Application to the relevant Hazardous Substances Authority (Planning Authority)

The Planning (Hazardous Substances) Act 1990 - Section 7(1)

England - The Planning (Hazardous Substances) Regulations 2015 (Regulation 5)

Wales - The Planning (Hazardous Substances) (Wales) Regulations 2015 (Regulation 5)

Application for Hazardous Substances Consent

THIS IS AN APPLICATION TO EXPAND THE PRODUCTION CAPACITY OF A PRODUCT ALREADY MANUFACTURED ON SITE, IN A CONTROLLED AND REGULATED ENVIRONMENT, BY REPURPOSING AN EXISTING PRODUCTION PLANT. THIS WILL INCREASE THE EXISTING SITE INVENTORY OF A FLAMMABLE LIQUID, SUBSTANCES THAT ARE CLASSIFIED AS HAZARDOUS TO THE AQUATIC ENVIRONMENT AND A POTENTIALLY SELF-REACTIVE SUBSTANCE ALREADY STORED AND HANDLED ON SITE.

1

Applicant	SYNGENTA LTD
Address	PO BOX A38
	LEEDS ROAD
	HUDDERSFIELD
Post code	HD2 1FF
Telephone number	01484 554535
Person in control of the land to which the application relates, if different to above	AS ABOVE
Address	
Post code	
Telephone number	

2

Address or other location details of application site	PO BOX A38
	LEEDS ROAD,
	HUDDERSFIELD
Post code	HD2 1FF
OS grid ref	SE1618SE

3 Hazardous substance(s) covered by the application

(a) List named substances falling within Part 2 of Schedule 1 to the Regulations first, then list any substances falling within the categories in Part 1 of that Schedule; finally list substances falling within the description in Part 3.

(b) Substances falling within Parts 1 or 3 of Schedule 1 to the Regulations may be listed under the relevant category or description or named specifically. Where a substance falls within Part 1 and 2 list under Part 2 only; where a substance falls within more than one category in Part 1 list under the category which has the lowest controlled quantity. Where a substance falling within Part 1 or 2 also falls within Part 3 list under the Part which has the lowest controlled quantity. The "controlled quantity" means the quantity specified for that substance in column 2 of Parts 1, 2 or 3 of Schedule 1 to the Regulations.

Note: The addition rule as set out in the schedule to the regulations should be applied to determine whether consent is required for substances below the Controlled Quantity. Examples are given in the associated planning guidance. The Planning (Hazardous Substances) (Amendment) Regulations 2017 are relevant to the use of the addition rule in England only. The Planning (Hazardous Substances) (Amendment) Regulations 2015 are relevant to Q* (addition rule) for LPG, and relevant to notes about ammonium nitrate.

Table A

Name, or relevant category or description of substance	*Part number in Schedule 1 to the Regulations, and entry number if Part 2, category if Part 1, identity if Part 3*	*Do you have a current PHS consent in respect of this substance? (Yes/No)*	*If "yes", state quantity for which consent granted in tonnes*	*Maximum quantity proposed to be present in tonnes* Note 1
Site				
Agrochemical Intermediate	Part 1: E1 Hazardous to the Aquatic Environment	Yes Note 2	16.5 Note 2, 3	72.5 Note 3
Inorganic Intermediate	Part 1: E1 Hazardous to the Aquatic Environment Part 1: P6a Self-reactive substances Note 8	Yes Note 3	41 Note 6	42.5 Note 7
Catalyst TFB-Bisquinine	Part 1: E1 Hazardous to the Aquatic Environment	Yes Note 2	6 Note 2,4	47 Note 4
Finished Product SYN547407	Part 1: E1 Hazardous to the Aquatic Environment	Yes Note 2	20 Note 2,5	98 Note 5
Acetonitrile	Part 1: P5c Flammable Liquids	Yes Note 9	171 Note 9, 10	771 Note10
0843 Plant				
Spent Amberlite Resin	Part 1: E1 Hazardous to the Aquatic Environment Part 1: P5c Flammable Liquids	**Yes** Note 2, 9	**4700** Note 9	26.5 Note10

NOTES

1. The quantity provided for Spent Amberlite Resin is the maximum proposed quantity to be handled in the vessels, process equipment and buildings on the P0843 Plant covered by this application.

   The quantity provided for the other named substances is the maximum proposed quantity of these specific named substances to be handled in the vessels, process equipment and buildings on the site.

2. The P0843 Plant does not have a specific consent in place for the Agrochemical Intermediate, Catalyst TFB Bisquinine, Finished Product SYN547407 or Spent Amberlite Resin.

