Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Stepan UK Limited

Stalybridge Organic Chemicals
Bridge Street
Stalybridge
Cheshire
SK15 1PH

Variation application number

EPR/BS3000ID/V002

Permit number

EPR/BS3000ID

Stalybridge Organic Chemicals
Permit number EPR/BS3000ID

Introductory note

This introductory note does not form a part of the notice

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

The following notice gives notice of the variation of environmental permits EPR/BS3000ID and EPR/FP3034LK referred to in the status logs below and the replacement of those permits with a consolidated environmental permit as EPR/BS3000ID. Permit EPR/FP3034LK will cease.

Changes introduced by this variation notice/statutory review

This variation has been issued to update some of the conditions following a statutory review of the permits in the industry sector for the production of large volume organic chemicals. The opportunity has also been taken to consolidate the original permit and subsequent variations.

The Industrial Emissions Directive (IED) came into force on 7th January 2014 with the requirement to implement all relevant Best Available Techniques (BAT) conclusions as described in the Commission Implementing Decision. The BAT conclusions for production of large volume organic chemicals were published on 07 December 2017 in the Official Journal of the European Union (L323) following a European Union wide review of BAT, implementing decision 2017/2117/EU of 21 November 2017.

Where appropriate, we also considered other relevant BAT Conclusions published prior to this date but not previously included in a permit review for the Installation:-
Common waste water and waste gas treatment/management systems in the chemical sector. Published 09 June 2016

The BAT Conclusions for this installation which apply from 7th December 2021 are:
Production of Large Volume Organic Chemicals:
BATc 2, 8-12, 14-19
Common waste water and waste gas treatment/management systems in the chemical sector:
BATc 1-5, 7-13, 15, 16, 19-23

The schedules specify the changes made to the permit.
Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Brief Description of the process

The site is located at Bridge Street, Stalybridge, east of Manchester at NGR 395783 398399. There are four processes operating on site; Batch Sulphonation, Continuous Sulphonation (3 units), Alkanolamide and Esterquat processes. The finished products are used in the manufacture of detergents.

The Batch Sulphonation process is a Section 4.1 A(1)(a)(iii) listed activity – producing organic compounds containing sulphur, such as sulphonic acids and sulphonates (typically ~17,000 tpa). The process involves reacting oleum or 98% sulphuric acid with aromatic compounds, primarily xylene, toluene and cumene, to produce aromatic sulphonic acids. Distillation, including under vacuum, is used to remove some solvent for reuse. The products can be neutralised to form sodium, potassium or ammonium salts of the sulphonic acids and a small amount of sodium salt is dried to produce a solid product. Solid toluene sulphonic acid is also produced by crystallisation.

The Continuous Sulphonation process involves a Section 4.2 A(1)(a)(i) – producing inorganic chemicals such as gases (oxides of sulphur) to generate sulphur trioxide from sulphur and a Section 4.1 A(1)(a)(xi) listed activity – producing organic chemicals such as surface-active agents by reacting the sulphur trioxide

with other raw materials (typically ~75,000 tpa). The process involves burning molten sulphur raw material in dry air to produce sulphur dioxide gas diluted in air. The sulphur dioxide is then catalytically converted to sulphur trioxide which in turn is reacted with organic feedstock in a falling film reactor to produce sulphonates. Certain products are unstable and need to be neutralised immediately. Off-gases are abated using electrostatic precipitation, venturi scrubbing and disentrainment before discharge from a 28m stack.

The Alkanolamide process involves a Section 4.1 A(1)(a)(xi) listed activity – producing organic chemicals such as surface-active agents - for reacting coconut methyl ester with mono- or di-ethanolamine with a sodium methoxide catalyst. No solvent is required. The methanol by-product is removed from the reaction by distillation. The finished products are a solid flake or viscous liquid. The main emission to air is methanol.

The Esterquat process involves a Section 4.1 A(1)(a)(xi) listed activity – producing organic chemicals such as surface-active agents – for a 2 stage process reacting a tallow fatty acid with triethanolamine followed by quaternisation with dimethylsulphate. By-product water is removed from the first step under nitrogen flow at 180-190 degC provided by a hot oil system. The final product is diluted with isopropanol. The main emission to air is isopropanol.

The Esterquat and Alkanolamide processes typically total ~25,000 tpa.

Raw Materials and Finished products are stored in bulk tanks or containers in suitably surfaced and bunded areas. The main emissions to air are oxides of sulphur from the Continuous Sulphonation process and particulates from the spray drier on the Batch Sulphonation process. Emissions to sewer (after carbon bed filtration and pH adjustment) consist of wash water from the Batch Sulphonation process plus boiler blowdown, cooling tower water and vacuum pump seal water. Waste water from the other processes is collected, pH adjusted, and sent off site for disposal. There are no direct emissions to controlled water.

Solid wastes are generated during solvent recovery by distillation. When the solvents are recovered by distillation sulphones are left behind as residues which solidify when cooled. These are transferred to drums or IBC containers and sent for incineration.

