

Compliance Assessment Report CAR_NRW0037863

Permit being assessed: PP3238LX.

For: Barry Thermosets Plant EA/EPR/PP3238LX/V002, held by Hexion UK Limited

At: Barry Thermosets Plant Sully Moors Road , Penarth, Vale of Glamorgan, CF64 5YU.

Type of assessment carried out: Audit, Reason: Routine.

On 27/11/2020 between 10:00 and 13:00.

Parts of permit assessed: Hazardous Waste Assessment and Storage

NRW Lead Officer: Andi Kemp.

Report sent to: Ian Beatty, EHS Manager on 15/04/2021.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
A1 - Specified by permit	Assessed (A)	
B4 - Infrastructure - Containment of stored materials	Assessed (A)	
C2 - General Management - Management system and operating procedures	Assessed (A)	
G2 - Monitoring and Records, Maintenance and Reporting - Records of activity, site diary/journal/events	Assessed (A)	

Result types are explained in more detail in the 'Important Information' section below.

Total number of non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

No action required.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

Compliance Assessment Report: Hexion Speciality Chemicals, Barry Plant – EPR/PP3238LX 15th April 2021

Purpose of Compliance Assessment

This CAR1 covers the assessment of hazardous waste management at the Barry site, by way of an audit on site on the 27th November 2020, an email list of points raised by AK sent on the 1st December 2020 and a follow up response from IB on the 4th December 2020. In addition, certain key documents were provided on the day and taken away for assessment. This audit report covers the site visit and subsequent assessment.

There are several permit conditions relating to waste and waste management: 1.1.1 – general environmental management system requirement; 1.5.1 – avoidance, recovery and disposal of wastes, including a 4 yearly waste review; 2.3.1 Operating Techniques, waste storage and handling; 4.2.1 reporting of performance parameters does not include waste per tonne of product to be reported, this will likely be included in the next permit review. There were also two improvement conditions relating to waste management procedures and reduction of waste, IC8 and IC9 – both completed and signed off on 25th March 2012.

Hazardous waste poses particular risks to staff and the environment and the procedures and legal instruments for its management (applicable to any hazardous waste producer / holder / receiving site) are covered in the Hazardous Waste Regulations 2005 and the Lists Of Waste Regulations 2005. These regulations outline what hazardous waste is and how to classify and assess hazardous waste for the 15 hazardous properties (and the presence of persistent organic pollutants POPs) and provide the detail on what information should be included on a hazardous waste consignment note. The assessment of hazardous waste is supplemented by guidance document WM3, which links into the Classification, Labelling and Packaging EU Regulation supporting the Globally Harmonised System for waste management and hazardous properties.

The last 4 yearly waste review (May 2018) was assessed in the CAR1 issued in March 2019, this demonstrated that Hexion do proactively seek waste reduction and raw material reuse initiatives. The waste storage area was last assessed in CAR1 issued January 2017 from an inspection earlier that month. The storage area was examined again during this November 2020 audit.

Ahead of the audit, the site visit date was agreed, a documentation list and agenda / hazardous waste audit template was sent by AK on the 28th September 2020, along with the Packaging Guidance document. Another email was sent by AK the day before the audit to ensure certain information was available during the audit.

The scope of the audit is described in the audit template and covers the following main areas: consignment note check; waste totals; classification & assessment; revised HP14; Industry Packaging guidance; waste storage on site; application of the waste hierarchy.

What was not looked at during this audit was whether every shipment of waste was accompanied by a consignment note – this can only be done by intercepting waste shipments on a random basis during transit or as they arrive at a treatment site – a piece of waste regulatory / enforcement work that NRW does jointly with the Police periodically.

In attendance for the audit were Ian Beatty EHS Manager and Kieran Richards Environment Technician and

Andi Kemp was the NRW auditor.

Hexion are a registered hazardous waste producer, number: CAC261.

Consignment Notes

Several random consignment notes were selected from the main file where Hexion store these, which is complemented by waste data and procedures on the site computerised system.