   However, the following PHS consent currently exists for the site: Deemed Hazardous Substance Consent 99/50/93008/WO – This includes a generic consent for 4700 te of substances Dangerous for the Environment B10 (i and ii) (now been superseded by Part 1: E1 and E2 Hazardous to the Aquatic Environment)

There will be an overall increase in the site inventory of substances classified as Hazardous to the Aquatic Environment as a result of this application; the inventory of these substances will be in addition to this PHS consent.

An application for Hazardous Substance Consent for these materials is being made rather than a variation to the deemed Hazardous Substance Consent following discussions with Kirklees Council.

The site has a pending Hazardous Substances Consent Application, which was submitted in 2015, to streamline all of the legacy hazardous substances consents for the site and to align these to each relevant operational area. This will aggregate the above Hazardous Substance Consent with all others for the site and includes consents to store and handle substances classified as Dangerous for the Environment (B10(i) 2.5 te and B10(ii) 1 te) on the P0843 Plant. The new consent for the named substances Agrochemical Intermediate, Catalyst TFB Bisquinine or Finished Product SYN547407 will be in addition to this consent.

3. The maximum amount of the Agrochemical Intermediate to be stored and handled on site will be 72.5 te. This will be distributed across two specific locations:
    - 16.5 Te on the P0868 Plant
    - And 56 Te on the P0843 Plant

    The site already has a current PHS consent to handle and use 16.5 Te of the Agrochemical Intermediate on the P0868 Plant. (Please refer to Application no. 2012/92342)

4. The maximum amount of Catalyst TFB-Bisquinine to be stored and handled on site will be 47 te. This will be distributed across two specific locations:
    - 6 Te on the P0868 Plant
    - And 41 Te on the P0843 Plant

    The site already has a current PHS consent to handle and use 6 Te of Catalyst TFB-Bisquinine on the P0868 Plant. (Please refer to Application no. 2012/92342)

5. The maximum amount of the Finished Product SYN547407 to be stored and handled on site will be 98 te. This will be distributed across two specific locations:
    - 20 Te on the P0868 Plant
    - And 78 Te on the P0843 Plant

    The site already has a current PHS consent to handle and use 16.5 Te of the Finished Product SYN547407 on the P0868 Plant. (Please refer to Application no. 2012/92342)

6. The site already has a PHS consent in place to handle and store 41 te of the Inorganic Intermediate across two specific locations (See Application Number: 2021/51/93088/WO).
    - 4 Te on the P0868 Plant
    - And 37 Te on the P0843 Plant

Another PHS consent also currently exists for the site: Deemed Hazardous Substance Consent 99/50/93008/WO – This includes a generic consent for 4700 te of substances Dangerous for the Environment B10 (i and ii) (now been superseded by Part 1: E1 and E2 Hazardous to the Aquatic Environment)

There will be an overall increase in the site inventory of substances classified as Hazardous to the Aquatic Environment as a result of this application; the inventory of the Inorganic Intermediate will be in addition to the aforementioned PHS consents.

An application for Hazardous Substance Consent for the Inorganic Intermediate is being made rather than a variation to the deemed Hazardous Substance Consent following discussions with Kirklees Council.

The site has a pending Hazardous Substances Consent Application, which was submitted in 2015, to streamline all of the legacy hazardous substances consents for the site and to align these to each relevant operational area. This will aggregate the above Hazardous Substance Consent with all others for the site and includes consents to store and handle substances classified as Dangerous for the Environment (B10(i) 2.5 te and B10(ii) 1 te) on the P0843 Plant. The new consent for the named substance Inorganic Intermediate will be in addition to this consent.

7. The maximum amount of the Inorganic Intermediate to be stored and handled on site will be 42.5 te. This will be distributed across two specific locations:
    - 4 Te on the P0868 Plant
    - And 38.5 Te on the P0843 Plant

8. The Inorganic Intermediate raw material does not directly fall into the generic hazard categories for Self-Reactive Substances P6a / 6b or P7 Pyrophoric solids found in Schedule 1, Part 1 and it isn't named in Schedule 1, Part 2 of the Planning (Hazardous Substances) Regulations 2015. This is because the material has not been assigned H Phrases H240 (Heating may cause explosion), H241 (Heating may cause a fire or explosion), H242 (heating may cause a fire) or H250 (Catches fire spontaneously if exposed to air) according to the Safety Data Sheet (SDS) provided by the supplier. (A copy of this SDS is supplied in the appendices.)