There is a 7.25MW main boiler and 5.7MW standby boiler for generating steam. The main fuel is gas with gas oil as a standby. There is also a 3MW gas fired hot oil heater associated with the Esterquat process.

The installation operates a bespoke Environmental Management System.

The Installation is located 80m from the Huddersfield Narrow Canal SSSI, within 10km of South Pennine Moors SPA and SAC and Rochdale Canal SAC. There are also 4 Local Wildlife Sites and 2 Ancient Woodlands within 2 km. The nearest residences are approximately 100m from the installation.

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

Status log of the permit of permit EPR/BS3000ID		
Description	**Date**	**Comments**
Application EPR/BS3000ID/A001	Duly made 31/08/06	Application Installation
Additional information request	20/03/07	Received 11/04/07
Additional information request	30/03/07	Received 24/04/07
Permit determined EPR/BS3000ID	25/06/07	Varied and consolidated permit issued in modern condition format.
Regulation 61 Notice dated 04/05/18 (Notice requiring information for statutory review of permit)	Response received 26/10/18	Original 10/08/18 date for response extended to 26/10/18
Request for further information dated 12/02/20	Response received 18/03/20	Request for clarification and further detail for Regulation 61 notice response.
EPR/BS3000ID/V002 (variation and consolidation, including with EPR/FP3034LK)	Environment Agency Initiated Variation	Statutory review of permit occasioned by LVOC BAT Conclusions published 07 December 2017

Status log of the permit of permit EPR/BS3000ID		
Description	**Date**	**Comments**
Variation determined EPR/BS3000ID/V002 (Billing Ref: CP3200BC)	11/08/20	Varied and consolidated permit issued in modern format

Status log of the permit of permit EPR/FP3034LK		
Description	**Date**	**Comments**
Application EPR/FP3034LK/A001	Duly made 31/08/06	Application Installation
Additional Information request	20/03/07	Received 11/04/07
Additional Information request	30/03/07	Received 24/04/07
Permit EPR/FP3034LK determined	25/06/07	
Application EPR/FP3034LK/V002	Duly made 21/04/20	Application to consolidate permit with EPR/BS3000ID
Variation determined EPR/BS3000ID/V002	11/08/20	Varied and consolidated permit issued in modern format

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulations 18 and 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates environmental permits

Permit number

EPR/BS3000ID
EPR/FP3034LK

Issued to

Stepan UK Limited ("the operator")

whose registered office is

Bridge House
Bridge Street
Stalybridge
Cheshire
SK15 1PH

company registration number 3264997

to operate an installation at

Stalybridge Organic Chemicals
Bridge Street
Stalybridge
Cheshire
SK15 1PH

to the extent set out in the schedules.

The notice shall take effect from 11/08/20

The number of the consolidated permit is EPR/BS3000ID

Name	Date
Anne Lloyd	**11/08/2020**

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 2016

Permit number

EPR/BS3000ID

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BS3000ID/V002 authorising,

Stepan UK Limited ("the operator"),

whose registered office is

Bridge House
Bridge Street
Stalybridge
Cheshire
SK15 1PH

company registration number 3264997

to operate an installation at

Stalybridge Organic Chemicals
Bridge Street
Stalybridge
Cheshire
SK15 1PH

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

Name	Date
Anne Lloyd	**11/08/2020**

Authorised on behalf of the Environment Agency

Conditions

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 green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

2.3.1 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.

2.3.2 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 or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, 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.

2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

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, S3.2 and S3.3.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 Where a substance is specified in schedule 3 table S3.2 or S3.3 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.

3.1.4 Total annual emissions from the emission point(s) set out in schedule 3 tables S3.1, S3.2 and S3.3 of a substance listed in schedule 3 table S3.4 shall not exceed the relevant limit in table S3.4.

3.1.5 Periodic monitoring shall be carried out at least once every 10 years for soil and yearly for groundwater (unless otherwise agreed in writing by the Environment Agency), unless such monitoring is based on a systematic appraisal of the risk of contamination.

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 which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;

(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 Odour

3.3.1 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.

3.3.2 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 which identifies and minimises the risks of pollution from odour;

(b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

3.4.1 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.

3.4.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

3.5.1 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) process monitoring specified in table S3.5;

3.5.2 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.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 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.

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.

(d) details of any contamination or decontamination of the site which has occurred.

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 In the event:

(a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—

(i) inform the Environment Agency,

(ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and

(iii) take the measures necessary to prevent further possible incidents or accidents;

(b) of a breach of any permit condition the operator must immediately—

(i) inform the Environment Agency, and

(ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

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.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

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.

Where the operator is a corporate body other than a registered company:

(a) any change in the operator's name or address; and

(b) any steps taken with a view to the dissolution of the operator.

