

Notice of variation with introductory note

Environmental Permitting (England & Wales) Regulations 2010

St Mellons Semiconductor Plant

IQE (Europe) Ltd
Cypress Drive
St Mellons
Cardiff
South Wales
CF3 0EG

Variation application number

EPR/KP3235SS/V002

Permit number

EPR/KP3235SS

St Mellons Semiconductor Plant

Permit number EPR/KP3235SS

Introductory note

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

The following notice, which is issued in accordance with regulation 20 and Part 1 of Schedule 5 of the Environmental Permitting (England and Wales) Regulations S.I.2010 No. 675 (the Regulations), gives notice of the variation of an environmental permit to operate a regulated facility.

This variation notice permits the production of gallium nitride (GaN) based semiconductor structures using ammonia as a raw material through the process of Metal Organic Vapour Phase Epitaxy (MOVPE). Ammonia (anhydrous ammonia) is the source of nitrogen used to form the GaN semiconductor alloys. This process technique is the same as that already in use at the site to produce gallium arsenide and indium phosphide based alloys, the difference being that the arsine and phosphine are replaced by ammonia as a raw material for the production of alloys.

The ammonia will be delivered, stored and used on site via standard gas cylinders. The maximum amount of ammonia on site at any time will be 0.16 tonnes. The ammonia will be stored in a dedicated bunker, during operations it will be piped to the point of use, through stainless steel lines, fittings and valves. The exhaust from the system will be fed into the existing site exhaust stack.

The key technical standards and control measures that will be used as a result of the risk analysis will correspond to those documented in the existing permit KP3235SS.

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

Status Log of permit		
Detail	Date	Response Date
Application KP3235SS	Duly made	
	01/04/05	
Permit determined KP3235SS	13/07/05	
Variation application EPR/KP3235SS/V002	21/10/2011	
duly made (PAS WP3436FG)		
Variation issued EPR/KP3235SS/V002	09/12/2011	

End of Introductory note

Notice of variation

Environmental Permitting (England and Wales) Regulations 2010

Permit number
EPR/KP3235SS

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

IQE (Europe) Ltd ("the operator")

whose registered office is

Pascal Close
St Mellons
Cardiff
South Glamorgan
CF3 0LW

company registration number **2107558**

to operate a regulated facility at

Cyprus Drive
St Mellons
Cardiff
South Wales
CF3 0EG

to the extent set out in the schedules.

The notice shall take effect from 09/12/2011

Name	Date
M Bischer	09/12/11

Authorised on behalf of the Environment Agency

Schedule 1 – conditions to be deleted

None.

Schedule 2 – conditions to be amended

Table 1.1.1 of the permit EPR/KP3235SS as it relates to condition 1.1.1. shall be amended to:

Table 1.1.1

Activity listed in Schedule 1 of the PPC Regulations	Description of specified activity	Limits of specified activity
Section 4.2 A(1)(d) – ‘Any manufacturing activity, other than the application of a glaze or vitreous enamel, involving the use of any of the following elements or compound of those elements or the recovery of any compound of the following elements :- Antimony; Arsenic; Gallium; Indium; Lead; Palladium; Platinum; Selenium; Tellurium; Thallium, Where the activity may result into the release into the air of any of those elements or compounds, or the release into water of any substance listed in paragraph 13 of Part 2 to this Schedule.’	Manufacturing via Metal Organic Vapour Phase Epitaxy of semiconductor crystal wafer substrates.	Manufacturing activities undertaken within the Fab 2 building, and associated activities undertaken within the Fab 1 building.
Associated activity		
Effluent Treatment Plant and associated infrastructure	Effluent neutralisation plant serving scrubber units for A1 and A3 releases to air.	Discharge from scrubbing units only.
Receipt of raw materials	Receipt of gases, substrates and other raw materials used in the process	Installation.
Waste handling and storage	Storage of liquid and solid wastes arising from the process	Dedicated external storage area marked on plan 3433/49/B as ‘Storage Area’ from Application EPR/KP3235SS and plan showing high risk material external storage locations in Appendix 1 of Application EPR/KP3235SS/V002.

Table 2.1.1 of the permit EPR/KP3235SS as it relates to condition 2.1.1 shall be amended to:

Table 2.1.1: Operating techniques		
Description	Parts	Date Received
Application	<u>1. Proposed activities and abatement</u> Sections B2.1 and B2.2 of Application KP3235SS.	04/01/05
	<u>2. Management techniques</u> Section B2.3 of Application KP3235SS.	04/01/05
	<u>3. Monitoring</u> Section B2.10 of Application KP3235SS.	04/01/05
Application	All documentation submitted in support of Application KP3235SS/V002.	22/09/11

Table 2.2.2 of the permit EPR/KP3235SS as it relates to condition 2.2.1.3 shall be amended to:

Table 2.2.2 : Emission limits to air and monitoring				
Emission point reference	Parameter	Limit (including Reference Period)¹	Monitoring frequency	Monitoring method
A3	Total arsenic and phosphorus compounds [expressed as arsenic]	0.42mg/m ³ , (one-hour average)	Bi-annually	As specified in Agency Technical Guidance Note M2 or equivalent as agreed with the Agency.
A3	Ammonia	9 mg/m ³	Bi-annually	As specified in Agency Guidance Note M2 or equivalent as agreed with the Agency.

Table S2 of the permit EPR/KP3235SS as it relates to condition 4.1.2 shall be amended to:

Table S2: Reporting of monitoring data				
Parameter	Emission point	Reporting period	Period begins	Results reported
Total arsenic and phosphorus compounds [expressed as arsenic]	A3	Bi-annually	01/06/05	Concentration, as mg/Nm ³
Ammonia	A3	Bi-annually	01/01/12	Concentration, as mg/ Nm ³
Total annual raw ammonia usage, tonnes		Annual	01/01/12	Ammonia used as a raw material by installation
Water usage, m ³		Annual	01/01/05	Water used by installation
Energy usage, kWh		Annual	01/01/05	Energy used by installation
Waste disposal, tonnes		Annual	01/01/05	Waste arisings from installation sent for disposal

Schedule 3 – conditions to be added

None.

Schedule 4 – updated site plan

None.