However, the SDS states "that the crystallised product is capable of explosion when heated and Schedule 1, Part 3 of the Planning (Hazardous Substances) Regulations 2015 states that substances used in the process may also fall under these regulations:

- "Where it is reasonable to foresee that a substance falling within Part 1 or Part 2 ("HS") may be generated during loss of control of the processes, including storage activities in any installation within an establishment, any substance which is used in that process ("S")."
- And "The amount of S which it is believed may generate (on its own or in combination with other substances used in the relevant process) an amount equal to or exceeding the controlled quantity of the HS in question."

This application is a request to handle up to a maximum of 1.5 te of the Inorganic Intermediate in new process vessels which will be constructed on the P0843 South Plant. The Inorganic Intermediate will be handled as a 25 to 52% solution of the active ingredient. Therefore, the worst-case total inventory of the active ingredient in the process will be 0.78 te.

In addition, the site is already consented to store and handle the Inorganic in the following other areas on site:

- Two existing purpose-built buildings on the P0843 Plant;
    - A dedicated warm room storage facility that can store up to a maximum of 36.6 Te of the Inorganic Intermediate solution in drums each containing between 25 to 52% of the active ingredient. Therefore, the worst-case inventory of the active ingredient in the form of crystals will be 19.03 Te and this will be restricted to 114.4 kg per drum. This is above the controlled quantity of 10 Te for the generic category **P6a Self-reactive substances** and mixtures and organic peroxides and below the higher controlled quantity of 50 Te for generic category **P6b Self-reactive substances** and mixtures and organic peroxides and for **P7 Pyrophoric solids**.

    - And a dedicated charging room containing a charging system for the Inorganic Intermediate drums. Where the material is discharged from drums via a lance

through the top of the drum, whilst located in a dedicated flow booth 37/800, using a dedicated transfer pump 30/101. After transfer the drums are washed with water and the wash material is transferred to the reactor to also wash the transfer line. The transfer line is then blown clear using nitrogen. A maximum of 5 of the above drums can be stored in this area at any one time.

- In a segregated warm room storage located on the south of the P0868 plant for use in the manufacturing process.

Modelling carried out in house has shown that the handling and storage of this material;

- Will not introduce a major accident hazard scenario that is capable of causing a domino effect or becoming the initiator of a major accident elsewhere on site.

- And that the safety risk associated with this change, does not extend offsite; as such the proposed changes should not result in a safety hazard change for the purposes of providing land use planning advice and there should be no changes to the consultation zones for the site.

9. The site recently obtained PHS consents to store and handle a number of flammable liquids (DMF weak effluent, Acetic acid effluent, Toluene and TBA or T-Butanol) in bulk storage tanks on the P0843 Plant. (See Application 2021/51/93088/WO.)

   As well as obtaining PHS consent to store and handle 171 Te of Acetonitrile on the P0868 Plant. (Please refer to Application no. 2012/92342)

   However, the Deemed Hazardous Substance Consent 99/50/93008/WO (last variation Application Number: 2011/52/90099/WO) for the site does not include consents for any named flammable liquids (except for Acetone and Acrylonitrile). Or, for the generic hazard classification Flammable B6 as none of these substances exceeded the controlled quantities under Schedule 1, Part A named substances or Part B Generic Categories of The Planning (Hazardous Substances) Regulations 1992, either as individual substances or due to the addition rule. Refer to Hazardous Substances Consent.

   Under the Planning (Hazardous Substances) Regulations 2015 Acetonitrile does not fall under Schedule 1, Part 2 Named Hazardous Substances and the maximum quantities to be handled do not exceed the controlled quantity under Schedule 1, Part 1 for the generic hazard category P5a Flammable Liquids (5000 Te).

   Acetonitrile will be handled in small quantities each less than 2% of the controlled quantity for flammable materials. Process Risk Assessments carried out by Syngenta have concluded that the proposed changes will not result in a safety hazard change for the purposes of providing land use planning advice and there should be no changes to the consultation zones for the site. The existing Major Accident Hazard (MAH) scenarios associated with the current manufacture of PP890 on the 0843 South Plant (due to the handling of flammable substances) which can lead to Vapour Cloud Explosions (VCE) will be replaced by MAHs associated with the new Plinazolin technology process that have similar offsite impacts. Worst case these new MAHs will generate sufficient pressure to cause glass breakage to the windows of the residential houses located to the East of site on Nettleton Road, which are on the boundary of the installation, potentially leading to disabling injuries.