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 "immediately", 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**
AR1	Section 4.1 A(1)(a)(iii) Producing organic chemicals such as organic compounds containing sulphur	Batch Sulphonation Process.	From transfer of raw materials to the process to dispatch to finished product storage.
AR2	Section 4.1 A(1)(a)(xi) Producing organic chemicals such as surface-active agents	Continuous Sulphonation Process	From transfer of raw materials to the process to dispatch to finished product storage.
AR3	Section 4.2 A(A)(a)(i) Producing inorganic chemicals such as gases (oxides of sulphur)	Production of sulphur trioxide from sulphur via sulphur dioxide.	From receipt of raw material sulphur to transfer of sulphur trioxide to continuous sulphonation process.
AR4	Section 4.1 A(1)(a)(xi) Producing organic chemicals such as surface-active agents	Alkanolamide Process	From transfer of raw materials to the process to dispatch to finished product storage.
AR5	Section 4.1 A(1)(a)(xi) Producing organic chemicals such as surface-active agents	Esterquat Process	From transfer of raw materials to the process to dispatch to finished product storage.
	Directly Associated Activity		
AR6	Abatement Plant	Electrostatic precipitators, Venturi scrubber and disentrainer serving the Continuous Sulphonation process	All abatement plant and associated equipment, including fans, alarms, controls and monitoring equipment
AR7	Solvent Distillation	Distillation of dirty solvents from the Batch Sulphonation process for reuse in process	From receipt of dirty solvent to transfer of clean solvent to storage or for reuse in the process
AR8	Materials Storage	Storage of raw materials, intermediates and finished products.	From receipt of materials into dedicated storage areas to transfer into process or off site.
AR9	Waste Storage	Storage of wastes in bulk storage tanks, containers and skips (including waste water collection from Continuous Sulphonation, Alkanolamide and Esterquat plants)	From receipt of waste in dedicated storage areas to removal off site.
AR10	Effluent Treatment	Treatment of effluent from Batch Sulphonation Process	From receipt from process to discharge to sewer
AR11	Steam Supply	1 x 7.25 MW main boiler and 1 x 5.7 MW standby boiler operating on gas with gas oil as standby fuel	Generation and transfer of steam to the processes including gas oil receipt and storage
AR12	Hot Oil Supply	3MW gas fired hot oil heater for Esterquat process	Includes transfer of hot oil to, and return from, process

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Applications EPR/BS3000ID/A001 and EPR/FP3034LK/A001	The response to sections 2.1 and 2.2 in the Application	31/08/06
Additional information requested 20/03/07	Response to questions 1 to 7	11/04/07
Variation EPR/BS3000ID/V002 Regulation 61 Notice – request for further information dated 04/05/18	Technical standards in relation to Best available techniques as described in BAT conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for Production of Large Volume Organic Chemicals BAT Conclusions Numbers 1-6,8-12,14-19 Common waste water and waste gas treatment/management systems in the chemical sector BAT Conclusions 1-16, 19-20, 22-23	26/10/18
Request for further detail and clarification of Regulation 61 Notice response dated 12/02/20	Response to all questions except to CWW 3/4 and updated site plan.	18/03/20
Variation and consolidation application EPR/FP3034LK/V002	Description of process operations (STEPAN 8&9). Review of Alkanolamide and Esterquat processes against the Manufacture of Organic Fine Chemicals BAT Reference Document STEPAN 10	31/03/20

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC10	The operator shall review the updated Controlled Waters Detailed Quantitative Risk Assessment, which assesses the potential impact of groundwater beneath the site on nearby surface water bodies, to ensure that it includes, but is not limited to: i) A consideration of the relevance of each of the hazardous pollutants from the Environmental Quality Standards Directive (EQSD) (2008/105/EC, as amended by 2013/39/EU). ii) Where relevant, a quantitative assessment of the potential risk to the River Tame bordering the north of the site. iii) An assessment of the potential risk to the Huddersfield Narrow canal, an SSSI approximately 80m to the south. iv) Data and conclusions from the original 2013 CWDQRA and groundwater and surface water monitoring since 2013 to reflect current site conditions. If any point is not fully addressed the operator shall submit an update to the Environment Agency.	30/11/20