In general, the consignment notes were of the prescribed layout and by and large contained the relevant information required. For example, consignment note number: CAC261/Q027C – describes a shipment of various wastes from Hexion, carried by Chemtech Waste (carrier registration: CB/DU202389), being taken to a permitted waste treatment site, Envirolsol Ltd. north of Birmingham. The note contained the S.I.C. code, registered producers and carrier's numbers, drivers name, vehicle registration, times of departure and signature of the consignor. What couldn't be checked with this note was when the shipment arrived and was accepted at the receiving site, i.e. Consignees certificate – this is usually emailed back to the waste producer and / or a quarterly return sent to the waste producer. The SIC code for the process giving rise to the waste is recorded as 24.13 manufacture of fluorides, fluorine, HF. This does not seem correct.

Recommendation 1 Hexion 15th April 2021: *Ensure that Hexion's waste management procedures include tracking that the quarterly returns are being submitted by the consignee, that they match the outgoing waste documentation, that Part E of the consignment note is filled in correctly and that any delays between departure and arrival of the waste are explained.*

With a complete consignment note, it can be verified (at least as being recorded by someone) that the waste has arrived at the permitted site and any unexplained delay between departure from waste producer until arrival at waste consignee can be challenged.

Other consignment notes raised several queries, which the operator provided a response to. NRW questions and parts of the response (italics) are listed below:

1) Explain why cable waste was assigned a non-existent EWC code: 160202; same for the code used for compactor waste: 200321. I assume some admin. based staff are drawing off an incorrect list and are a step away from knowledge or use of WM3. Depending on what Hexion uncovers, an action or recommendation may be included in the audit report.

*Compactor waste was a typo within the waste log spreadsheet for 2019. I have attached a scanned copy of the **consignment note** which clearly shows the EWC code as 20 03 01 mixed municipal waste. Cable Waste was again a typing error, it was classified as 16 02 16 in the 2018 Waste Log. (attached a **screenshot of waste log**).*

2) Operator and regulator to think about the use of EWC code: 080415 for resole distillate, instead of a Chapter 7 waste code. There may be a solid argument to use the Chapter 8 code.

08 04 15 – This EWC code was chosen as the best representative for the acetic distillate waste. As it is an aqueous liquid waste containing hazardous substances. And the waste has derived from the production of resin, which can be classed as an adhesive.*

NRW can verify and accept the response to point 1 above. After consideration, NRW accepts the use of several Chapter 8 codes in preference to Chapter 7 Organic Chemicals. Hexion, whilst manufacturing organic chemicals, are not making basic or fine organic chemicals, dyes, plant protection products or

pharmaceuticals, rather they are manufacturing resins and other finished products. However, consideration should be given to the application of Chapter 0702, to complement the use of the other Chapter 7 codes Hexion have used or, consider using Chapter 8 for any Chapter 7 codes, to complement the use here of the existing Chapter 8 codes.

It can be appropriate to use codes from different chapters, but usually there is the main source of production Chapters (01 – 12, 17 – 20), then chapters 13, 14, 15 for specific substances and lastly Chapter 16. A look at the waste log has demonstrated that Hexion use the appropriate codes for more general wastes, such as municipal collected fractions, fluorescent light bulbs, packaging, WEEE etc. Chapter 19 wastes should only be used for wastes coming out of waste treatment, transfer and storage sites. So, for example, scrap metal from demolition on site, would be coded under Chapter 17 when leaving Hexion en route to a waste management facility. Then when separated and bulked up, when leaving the waste facility, it will be coded Chapter 19 on its way to the recovery site.

NRW doesn't understand the use of code 050103 tank bottom sludges as this source chapter is for petroleum refining, gas purification and pyrolysis of coal. A Chapter 7 or 8 code would be more appropriate, e.g. sludges containing hazardous substances, or even, as a last resort, a Chapter 16 code.

Recommendation 2 Hexion 15th April 2021: *Hexion is to consider the above three paragraphs and build any relevant procedural details into the developing waste classification and assessment work instruction.*

Some consignment notes were not particularly clear – the relevant information must be legible. There may be some confusion between an actual consignment note and other documentation, that may be relevant to a waste, such as Tradebe Material Assessment Questionnaires, other job related documents and non hazardous Duty Of Care waste transfer notes, e.g. the notes used for the transfer of compactor waste – these are not consignment notes.