10. The maximum amount of the Acetonitrile to be stored and handled on site will be 771 te. This will be distributed across two specific locations:
    - 171 Te on the P0868 Plant
    - And 600 Te on the P0843 Plant

    26.5 Te of Spent Amberlite Resin will also be stored on the P0843 Flammable compound.

    The site already has a current PHS consent to handle and use 171 Te of Acetonitrile on the P0868 Plant. (Please refer to Application no. 2012/92342)

Where in Table A consent is sought for any substance below the relevant Control Quantity, give the reason in the box below including the calculation for each relevant type of hazard (health, physical and/or environmental) with the q/Q fractions that add to greater than or equal to 1.

N/A

4 Manner in which substance(s) are to be kept and used

For each substance, category or description of substance, covered by the application, provide the following information, referring to the substance location plan where appropriate.

"vessel" means any container designed or adapted to contain hazardous substances which is affixed to the land, and includes a container which forms part of plant or machinery which is affixed to the land but does not include a pipeline.

"Buried" or "Mounded" vessel includes a vessel which is only partially buried or partially mounded.

"moveable container" means any container designed or adapted to contain hazardous substances other than a vessel.

(a) Tick one box below to show whether the substance(s) will be present for storage only **or** will be stored and involved in a manufacturing, treatment or other industrial process:

Table B

Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Storage only*	*Stored and involved in an industrial process*
Agrochemical Intermediate Part 1: E1 Hazardous to the Aquatic Environment		✓
Inorganic Intermediate Part 1: E1 Hazardous to the Aquatic Environment Part 1: P6a Self-reactive substances Note 1		✓
Catalyst TFB-Bisquinine Part 1: E1 Hazardous to the Aquatic Environment		✓
Finished product SYN547407 (AI – Active Ingredient)		✓

Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Storage only*	*Stored and involved in an industrial process*
Part 1: E1 Hazardous to the Aquatic Environment		
Acetonitrile Part 1: P5c Flammable Liquids		✓

NOTES

1. The inorganic intermediate raw material does not directly fall into the generic hazard categories for Self-Reactive Substances P6a / 6b, or P7 Pyrophoric solids found in Schedule 1, Part 1 and it isn't named in Schedule 1, Part 2 of the Planning (Hazardous Substances) Regulations 2015. This is because the material has not been assigned H Phrases H240 (Heating may cause explosion), H241 (Heating may cause a fire or explosion), H242 (heating may cause a fire) or H250 (Catches fire spontaneously if exposed to air) according to the Safety Data Sheet (SDS) provided by the supplier. (A copy of this SDS is provided in the appendices.)

   However, the SDS states "that the crystallised product is capable of explosion when heated" and Schedule 1, Part 3 of the Planning (Hazardous Substances) Regulations 2015 states that substances used in the process may also fall under these regulations:
   - "Where it is reasonable to foresee that a substance falling within Part 1 or Part 2 ("HS") may be generated during loss of control of the processes, including storage activities in any installation within an establishment, any substance which is used in that process ("S")."
   - And "The amount of S which it is believed may generate (on its own or in combination with other substances used in the relevant process) an amount equal to or exceeding the controlled quantity of the HS in question."

   The site will store up to a maximum of 41 Te of inorganic intermediate in drums each containing between 25 to 52% of the active ingredient inorganic intermediate and handle up to 1.5 Te of material in the P0843 South manufacturing process. Therefore, the worst-case site inventory of the active ingredient inorganic intermediate in crystals will be 22.1 Te and this will be restricted to 114.4 kg per drum. This is above the controlled quantity of 10 Te for the generic category **P6a Self-reactive substances** and mixtures and organic peroxides and below the higher controlled quantity of 50 Te for generic category **P6b Self-reactive substances** and mixtures and organic peroxides and for **P7 Pyrophoric solids**.

(b) For each vessel to be used for **storing** the substance(s) give the following information:

Table C (i)