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC11	The operator shall submit a report to the Environment Agency on the results of monitoring vents AA1, AA5, AA11 and AA13 for sulphur dioxide using method EN14791. If a reduction in the LVOC BAT 2 frequency of monthly to a minimum of annually is sought after 07/12/21 then the quantity of monitoring data considered and duration of the monitoring programme must be sufficient to demonstrate stability of the emission for which the reduction is sought during normal operation.	07/12/21
IC12	The operator shall submit a written proposal to the Environment Agency to undertake monitoring to investigate Volatile Organic Compound emissions using method EN12619 (unless agreed in writing with the Environment Agency) from emission points AA3-AA10 and AA14. The objective of the monitoring is to establish or confirm the nature (including concentration and mass) of any VOC emissions to air via these emissions points. The quantity of monitoring data considered must be justified and be sufficient so as to demonstrate that the results are representative of emissions during normal operation.	31/10/20
IC13	On receipt of written approval from the Environment Agency to the proposal under IC12, the operator shall carry out the agreed VOC monitoring and submit to the Environment Agency a report including, but not limited to, the results and an interpretation of the environmental significance of the results. If a reduction in the LVOC BAT 2 frequency of monthly to a minimum of annually is sought after 07/12/21 then the quantity of monitoring data considered and duration of the monitoring programme must be sufficient to demonstrate stability of the emission for which the reduction is sought during normal operation.	31/01/21
IC14	The operator shall submit, for approval by the Environment Agency, in relation to condition 1.1.1 of this permit, the scope and summary of an Environmental Management System covering all operations relating to activities regulated by this permit. The EMS should include, but not be limited to, the relevant features of Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector BAT Conclusion 1, particularly: a) the environmental impact of maintenance and cleaning activities (under (iv)g), b) waste management plan (under (x)). c) Inventories of waste water and waste gas streams (under (xii) to meet the requirements of BAT2. The summary should contain sufficient detail to demonstrate how all the BAT Conclusion 1 features have been considered. On receipt of written approval from the Environment Agency the operator shall implement the agreed Environmental Management System.	31/12/20 or other date as agreed in writing with the Environment Agency
IC15	The operator shall submit to the Environment Agency a report of methods to 'reduce the volume and/or pollutant load of waste water streams, to enhance the reuse of waste water within production process and to recover and reuse raw materials.' The report should include but not be limited to:- i) details of methods used to meet the CWW BAT7 objectives during the life of the permit.	31/01/21

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	ii) options for future improvement (e.g. feasibility of re-using waste water in the Batch Sulphonation process, reduction of COD in the Esterquats waste water) iii) consideration of the full inventory of waste water streams detailed in the response to IC14 (and CWW BAT2). iv) consideration of the priority order of techniques in CWW BAT10 as part of an integrated waste water management and treatment strategy.	
IC16	The operator shall submit to the Environment Agency the details of an integrated waste gas management and treatment strategy. This report should include but not be limited to:- i) consideration of options to further reduce emissions to air from both process optimisation and waste gas treatment techniques. ii) characterisation of emissions from bulk storage, both channelled and diffuse. iii) consideration of the full inventory of waste gas streams detailed in the response to IC14 (and CWW BAT2). iv) details of a plan for periodic monitoring of diffuse VOC emissions (CWW BAT5). v) consideration of the techniques for prevent or reduce diffuse VOC emissions described in CWW BAT19	31/01/21
IC17	The operator shall submit to the Environment Agency a report detailing options to reduce the particulate emissions from the spray drier (emission point AA2) to the range 5-20 mg/m^3 – target $5mg/m^3$ for fabric filter based systems. The report should include, but not be limited to: • Expected concentrations achievable with each option • Estimated timescales for implementation for each option • The preferred option (which may include cost considerations) On receipt of approval from the Environment Agency the approved option shall be implanted in line with the submitted timescales.	31/10/20

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Gas Oil (Boilers)	As defined in the Sulphur content of Liquid Fuels (England and Wales) Regulations 2007

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location **Note 6**	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
AA1 28m stack	Continuous Sulphonation process	Oxides of sulphur	50 mg/m^3 Note 1	Monthly Average	Continuous	EN 14181 Note 7
		Oxides of sulphur	50 mg/m^3	Hourly Average Note 2	6 Monthly Note 3	EN14791 Note 7 to 07/12/21 Note 3
AA2 Spray tower	Spray drier on Batch Sulphonation process	Particulates	No limit set Note 5	Hourly Average Note 2	Annually Note 5	BS EN 13284-1
AA3 Vent from vacuum system on reaction vessels R01 & R05	Batch Sulphonation process	Volatile Organic Compounds	No limit set	-	Monthly Note 4	EN12619 Note 4
AA4 Vent from vacuum system on reaction vessels R06 & R08	Batch Sulphonation process	Volatile Organic Compounds	No limit set	-	Monthly Note 4	EN12619 Note 4
AA5 Vents from reaction vessels R01, R02, R03, R05, R06 & R08 via condensers	Batch Sulphonation process	Volatile Organic Compounds	No limit set	-	Monthly Note 4	EN12619 Note 4
		Oxides of sulphur	No limit set	-	Monthly Note 3	EN14791 Note 3
AA6 Vent from reaction vessel R04 via condenser	Solvent distillation	Volatile Organic Compounds	No limit set	-	Monthly Note 4	EN12619 Note 4
AA7 Vents from crystalliser vessels R09 & R10 via condensers	Crystallisers on Batch Sulphonation process	Volatile Organic Compounds	No limit set	-	Monthly Note 4	EN12619 Note 4
AA8 Vents from neutraliser vessels N01 & N02 via condensers	Neutralisers on Batch Sulphonation	Volatile Organic Compounds	No limit set	-	Monthly Note 4	EN12619 Note 4
AA9 Vents from holding vessels R07, B01 & B02	Holding vessels on Batch Sulphonation process	Volatile Organic Compounds	No limit set	-	Monthly Note 4	EN12619 Note 4
AA10 Vents from solvent storage tanks (TOL1,	Bulk solvent storage (includes dirty	Volatile Organic Compounds	No limit set	-	Monthly Note 4	EN12619 Note 4

