



Licence Number	L4498/1986/15
Licensee	Hexion Australia Pty Ltd
ACN	009 111 264
Registered business address	Hexion Australia Pty Ltd 210 Moore Road DARDANUP WEST WA 6236
Date of amendment	23 June 2016
Prescribed Premises	Category 31: Chemical manufacturing
Premises	Hexion Australia Pty Ltd Lot 7 on Diagram 64331, Moore Road DARDANUP WEST WA 6236

Amendment

The Department of Environment Regulation (DER) has amended the above licence in accordance with section 59 of the *Environmental Protection Act 1986* as set out in this Amendment Notice.

Jonathan Bailes

Manager Licensing (Process Industries)

an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Amendment Notice

This Notice is issued under section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

Amendment Description

Licence L4498/1986/15 was issued on 24 September 2015 and expires on 24 September 2029.

Hexion Australia Pty Ltd (Hexion) manufactures a range of chemicals for use in the timber and alumina industries. The products manufactured consist primarily of liquid urea-formaldehyde (UF) resin, liquid melamine-urea-formaldehyde (MUF) resin, formaldehyde (FA), and hydroxylated polyacrylamide (HX-PAM) emulsion. Formaldehyde emissions are generated as part of the manufacturing process and are directed through a 21-metre high stack. Condition 12 of the licence requires Hexion to undertake air quality monitoring using US EPA Method 18 (Method 18) for the determination of Formaldehyde.

DER received an application for a licence amendment on 29 April 2016 requesting a change to the method used for testing formaldehyde.

Decision

Method 18 is used to measure Volatile Organic Compounds (VOCs) using gas chromatography and specifies four different sampling options: direct interface, dilution interface, adsorption tube, or Tedlar bag sampling. The use of this method at the premises is problematic as formaldehyde entrains in moisture droplets in the gas stream and can behave as a particulate, resulting in it not being captured by the sampling.

An alternative method is available (USEPA Method 0011- Sampling for Selected Aldehyde and Ketone Emissions from Stationary Sources), which uses isokinetic sampling. However, the use of this method at the premises is also problematic due to the following:

- The premises stack is located in an intrinsically safe location; the sampling equipment utilised to perform this method is not intrinsically safe.
- The current sampling location is not constructed to the standard required for isokinetic sampling and is inaccessible for isokinetic sampling equipment.
 - Significant engineering works would be required to ensure that the sampling location was accessible for isokinetic sampling equipment.
 - The stack diameter is 160mm; a stack diameter of less than 200mm is generally not acceptable for isokinetic sampling as the sampling probes disturb the gas flow in small cross-sectional areas.
 - The current stack sample ports are 25mm in diameter; a diameter of 100mm is required for isokinetic sampling.

To overcome the above issues, Hexion currently uses a modified version of USEPA Method TO-5 - Method for the Determination of Aldehydes and Ketones in Ambient Air using High-Performance Liquid Chromatography (HPLC). Although this method is specified for ambient air monitoring, it has been modified to allow representative samples to be taken from stationary sources. This modification is accredited by the National Association of Testing Authorities, Australia (NATA).

The Delegated Officer has considered the environmental risk of changing the testing method for measuring formaldehyde emissions and considers that the modified USEPA Method TO-5 is acceptable providing that the modifications to allow it to be used for stack sampling are accredited by NATA.

Amendment History

Instrument	Issued	Amendment
L4498/1986/15	23/06/2016	Amendment Notice 1 Amendment to change the method used for monitoring formaldehyde emissions to air.

Amendment

- Condition 12 of the licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

- The licensee shall undertake the monitoring in Table 4 according to the specifications in that table.*

Table 4: Stack Monitoring Sites

Source	Frequency	Analyte	Method
Air Emission Stack	Annual	Formaldehyde	US EPA Method 18 <u>USEPA Method TO-5¹</u>

Note 1: NATA accredited modified version permitted