*Vessel No**	*Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3*	*Installed above ground† (Yes/No)*	*Buried (Yes/No)*	*Mounded (Yes/No)*	*Maximum capacity (cubic metres)*	*Highest vessel design temperature °C*	*Highest vessel design pressure barg*
40/966 Note 1	Acetonitrile **Part 1: P5c Flammable Liquids**	Yes– with full secondary containment	No	No	77	100	56 mbarg / -6 mbarg
40/596 Note 2	Acetonitrile **Part 1: P5c Flammable Liquids**	Yes– with full secondary containment	No	No	77	100	56 mbarg / -6 mbarg
40/966 Note 1	Waste acetonitrile distillate (up to 90% acetonitrile and up to 0.1% finished product SYN547407) **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P5c Flammable Liquids**	Yes– with full secondary containment	No	No	77	100	56 mbarg / -6 mbarg
40/596 Note 2	Waste acetonitrile distillate (up to 90% acetonitrile and up to 0.1% finished product SYN547407) **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P5c Flammable Liquids**	Yes– with full secondary containment	No	No	77	100	56 mbarg / -6 mbarg
41/896 Note 3	Recycled water (up to 90% water, up to 10% Acetonitrile and up to 0.1% finished product SYN547407) **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P5c Flammable Liquids**	Yes– with full secondary containment	No	No	77	150	56 mbarg / -6 mbarg
41/790 Note 4	Recycled water (up to 90% water, up to 10% Acetonitrile and up to 0.1% finished product SYN547407) **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P5c Flammable Liquids**	Yes– with full secondary containment	No	No	77	100	56 mbarg / -6 mbarg
44/950	Waste Aqueous (rainwater, floor washings and scrubber liquors contains up to 3% acetonitrile) **Part 1: P5c Flammable Liquids**	Yes– with full secondary containment	No	No	17	100	56 mbarg / -6 mbarg
41/896 Note 3	Filtrates & Mother Liquors Storage (up to 40% acetonitrile and up to 2% finished product SYN547407) **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P5c Flammable Liquids**	Yes– with full secondary containment	No	No	77	150	56 mbarg / -6 mbarg

*Vessel No**	*Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3*	*Installed above ground† (Yes/No)*	*Buried (Yes/No)*	*Mounded (Yes/No)*	*Maximum capacity (cubic metres)*	*Highest vessel design temperature °C*	*Highest vessel design pressure barg*
41/790 Note 4	Filtrates & Mother Liquors Storage (up to 40% acetonitrile and up to 2% finished product SYN547407) **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P5c Flammable Liquids**	Yes– with full secondary containment	No	No	77	100	56 mbarg / -6 mbarg

* identify by reference to substance location plan

† if "Yes", specify whether or not it will be provided with full secondary containment

NOTES

* The vessel numbers provided correspond to the vessel numbers used in Appendix 4-0: 0843 Overview Substance Location Plans Ground Floor and storage areas showing the location of the repurposed Bulk Storage Tanks.

1. Bulk Storage Tank 40/966 can be used to store both Acetonitrile and Waste Acetonitrile Distillate, both chemicals are compatible and the inadvertent mixing up of these chemicals will not result in any safety issues.
2. Bulk Storage Tank 40/596 can be used to store Waste Acetonitrile Distillate and Acetonitrile, both chemicals are compatible and the inadvertent mixing up of these chemicals will not result in any safety issues.
3. Bulk Storage Tank 41/896 can be used to store Recycled water and Filtrates & Mother Liquors Storage. Both mixtures are sent offsite for recovery and then reused, are compatible and the inadvertent mixing up of these chemicals will not result in any safety issues.
4. Bulk Storage Tank 41/790 can be used to store Filtrates & Mother Liquors Storage and Recycled Water. Both mixtures are sent offsite for recovery and then reused, are compatible and the inadvertent mixing up of these chemicals will not result in any safety issues.

(c) For each substance, category, or description of substance, state the largest size (capacity in cubic metres) of any **moveable** container(s) to be used for that substance, category, or description of substances:

Table C (ii)

Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Storage area on site**	*Maximum capacity (cubic metres) of individual moveable containers*
Inorganic Intermediate 50% solution **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P6a Self-reactive substances**	**P0843 Plant** - Dedicated building containing a warm room located on west of plant Note 1 ,3	0.22 (drum)
Inorganic Intermediate 50% solution **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P6a Self-reactive substances**	**P0843 Plant** - Building containing a dedicated transfer pump located on west of plant Note 1,3	0.22 (drum)
Inorganic Intermediate 50% solution **Part 1: E1 Hazardous to the Aquatic Environment**	**P0868 Plant** - Segregated warm room storage located on south of plant Note 2	0.22 (drum)
Agrochemical Intermediate **Part 1: E1 Hazardous to the Aquatic Environment**	**P0843 Plant** - Warehouse Note 1	1 (FIBC)
Agrochemical Intermediate **Part 1: E1 Hazardous to the Aquatic Environment**	**P0868 Plant** -Warehouse Note 2	1 (FIBC)
Catalyst TFB-Bisquinine Part 1: E1 Hazardous to the Aquatic Environment	**P0843 Plant** - Warehouse Note 1	1 (FIBC)
Catalyst TFB-Bisquinine Part 1: E1 Hazardous to the Aquatic Environment	**P0868 Plant** – Warehouse Note 2	0.22 (Drum)**

Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Storage area on site**	*Maximum capacity (cubic metres) of individual moveable containers*
Finished product SYN547407 **Part 1: E1 Hazardous to the Aquatic Environment**	**P0843 Plant** - Warehouse Note 1	1 (FIBC)
Finished product SYN547407 **Part 1: E1 Hazardous to the Aquatic Environment**	**P0868 Plant** - Warehouse Note 2	1 (FIBC)
Heel solution - up to 90% acetonitrile, up to 6% finished product SYN547407 and up to 4% water **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P5c Flammable Liquids**	**P0843 Plant** - Flammable Compound Note 1	1 (IBC)
Spent Amberlite Resin **Part 1: E1 Hazardous to the Aquatic Environment** **Part 1: P5c Flammable Liquids**	**P0843 Plant** - Flammable Compound Note 1	0.22 (drum))

* identify by reference to substance location plan

Notes:

1.The area descriptions provided correspond to those used in Appendix 4-0: 0843 Overview Substance Location Plans Ground Floor showing the location of the new Warehouse and the existing Flammable Compound.
2. The area descriptions provided correspond to those used in Appendix 4-0: 0868 Overview Substance Location Plans Ground Floor and storage areas. Note that the site already has PHS consents for this activity. (Please refer to Application no. 2012/92342)
3. Note that the site already has PHS consents. (See Application Number: 2021/51/93088/WO).

(d) Where a substance, category or description of substance is to be used in a **manufacturing, treatment or other industrial process(es)**, give a general description of the process(es), describe the major items of plant which will contain the substance(s); and state the maximum quantity (in tonnes) which is liable to be present in the major items of the plant, and the maximum temperature (°C) and pressure (bar absolute) at which the substance, category or description of substance is liable to be present:

Table D

Substance including Part no. in Schedule 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Description of process(es)*	*Major items of plant**	*Max quantity (tonnes)*	*Max operating temp (°C)*	*Max operating pressure (barg)*
Inorganic Intermediate Note 1	**Inorganic Intermediate Charging** A liquid amine reagent is discharged from drums into a reactor from a drum charging station located inside a dedicated building.	37/800 Flow booth and liquid handling system	0.5	35	0.01
		30/101 Transfer pump and pipework	0.05	35	3
Agrochemical Intermediate	**Hopper** Contain sufficient material for 3 charges	36/140 Agrochemical Intermediate Hopper	23	Ambient	0.035
Catalyst TFB-Bisquinine	**Catalyst and Resin Hopper** Contain sufficient material for 1charge	36/120 Catalyst and Resin Hopper	4	Ambient	0.035
Agrochemical Intermediate	**Reaction stage** A solid agrichemical intermediate is discharged from FIBCs into a reactor containing acetonitrile at below 0°C. An ion exchange resin, organic catalyst, water, and amine reagent are also charged to the reactor. The exact order and rate of addition of materials may be varied. The reaction is carried out over a period of hours. A charge of hydrochloric acid (aqueous) is made and the reaction mixture is warmed. The reaction mixture is then passed through a filter to remove the ion-exchange resin, followed by a wash with acetonitrile.	27/900 Reactor	8.04	<80	2.8
Acetonitrile			36.2		
Inorganic Intermediate			1.13		
Catalyst TFB-Bisquinine			0.436		
SYN547507			3.63		
Acetonitrile	**Resin Filtration stage** The reaction mixture is passed through a filter to remove the ion-exchange resin, followed by a wash with acetonitrile. **Spent Amberlite Resin is transferred into drums.**	27/940 Screening Filter:	0.9	<50	2.8

Substance including Part no. in Schedule 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Description of process(es)*	*Major items of plant**	*Max quantity (tonnes)*	*Max operating temp (°C)*	*Max operating pressure (barg)*
SYN547507	**Distillation (Evaporation) Stage**	28/830 Still	3.63	<120	0.02
Acetonitrile	The reaction mixture is distilled under vacuum to remove acetonitrile and water. The batch is then transferred to a crystalliser and the still is vented to a plant scrubber. **Acetonitrile distillate is fed directly into the bulk storage tank 40/596**		43		
SYN547507	**Crystallisation Stage**	28/800 Crystallisers	3.63	<80	2.8
Acetonitrile	Water is charged to the reaction mixture, and a small charge of hydrochloric acid (aqueous solution) may be made to adjust th pH. Crystallisation seed may be charged and the mixture is cooled, and water is charged. The reaction mixture is cooled further and transferred to a filter. Acetonitrile and water are charged and transferred to the filter as a wash. More than one wash may be used.		18		
SYN547507		28/810 Seed pots	0.03	<80	2.8
Acetonitrile			0.12		
SYN547507	**Filtration & Drying Stage**	29/970 Filter	3.63	<120	2.8
Acetonitrile	The slurry mixture is received and mother liquors blown with nitrogen to a waste storage vessel via a receiver. Wash is received from the crystalliser and transferred to a receiver. The filter cake is warmed and dried under vacuum prior to discharge to FIBCs		18		
SYN547507		29/980 Dryer	3.63	<120	2.8
Acetonitrile	and transferred to a receiver. The filter cake is warmed and dried under vacuum prior to discharge to FIBCs		1		
Acetonitrile		29/972 Pump tank: Filtrates	1	<120	2.8