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location Note 6	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
TXL1, TXL2, TCUT, TTT2, TDTT, TDXT, TDCT, TRTT, TRXT, TRCT, SSTANK)	and recovered solvent)					
AA11 Vent from oleum storage tank (TOLE)	Bulk oleum storage	Oxides of sulphur	No limit set	-	Monthly Note 3	EN14791 Note 3
AA12 Vents from ammonia storage tank (TAMM)	Bulk ammonia storage	Ammonia	No limit set	-	Annually Note 7	BS EN 14791 Note 7
AA13 Vent from sulphur storage tank (TSBT) and header tank (TSHT)	Bulk molten sulphur storage	Hydrogen Sulphide	No limit set	-	Annually Note 7	BS EN 13649/ NIOSH 6013 Note 7
		Oxides of sulphur	No limit set	-	Monthly Note 3	EN14791 Note 3
AA14 Vent from effluent tanks (DC601, T601, T602, TE24, GHT)	Effluent treatment	Volatile Organic Compounds	No limit set	-	Monthly Note 4	EN12619 Note 4
AA15 Vents from boilers	Boilers	No parameters set	-	-	-	-
AA16 Various locations	Vents from other storage tanks	No parameters set	-	-	-	-
AB1 Vent from vacuum system on reaction vessel V170 via condenser	Alkanolamide process	Methanol	No limit set	-	Annually Note 7	BS EN 13649 Note 7
AB2 Vent from reaction vessel V400	Alkanolamide process	No parameters	No limit set	-	-	-
AB3 Vent from recovered methanol storage tank (TTT1)	Recovered methanol storage	Methanol	No limit set	-	Annually Note 7	BS EN 13649 Note 7
AB4 Vent from reaction vessel VAV2 via condenser and carbon beds	Esterquat process	Iso-propyl alcohol	No limit set	-	Annually Note 7	BS EN 12619 Note 7

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location Note 6	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
AB5 Vent from Esterquat storage tanks (TT5F & TT6F) via condenser and carbon bed	Esterquat storage	Iso-propyl alcohol	No limit set	-	Annually Note 7	BS EN 12619 Note 7
AB6 Vent on dimethyl sulphate storage tank (TTT8) via carbon bed	Dimethyl sulphate storage	Dimethyl sulphate	No limit set	-	Annually Note 7	BS EN 12619 Note 7
AB7 Vent from iso-propyl alcohol storage tank (TTT3)	Isopropyl alcohol storage	Iso-propyl alcohol	No limit set	-	Annually Note 7	BS EN 12619 Note 7
AB8 Vent on hot oil boiler	Hot oil boiler (Esterquat)	No parameters	No limit set	-	-	-
AB9 Various locations	Vents from other storage tanks	No parameters	No limit set	-	-	-

Note 1 Emission limit excludes start up and shut down periods.

Note 2 The reference period shall relate to a period of stable operation under normal conditions.

Note 3 EN14791 and monthly monitoring frequency to apply from 07/12/21. Monitoring frequency may be reduced to minimum of annually if stable emissions are demonstrated under IC11.

Note 4 EN12619 and monthly monitoring frequency to apply from 07/12/21. Monitoring frequency may be reduced to minimum of annually if stable emissions are demonstrated under IC13.

Note 5 Emission limit to be set following completion of IC17. EN13284-1 and monthly monitoring frequency to apply from 07/12/21. Monitoring frequency may be reduced to minimum of annually if stable emissions are demonstrated after the completion of the approved actions under IC17.

Note 6 Location as shown on Site Plan Attachment 3 to Response to request for further information received 18/03/20.

Note 7 Or otherwise agreed in writing with the Environment Agency.

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
-	-	-	-	-	-	-

Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
S1 on site plan submitted by the Operator	Batch Sulphonation process and drainage water, Continuous Sulphonation vacuum pump water and boiler blowdown	No parameters set	-	-	-	-
S2 on site plan submitted by the Operator	Cooling tower water from Continuous Sulphonation and Esterquat processes, Alkanolamide vacuum pump water	No parameters set	-	-	-	-
S3 on site plan submitted by the Operator	Cooling tower water from Batch Sulphonation process	No parameters set	-	-	-	-
S4 on site plan submitted by the Operator	Rain water from yard area on eastern side of site	No parameters set	-	-	-	-

Table S3.4 Annual limits		
Substance	Medium	Limit (including unit)
Methanol	Air	100kg
Total Class B Volatile Organic Compounds	Air	5 tonnes per year

Table S3.5 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
In between the first and second carbon beds after effluent tank GHT	Volatile Organic Compounds	Weekly Note 1	In House Method	-
In between first and second carbon beds after reaction vessel VAV2	Isopropanol	Weekly Note 1	In House Method	-
In between first and second carbon beds after Esterquat storage tanks TT5F & TT6F	Isopropanol	Weekly Note 1	In House Method	-

Note 1 Or other monitoring frequency agreed in writing with the Environment Agency.

