### Guidance on the use of the COSHH risk management programme CHARM

<table>
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<th>Guidance</th>
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<td>08/06/2021</td>
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### APPENDIX 1 – European Waste Catalogue Hazardous Waste Property Assessment Algorithms

<table>
<thead>
<tr>
<th>Hazard Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Explosive waste</td>
</tr>
<tr>
<td>H2</td>
<td>Oxidisers</td>
</tr>
<tr>
<td>H3</td>
<td>Flammable</td>
</tr>
<tr>
<td>H4</td>
<td>Irritant and H8 - Corrosive</td>
</tr>
<tr>
<td>H5</td>
<td>Harmful and H6 - Toxic</td>
</tr>
<tr>
<td>H7</td>
<td>Carcinogenic</td>
</tr>
<tr>
<td>H8</td>
<td>Corrosive</td>
</tr>
<tr>
<td>H9</td>
<td>Infectious</td>
</tr>
<tr>
<td>H10</td>
<td>Toxic for Reproduction</td>
</tr>
<tr>
<td>H11</td>
<td>Mutagenic</td>
</tr>
<tr>
<td>H12</td>
<td>Produces Toxic Gases in contact with Water, Air or Acid</td>
</tr>
<tr>
<td>H13</td>
<td>Can the substance produce another hazardous substance after disposal</td>
</tr>
<tr>
<td>H14</td>
<td>Ecotoxicity</td>
</tr>
</tbody>
</table>
Approval Procedure
Please note there is a modified approval procedure from the previous system. In the new system all workers identified on the risk assessment must sign the risk assessment **BEFORE** the supervisor will be allowed to approve the risk assessment.

The approval process is now as follows:

Creator writes risk assessment with named workers on the risk assessment

Creator submits risk assessment for approval

E-mail sent to all workers named on risk assessment - Workers required to sign form and agree to procedures stated in risk assessment

Only when **ALL** the workers have signed the risk assessment - An e-mail is sent to the Supervisor requesting they approve the risk assessment

If there is a hazard rated 5 chemical - School/Unit Safety Co-ordinator requested to approve work

If working with category 3 pathogens - project will then be sent to the Director of the Category 3 laboratory

**Adding new workers to an ‘Approved’ project** - Only a Supervisor can do this - Open up approved project and then press the ‘Modify Workers’ in the left hand column. Add the name of new worker. New worker only will be asked to ‘Approve’ project. All other approvals remain in place
Access
The new CHARM Programme for writing COSHH risk assessments can be found at the link
https://www.st-andrews.ac.uk/ehss/charm/
This will produce the Single Sign on site as follows:

Then 'login'
NOTE: There is NO logout command - To end a session all you have to do is close the
browser you are using

CHARM Programme
When you have logged in you will get a menu

A Training version of the programme exists - The aim is to allow people to try the programme without
producing ‘Live’ records which can be misinterpreted as work proposed.
Guidance on CHARM can be found

To search or suggest new chemicals

Guidance on CHARM programme can be found here

Press arrow to open folder

to search for chemicals - Press Search button

Enter name of chemical or part

The University of St Andrews is a charity registered in Scotland, No: SC013532
The search feature will produce a screen as follows:

This will determine if the chemical is on the University Database but should NOT be used as the start of the risk assessment process (you will need to open the risk assessment folder for this).

To Suggest a New Chemical

You should then fill in as much information as you know about the chemical or biological agent including its name and potential hazards - see form below. Then once you have filled in as much as you can press the submit button at the very bottom of the page.

This information will then be picked up the University Chemical Adviser who will assess the chemical and then either confirm your hazard rating or define a different hazard rating

NOTE - Please do not try contacting the University Chemical Hazards Adviser directly. All new chemicals must be submitted through this process

==============================================================================
Producing a COSHH Risk Assessment

To start a COSHH Risk Assessment

To start a new risk assessment - Press the arrow here

Press the ‘Create’ Button and you will be asked to confirm that you want to create a new risk assessment

If you wish to carry on a previously started risk assessment, press the ‘Continue’ button. If you wish to search previous risk assessments to either modify them or ‘Archive’ them, press the ‘Search’ button:

Page 1

If you press the Create and then the ‘Yes’ button, the following screen appears:

This column shows the sections of the risk assessment you have completed

Put in a brief title of the procedure

You should put in your School that manages you personally NOT WHERE YOU ARE WORKING

You should put the location of your work here

The screen should look like the screen shot below:
Once you have made your selection you must press the ‘Save’ button. The system does NOT automatically store the data you enter.