A consignment relating to distillate tank solids described on consignment note: CAC261/00007 (1st August 2019), uses code 080410 (see comments about Chapters 7 and 8 use) and is assessed as exhibiting HP11 Mutagenic (see Tradebe MAQ), but the hazardous property is missing off the consignment note. This means people handling the waste may not know what hazard it presents and how best to handle the waste. Further, described in more detail below, NRW cannot verify how the waste was assessed for HP11 and other properties discounted – see comments below about procedure for classification.

Consignment note 2020/462, for hazardous waste packaging (150110), 12th August 2019, does not contain the hazardous properties on the consignment note. A search for the receiving site (NCG-MDL UK, Manchester) on the EA Public Register brought up a registered waste operation and the carrier check revealed a current registered waste carrier. The SIC code is down as 20140 – is this correct?

Consignment note CAC261/36553, 17th July 2019 shows an extant waste operation permitted facility and a waste installation permit. The registered waste carrier is also on the public register. The SIC given as 20130 refers to the manufacture of paints and varnishes etc. This is not correct and Hexion should seek a more accurate SIC.

Consignment note CAC261/00007, 1st August 2019, shows waste going to a permitted waste installation in Newport and transported by Hazrem Limited, however a public register search reveal no entry for Hazrem Ltd. and the carrier number given on the consignment note (CBDU5020 or 5070 – it isn't clear). The consignment is for mirror entry 080410, the non-hazardous code, so why has this been transported on a hazardous waste consignment note?

Action 1 Hexion 15th April 2021: *The operator is to look through the comments in the paragraphs assessing individual consignment notes (e.g. incorrect SIC codes, carriers not appearing on PR, missing hazardous properties etc.) and provide a response to NRW. Due: 31st May 2021*

So the public register search of the consignment notes for the registered carrier details and receiving permitted site, is something that should be a routine due diligence audit topic for Hexion to check:

- the carrier is actually still a registered carrier
- the receiving site is actually permitted
- permitted sites should ensure they give evidence (e.g. permit and variation, suspensions, revocations) of the types of waste they can take

Both the EA and NRW have public register search facilities, but often contact is needed with the carrier and receiving site direct, especially to check waste codes.

Classification & Assessment

A look at the waste codes used and hazardous properties assigned has revealed that a variety of wastes are shipped on various consignment notes including: phenolic resin sample bottle waste, pig line drainings, R10 filter waste, tank scale and water, contaminated lab waste, phenolic resin waste, lithium hydroxide. A variety of hazardous properties have been ascribed to the wastes, e.g. phenolic resin HP6 acute toxicity.

What did not become apparent during this audit is the detail of Hexion's waste assessment and classification procedure. So, at this stage the hazardous property codes are taken at face value. For example, the solid phenolic resin waste is given acute toxicity HP6; the concentration of phenol / formaldehyde in the waste is stated as less than 25%. The threshold for exhibiting HP6 depends on the route of exposure: via skin, swallowed or inhaled. The Hexion SDS for the resole distillate, which contains phenol and formaldehyde and is assumed to have the same or similar hazard statements as other phenolic resin and P/F wastes, declares (amongst others) several acute toxicity hazardous statements: H301, H311, H331 (phenol) and H301, H311 and H330 (formaldehyde) – the concentration threshold the waste has to reach varies. H301 equal to or above 5% (additive with other substances exhibiting H301); H311 equal to or above 15% (additive); H330 equal to or above 0.1% Cat. 1 or at or above 0.5% cat. 2 (additive); H331 cat. 3 equal to or above 3.5% (additive). The Hexion distillate SDS gives the concentration of phenol as <3% and formaldehyde as <1.9%. So, with just P/F waste distillate, it will be at least hazardous by HP6 toxic and the specific hazard statement.

Depending on the listing and accompanying notes in Table 3 of the CLP, other properties may have to be assessed to prove their presence or absence and other data may be needed – this depends on what asterisks are placed next to the hazard statement code. For example, in Table 3 CLP, phenol H301, H311 and H331 are marked with a “*”, indicating that this is the minimum classification given to that hazard and the actual classification may be higher.