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Oxides of sulphur (In house monitoring)	AA1	Quarterly	01/06/07
Oxides of sulphur (MCERTS monitoring)	AA1	Six-monthly	01/06/07
Total mass release of Class B Volatile Organic Compounds	AA3, AA4, AA5, AA6, AA7, AA8, AA9, AA10, AA14	Annually	01/01/07
Particulates	AA2	Annually	01/06/07
Ammonia	AA12	Annually	01/01/21
Hydrogen Sulphide	AA13	Annually	01/01/21
Methanol	AB1, AB3	Annually	01/01/21
Isopropanol	AB4, AB5, AB7	Annually	01/01/21
Dimethylsulphate	AB6	Annually	01/01/21

Table S4.2: Annual production/treatment	
Parameter	**Units**
Continuous Sulphonation Products	tonnes
Batch Sulphonation Products	tonnes
Alkanolamide Products	tonnes
Esterquat Products	tonnes

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Water usage	Annually	tonnes
Energy usage	Annually	MWh
Waste disposed/recovered	Annually	tonnes
Total sulphur used	Annually	tonnes
Total oleum or 98% Sulphuric Acid used	Annually	tonnes
Total solvent used	Annually	tonnes
Total raw material used	Annually	tonnes
Results of Groundwater Monitoring	Annually	-

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Emissions to Air	Form Air1 for quarterly reporting of monthly averages of oxides of sulphur or other form as agreed in writing by the Environment Agency	01/08/20
Emissions to Air	Form Air2 for six-monthly reporting of oxides of sulphur or other form as agreed in writing by the Environment Agency	01/08/20
Emissions to Air	Form Air3 for annual reporting of total mass release of Class B Volatile Organic Compounds or other form as agreed in writing by the Environment Agency	01/08/20
Emissions to Air	Form Air4 for annual monitoring of particulates, hydrogen sulphide and ammonia or other form as agreed in writing by the Environment Agency	01/08/20
Emissions to Air	Form Air5 for annual monitoring of methanol, isopropanol and dimethyl sulphate or other form as agreed in writing by the Environment Agency	01/08/20
Water usage	Form Waterusage1 or other form as agreed in writing by the Environment Agency	01/08/20
Energy usage and efficiency	Form Energy1 or other form as agreed in writing by the Environment Agency	01/08/20
Waste disposal and recovery	Form Waste1 or other form as agreed in writing by the Environment Agency	01/08/20
Other environmental performance indicators	Form Performance1 or other form as agreed in writing by the Environment Agency	01/08/20

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	

(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	
To be notified within 24 hours of detection	
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) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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.	

Name*	
Post	
Signature	
Date	

* 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.

“background concentration” means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“BAT-AELs” means BAT-associated emission levels, i.e. the emission levels associated with the best available techniques for emissions to air and/or water, as set out in

“Common waste water and waste gas treatment/management systems in the chemical sector BAT Conclusions or CWW” means Commission Implementing Decision (EU) 2016/902 of 30 May 2016 establishing Best Available Techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for Common Waste Water And Waste Gas Treatment/ Management Systems in the Chemical Sector

“diffuse emissions” means non-channelled emissions which can result from ‘area’ sources (e.g. tanks) or ‘point’ sources (e.g. pipe flanges).

“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 or background concentration limit.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“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 or background concentration limit.

“fugitive emissions” means diffuse emissions from ‘point’ sources.

“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.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

“Large Volume Organic Chemicals BAT Conclusions or LVOC” means The Commission Implementing Decision (EU) 2017/2117 of 21 November 2017 establishing Best Available Techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the Production of Large Volume Organic Chemicals.

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

“notify without delay” and “notified without delay” means that a telephone call can be used, whereas all other reports and notifications must be supplied in writing, either electronically or on paper.

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

“six-monthly” means a calendar half year ending 30 June and 31 December.

“Standby fuel” means alternative liquid fuels that are used in emergency situations when the gas fuel which is normally used, is not available.

“Total Organic Carbon” means Total Organic Carbon. In respect of releases to air this means the gaseous and vaporous organic substances, expressed as TOC.

“Volatile Organic Compounds” are as defined in Article 3(45) of Industrial Emissions Directive 2010/75/EU

“year” means a calendar year ending 31 December.