Substance including Part no. in Schedule 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Description of process(es)*	*Major items of plant**	*Max quantity (tonnes)*	*Max operating temp (°C)*	*Max operating pressure (barg)*
Acetonitrile		29/98 Vacuum pump inlet receiver	0.1	<90	2.8
SYN547507	**Product silo 36/420**	36/42 Product silo:	20	Ambient	0.035

NOTES

* identify by reference to substance location plan - The vessel numbers provided correspond to those used in Appendix 4-0: 0843 Overview Substance Location Plans Ground Floor, Appendix 4-1: 0843 Overview Substance Location Plans First Floor and Appendix 4-2: 0843 Overview Substance Location Plans Second Floor showing the location of the new process equipment in P0843 South Plant.

1. The site already has PHS consent (See Application Number: 2021/51/93088/WO).

5 Additional Information

(a) If you have an existing PHS consent(s) as referred to in Table A, **attach a copy of each consent** to this application.

N/A

(b) **List the maps or plans** or any explanatory scale drawings of plant/buildings submitted with this application (**as a minimum submit a site map and a substance location plan** – see **Notes** below).

- Appendix 1, A complete set of vessel parameters for the new vessels and the additional moveable containers for the 0843 Plant.
- Appendix 2, Ordinance Survey Grid Plan
- Appendix 3, Plant Location Plans (One for the P0843 Plant and the other for the P0868 Plant).

- Appendix 4-0 0843 Overview Substance Location Plans Ground Floor showing the location of the flammable compound, New Warehouse and new process equipment located on the ground floor of the P0843 South Plant
- It should be noted that a Planning Application (reference number:2022-93766) has been made for the New Warehouse Building, New HAFB Store Room Building and New HAFB Charging Room Building
- Appendix 4-1 0843 Overview Substance Location Plans First Floor showing the location of the new process equipment located on the first floor of the P0843 South Plant
- Appendix 4-2 0843 Overview Substance Location Plans Second Floor showing the location of the new process equipment located on the second floor of the P0843 South Plant
- Appendix 4-0: 0868 Overview Substance Location Plans Ground Floor and storage areas showing the location of the segregated warm room storage located on the south of the P0868 Plant

(c) Provide a brief overview description of the **main activities** carried out or proposed to be carried out on the land to which the application relates.

This application covers the expansion of the production capacity of product, which is already successfully manufactured on site, by repurposing the existing P0843 Plant. Increasing the inventory of a flammable liquid (acetonitrile), substances that are classified as hazardous to the aquatic environment and a potentially self-reactive substance by 803 Te. This involves three activities:

- Installing a new finished product and raw material warehouse
- Changing the use of a number of bulk storage tanks
- And installing new process equipment

(d) Provide details of how each relevant substance is proposed to be transported to and from the land to which the application relates, for example the size and frequency of vehicle deliveries, the size or maximum flow rate of pipeline imports/exports.

Substance including Part number in Schedule 1 to the Regulations, and entry number if Part 2, category if Part 1, identity if Part 3	*How, and other details such as frequency and quantity, transported to and from the land to which the application relates*	
	Transported to site	*Transported from site*

This information has been supplied in Appendix 1 under the heading " Additional Information"

(e) Provide details of the vicinity of the land to which the application relates, where such details are relevant to the risks or consequences of a major accident (relevant details include numbers of people in neighbouring developments that could be affected by a major accident and details about environmentally sensitive receptors).

The extent of the potential consequences to human health for the Major Accident Hazards that have been identified for the new bulk storage tanks and the storage and handling of the Inorganic Intermediate, Agrochemical Intermediate, Catalyst TFB Bisquinine, Finished Product SYN547407 and Spent Amberlite Resin are localised. Modelling carried out in-house indicates that the risk to human health associated with this change does not extend offsite; as such the proposed changes should not result in a safety hazard change for the purposes of providing land use planning advice and there should be no changes to the consultation zones for the site.