A consignment note for distillate was not seen and as mentioned above the actual methodology of hazardous waste assessment used by Hexion as a procedure or SWI (based on WM3) had not been devised at the time of the audit. On the Hexion SDS H411 Aquatic Toxicity is listed in section three for phenol, but this hazard statement is missing from the entry in Table 3 CLP. However, certain manufactures' MSDSs for concentrated solutions do contain aquatic toxicity hazard statements for both formaldehyde (37%) and

various phenols. CLP should always be used first, unless there is evidence (possibly indicated by the asterisks in the classification column of Table 3 CLP or a REACH compliant MSDS) that other hazardous statements should be assessed for.

Following Appendix C14 in WM3 and noting that only phenol (formaldehyde has been discounted from exhibiting H411 because there is no H411 in the classification column of CLP or in the Hexion SDS for formaldehyde) is present with a hazard statement code of H411, following the HP14 assessment and especially equation 3, this distillate does exhibit HP14.

Cut off value for individual substances with H411 = 1% - the waste has up to 3% phenol, so exceeding cut off and used in the calculation. If greater than this the concentration of (only H411 in this case) H411 is multiplied by the modifier given (in this case 10 for H411). So, $3\% \times 10 = 30\%$. This is above the equal to or greater than 25% threshold for exhibiting HP14 ecotoxic.

Action 2 Hexion 15th April 2021: *Hexion should build the application of WM3 into their waste assessment and classification written procedures and record how each waste stream (that is not an absolute non-hazardous waste) has been classified, then assessed for hazardous properties. The procedure should be robust enough that administration staff involved in consignment notes, know what waste code to use, the codes having been assigned by competent people (as per the procedure) carrying out classification and assessment.* **Due: 30th September 2021.**

The action above, if assessed as acceptable, will enable a separate, more thorough assessment of Hexion's wastes, to ensure they have all the relevant hazardous properties assigned to them. This will be a future regulatory topic and may involve selecting three hazardous wastes and assessing how Hexion have arrived at a particular waste code and identified all relevant hazardous properties.

Recommendation 2 Hexion 15th April 2021: NRW and Hexion should plan to carry out an assessment of hazardous waste assessment after Action 1 has been completed and ideally before the end of March 2022.

Other Elements of the Audit

This broad section covers some of the remaining parts of the audit scope: waste totals, waste hierarchy, HP14, waste packaging guidance.

Further work will need to be done by NRW liaising with Hexion to verify waste totals recorded on the hazardous waste database (EA and NRW) and any totals reported as part of the permit and that these tally with actual consignment notes raised. A brief look at waste totals to England and Wales for 2019, did not reveal any glaring anomalies except no Chapter 8 codes appeared listed on the database, whilst clearly there are consignment notes for 2019 that include these (and other) codes.

The next four yearly waste review is due in 2022, but an internal waste audit from January 2020 was submitted. NRW offers the following comments:

- hazardous waste consignment notes must be kept for at least 3 years, not 2
- consignee returns and other details were checked during the audit and recorded as correct
- issues with the SIC codes used
- action issued to check recent consignment notes

Generally, Hexion are aware of the waste hierarchy and seek to prevent, reduce, re-use and recover waste.

Inevitably, depending on economics and technology, some waste is generated.

The packaging guidance has been well received and the site mention they have found this useful and it is preventing packaging going for disposal where it actually can go for treatment and re-use.

Hexion now build in the revised assessment procedure for HP14 ecotoxicity – built into Appendix C14 of WM3 2018. Some of their SDSs and therefore wastes may carry HP14 as a result. See Action 2 above.

Waste Storage

There is a main storage area, IBC storage, spill kits are proximate, tertiary containment is in place as well as segregation according to HSG71.

The text below was drawn up immediately after the audit to capture the waste storage:

The brief inspection of material storage, including waste compound, confirmed:

- Sealed drainage system and concrete floors, sills and kerbs.
- The sealant in the concrete slab gaps is regularly looked at and at some point may need reapplying.
- The sump and valve arrangement have a water drop test annually.
- The drainage channel in the compound is checked to ensure it is not blocked.
- Segregation following published guidance takes place.
- There are no other satellite waste storage areas, apart from the IBC storage area, and the storage is visually inspected daily, weekly etc.

END

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

What are suspended scores?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry and Waste action criteria (used in section 1 and 2):

A: Permitted activities

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within 20 working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 – 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.