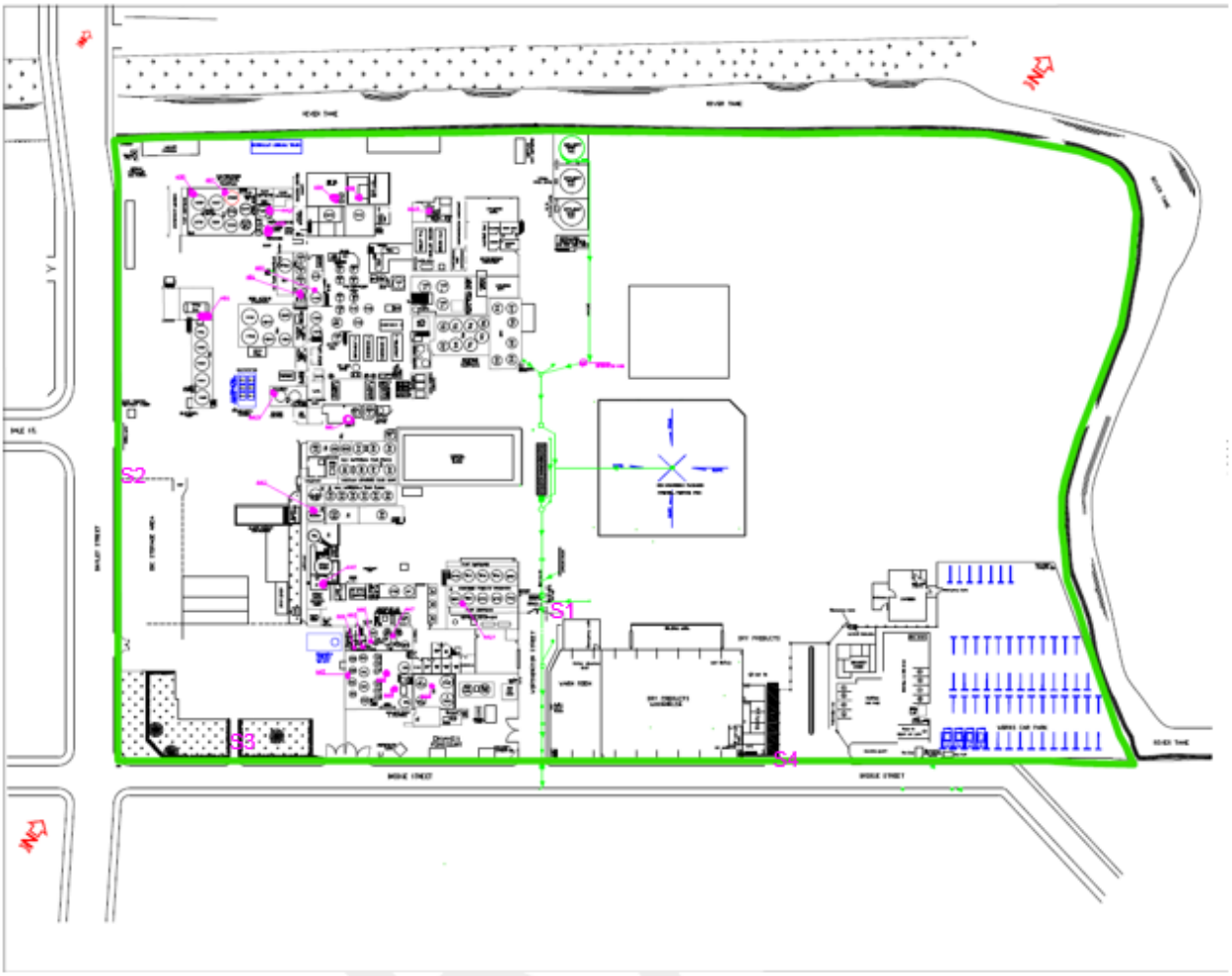
“yearly average” means the average over a period of one year of validated hourly averages obtained by continuous measurements.

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:

- 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
- 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 7 – Site plan



END OF PERMIT

Permit Number: BS3000ID **Operator: Stepan UK Limited**

Facility: Stalybridge Organic Chemicals **Form Number: Air1 01/08/20**

Reporting of emissions to air for the period from DD/MM/YYYY to DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Test Method
AA1	Oxides of sulphur	50 mg/m^3	Monthly Average	In House Method EN14181

Monthly Average Results							
Month	mg/m^3	Month	mg/m^3	Month	mg/m^3	Month	mg/m^3
January		April		July		October	
February		May		August		November	
March		June		September		December	
Operator's Comments:							

Signed ……. Date……..

(Authorised to sign as representative of Stepan UK Limited)

Permit Number: BS3000ID **Operator: Stepan UK Limited**

Facility: Stalybridge Organic Chemicals **Form Number: Air2 01/08/20**

Reporting of emissions to air for the period from DD/MM/YYYY to DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period[5]	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
AA1	Oxides of sulphur	50 mg/m^3	Hourly Average				

1. The results given are the mean hourly average, maximum and minimum values obtained during the reporting period, expressed in the same terms as the emission limit value. The limits are defined in Table S3.1 of the permit.
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.
5. The reference period shall relate to a period of stable operation under normal conditions, as defined in Table S3.1 of the permit.

Operator's comments:

Signed ……. Date……..

(Authorised to sign as representative of Stepan UK Limited)

Permit Number: BS3000ID **Operator: Stepan UK Limited**

Facility: Stalybridge Organic Chemicals **Form Number: Air3 01/08/20**

Reporting of emissions to air for the year YYYY

Emission Points	Substance / Parameter	Annual Mass Release Limit (tonnes)	Annual Mass Release Result (tonnes)	Test Method
AA3, AA4, AA5, AA6, AA7, AA8, AA9, AA10, AA14	Total Class B Volatile Organic Compounds	5		

Operator's comments:

Signed ……. Date……..