Process Risk Assessments carried out by Syngenta have concluded that the introduction of Acetonitrile on the 0843 South Plant will not result in a safety hazard change for the purposes of providing land use planning advice and there should be no changes to the consultation zones for the site. The existing Major Accident Hazard (MAH) scenarios associated with the current manufacture of PP890 on the 0843 South Plant (due to the handling of flammable substances) which can lead to Vapour Cloud Explosions (VCE) will be replaced by MAHs associated with the new Plinazolin technology process that have similar offsite impacts. Worst case these new MAHs will generate sufficient pressure to cause glass breakage to the windows of the residential houses located to the East of site on Nettleton Road, which are on the boundary of the installation, potentially leading to disabling injuries.

The Inorganic Intermediate, Agrochemical Intermediate, Catalyst TFB Bisquinine, Finished Product SYN547407 and Spent Amberlite Resin are classified as Hazardous to the Aquatic Environment. The CDOIF Environmental Risk Assessment for the site has been revised as part of the Regulation 10 Notification that is being submitted to the EA and HSE Competent Authorities for this change. Chemicals will not be introduced to any of the vessels, process equipment or storage locations covered by this application until this Hazardous Substances Consent application has been granted and the Regulation 10 Notification has been assessed by the Competent Authority. Potential environmentally sensitive receptors for the major accident hazards associated with the storage and handling of the inorganic intermediate are the local waterways (River Calder and Colne.) This will be confirmed the CDOIF Environmental Risk Assessment.

(f) Provide a brief overview of the measures taken or proposed to be taken to limit the consequences of a major accident.

A range of prevention and mitigation measures will be implemented to limit the consequences of the major accident hazards that have already been described. These include:

- Various risk assessments have been completed to ensure that adequate control measures are implemented to reduce the risks to an acceptable level.
- Relevant codes, standards and established good practice for the design, installation, operation and maintenance and inspection of process equipment will be implemented so far is reasonably practicable
- Storage tanks, process vessels, pipework and process control and safety instrumented systems control systems are designed and maintained to prevent major accidents
- Arrangements are in place for regular safety inspections of plant and processes
    - Operational procedures are in place to ensure that equipment is operated within safe working limits and that materials are stored and handled in accordance with safety data sheets and other information provided by suppliers etc
- Competency management system to ensure that all employees have the necessary skills and competencies to do their job and deal with any emergencies that arise
- Incompatible materials are segregated and stored separately
- Containment systems are in place to minimise the loss of spilled material to the environment
    - The plant and its immediate surroundings have concrete hardstanding surfaces, rendering the risk of loss to ground / ground water low.
    - The new bulk storage tanks and buildings will have secondary containment and the contents of bunds / sumps will be sampled and analysed prior to being discharged to the sites Effluent Treatment Plant. Where levels of impurities are unacceptable the contents will be sent offsite for treatment / disposal.
- Elimination of potential ignition sources to protect against the ignition of flammable material
- Automatic / manual fire alarm system and gas alarm system connected to a central monitoring station, which is manned 24 / 7.
- Emergency response systems and procedures are in place
    - Onsite emergency response team
    - The site has an internal emergency plan and an external emergency plan (prepared by West Yorkshire Fire and Rescue Service) to deal with major accident hazards

Full details of these measures will be provided in the Regulation 10 Notification that is being submitted to the Competent Authority for this change.

(g) Give any further information which you consider to be relevant to the determination of this application. (For example, details about any exempted established substances on site or a copy of any notification about 'other establishments'/exempted established substances if already submitted).

(Will print as blank space if no further information provided)

I/We hereby apply for hazardous substances consent in accordance with the proposals described in the application

Signed ..... Redacted ..... Safety Manager

on behalf of .....

(Pete Waddington, Site Manager Syngenta Huddersfield)

Date .....

To be accompanied by the notices and certificates required by regulations 6 and 7 of the Regulations.

Notes

"**Site map**" is a map, reproduced from, or based on, an Ordnance Survey map with a scale of not less than 1:10,000, which identifies the land to which the application relates and shows National Grid lines and reference numbers.

"**Substance location plan**" is a plan of the land to which the application relates, drawn to a scale of not less than 1:2,500, which identifies-

(a) any area of land intended to be used for the storage of the substance;
(b) where the substance is to be used in a manufacturing, treatment or other industrial process, the location of the major items of plant involved in that process in which the substance will be present; and
(c) access points to and from the land.