. Auto shut-off to be activated below this temperature. Data log to be made available during routine audits.
A1 and A2	Butadiene	Daily	As agreed in writing with the Environment Agency	Any mass of butadiene vented (in kg) and the duration (in mins) of the venting to be reported to the Environment Agency Quarterly on form Vent1.
Site boundary	Butadiene	As required	As agreed in writing with the Environment Agency	Following complaint or incident, to be submitted within 1 week of analysis.

## Schedule 4 - Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Emissions to air Parameters as required by condition 3.3.1.	A1, A3, A4, A5,A6,A7, A11,A12, A16,A17,A18,A19	All quarterly, except A16 annually	01/06/2012
Emissions to sewer Parameters as required by condition 3.3.1	S1	Quarterly	01/06/2012
Process monitoring requirements as required by condition 3.3.1	-	Annually	01/06/2012
Ambient monitoring requirements as required by condition 3.3.1	-	Quarterly	01/06/2012
monthly kg of butadiene vented	A1	Quarterly	01/06/2012
monthly kg of butadiene vented	A2	Quarterly	01/06/2012
Total monthly time vented	A1	Quarterly	01/06/2012
Total monthly time vented	A2	Quarterly	01/06/2012

<b>Table S4.2: Annual production/treatment</b>	
<b>Parameter</b>	<b>Units</b>
Nitrile rubber (bale form)	Tonnes
Latex	Tonnes
ZSC composite	Tonnes

<b>Table S4.3 Performance parameters</b>		
<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Units</b>
Water usage	Annually	Tonnes / tonnes of product
Energy usage	Annually	MWs
Waste	Annually	Tonnes / tonnes of product
Fugitive release of butadiene	Annually	kg
Fugitive release of acrylonitrile	Annually	kg
Total butadiene emissions as % of product	Annually	%
Total acrylonitrile emissions as % of product	Annually	%

**Table S4.4 Reporting forms**

<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Air	Form Air1 or other form as agreed in writing by the Agency	17/05/2012
Sewer	Form Sewer1 or other form as agreed in writing by the Agency	17/05/2012
Process monitoring	ProcessMonitoring1	17/05/2012
Ambient monitoring	Ambient1	17/05/2012
Other performance indicators	Form Performance1 or other form as agreed in writing by the Agency	17/05/2012
Boundary Monitoring	Form BoundaryMonitoring1 or other form as agreed in writing by the Agency	17/05/2012

## Schedule 5 - Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

**If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.**

### Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

### Part B - to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

*\* authorised to sign on behalf of the operator*

## Schedule 6 - Interpretation

*“accident”* means an accident that may result in pollution.

*“annually”* means once every year.

*“application”* means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

*“authorised officer”* means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

*“emissions of substances not controlled by emission limits”* means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

*“emissions to land”* includes emissions to groundwater.

*“EP Regulations”* means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

*“groundwater”* means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

*“MCERTS”* means the Environment Agency’s Monitoring Certification Scheme.

*“quarter”* means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

*“year”* means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- (a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- (b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content

# Schedule 4 – Amended Plan

Amended plan attached