(Authorised to sign as representative of Stepan UK Limited)

Permit Number: BS3000ID **Operator: Stepan UK Limited**

Facility: Stalybridge Organic Chemicals **Form Number: Air4 01/08/20**

Reporting of emissions to air for the year YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period[5]	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
AA2	Particulates						
AA12	Ammonia						
AA13	Hydrogen Sulphide						

1. The result given is the average value 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.
5. The reference period shall relate to a period of stable operation under normal conditions, as defined in Table S3.1 of the permit.

Operator's comments:

Signed ……. Date……..
(Authorised to sign as representative of Stepan UK Limited)

Permit Number: BS3000ID **Operator: Stepan UK Limited**

Facility: Stalybridge Organic Chemicals **Form Number: Air5 01/08/20**

Reporting of emissions to air for the year YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period[5]	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
AB1	Methanol						
AB3	Methanol						
AB4	Isopropanol						
AB5	Isopropanol						
AB6	Dimethyl Sulphate						
AB7	Isopropanol						

1. The result given is the average value 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.
5. The reference period shall relate to a period of stable operation under normal conditions, as defined in Table S3.1 of the permit.

Operator's comments:

Signed ……. Date……..

(Authorised to sign as representative of Stepan UK Limited)

Permit Number: BS3000ID **Operator: Stepan UK Limited**

Facility: Stalybridge Organic Chemicals **Form Number: WaterUsage1 01/08/20**

Reporting of Water Usage for the year YYYY

Water Source	Usage (m^3/year)	Specific Usage (m^3/tonne product)
Mains water (Continuous Sulphonation)		
Mains water (Batch Sulphonation)		
Mains Water (Alkanolamide)		
Mains Water (Esterquat)		
TOTAL WATER USAGE		

Trends in Mains Water Usage		
Year	**Total Water Usage**	**Specific Usage (m^3/total tonne product)**

Operator's comments:

Signed ……. Date……..

(authorised to sign as representative of Operator)

Permit Number: BS3000ID **Operator: Stepan UK Limited**

Facility: Stalybridge Organic Chemicals **Form Number: Energy1 01/08/20**

Reporting of Energy Usage and Energy Efficiency for the year YYYY

Energy Source	Quantity Used	Primary Energy Usage (MWh)	Specific Usage (MWh/total tonne of product)	CO2 produced (tonnes)
Electricity (Sulphonation processes)*	MWh			
Electricity (Alkanolamide/Esterquat)*				
Natural gas (Sulphonation processes)**	t			
Natural gas (Alkanolamide/Esterquat)**				
Gas Oil	t			
Other (Specify)	**t**			
Total				

* Conversion factor for delivered electricity to primary energy = 2.4

** Conversion factor for natural gas to primary energy used = (GJ/t)

Operator's comments:

Signed …… Date……..

(authorised to sign as representative of Operator)

Permit Number: BS3000ID **Operator: Stepan UK Limited**

Facility: Stalybridge Organic Chemicals **Form Number: Performance1 01/08/20**

Reporting of Environmental Performance for the year YYYY

Parameter	Result	
Water usage per tonne of product		m^3/tonne
Energy usage per tonne of product		MWh/tonne
Total oleum or 98% Sulphuric Acid used		tonnes
Total sulphur used		tonnes
Total solvent used		tonnes
Total Raw Material		tonnes
Total production of Batch Sulphonation products		tonnes
Total production of Continuous Sulphonation products		tonnes
Total production of Alkanolamide products		tonnes
Total production of Esterqaut products		tonnes
Waste disposed and recovered per total tonne of product	D tonnes/tonne	R tonnes/tonne

Operator's comments:

Signed ……. Date…….. (authorised to sign as representative of Operator)

Permit Number: BS3000ID **Operator: Stepan UK Limited**

Facility: Stalybridge Organic Chemicals **Form Number: Waste1 01/08/20**

Reporting of Waste Disposal and Recovery for the year YYYY

Waste Description	Disposal		Recovery	
	D code/Route	Tonnes	R code/Route	Tonnes
Hazardous Wastes				
Total Hazardous Waste	----		----	
Non-Hazardous Waste				
Total Non-hazardous Waste	----		----	
TOTAL WASTE	----		----	

Trends in Waste Disposal and Recovery		
Year	Total Hazardous Waste (tonnes)	Total Non-hazardous Waste (tonnes)
2016	299.8 + 28.6 = 328.4	31.8 + 2.8 = 34.6
2017	236.8 + 14.2 = 251.0	14.4 + 3.6 = 18.0
2018	293.8 + 20 = 313.8	21.2 + 2.0 = 23.2
2019		

Operator's comments:

Signed ……. Date…….. (authorised to sign as representative of Operator)