To move to the next page - Press the ‘Continue’ button.

Page 2

On the second page you will be asked to list the chemicals and/or biological agents to be used in your procedure. You will also be asked to put in a text description of the procedure.

You will be asked to put in the chemicals used in the procedure here.

NB – When you search for a chemical, please do not use Numbers at the start – All records are kept with the numbers at the end - as follows:

troger’s base (dimethylmethanodibenzodiazocine 2,8-6H,12H-5,11-{b,f}[1,5])
troger’s base (dimethylmethanodibenzodiazocine 2,8-6H,12H-5,11-{b,f}[1,5])
If you are using a category 3 biological agent, then you will be warned of this:

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Hazard rating</th>
<th>STEL</th>
<th>LTEL</th>
<th>License</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>potassium cyanide</td>
<td>5 T</td>
<td>5 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mycobacterium bovis</td>
<td>III B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When you submit this project for approval, then as work on category 3 biological agents can only be undertaken in the category 3 containment laboratory, the project will have to be approved by the Director of the Category 3 laboratories.

If you plan to work with ‘Controlled Substances’ under the Misuse of Drugs Act 1971, you will be warned of this and ask for your licence number to ensure you have all the necessary Home Office licences.

You will then be asked to complete the procedure. The procedure should include all chemicals and/or biological agents to be used in the complete procedure. The aim is to identify the risk...
of the procedure, but this can only be done when you you have a list of all the agents to be used and what you intend to do with them.

* Details of the procedure

Sample procedures:
1. Example Chemical procedure Risk Assessment
2. Example Biological procedure Risk Assessment

Example risk assessments to show the standard expected can be found here

Continue »

Once you have filled in this page - Press the ‘Continue’ button.

Page 3

This page deals with who may be at risk.
You will be asked to identify those workers who will be involved in the project. These workers will be informed of the fact that they are part of a project and asked to agree with the risk assessment automatically.
You should also identify others who may be at risk due to the work. Please do not forget those who you may not see often in a laboratory eg Cleaners, trades staff and maintenance workers. In this section you should also identify what you will do to warn them about the hazards and risks associate with the work in the project.

Put the e-mail address of workers on the project here. Then highlight worker then press the + Add Worker’ button
Hazards of Procedure

Each individual chemical will have a hazard but it must be realised that when the chemicals are mixed in a particular procedure, the mixture of chemicals may have a completely different set of properties. This section asks you to assess the properties of the mixture of chemicals or the reaction products.

The following items need to be completed for the mixture / reaction mixture of chemicals.
Page 5

Control Measures

Control measures should always be prioritised. The first control measure which should be considered is – ‘Can the Chemicals /Procedure’ be eliminated. If it cannot be eliminated then can you ‘Substitute’ some or all of the chemicals with something less hazardous. This protects all workers in a laboratory with minimal costs. If you cannot eliminate or substitute the chemicals then you should complete Section on Control Measures on how you propose to control the risks of the chemicals and procedure.

Pages 5 and 6 deal with the control measures that need to be applied to eliminate or minimise the risks of the procedure described in the COSHH Risk Assessment.

On page 5, the basic control measures are defined:

![Control Measures Table]

When you have completed Page 5 you will be asked to confirm you have filled in all that is necessary. Then when you are completed, press the ‘Continue’ Button.

You will then be asked to identify the PPE necessary. It is VERY IMPORTANT that when you identify the type of personal protective equipment, you make sure it is the right type. For example:

![Personal Protective Equipment]

Eye protection - Can provide protection against projectiles and also/or against chemical splashes. It is important that the correct type of eye protection is chosen eg eye protection in a laboratory is usually for protection against projectiles for when an experiment explodes.


Details on the different classes of microbiological safety cabinets (MSC) can also be found in Management, Design and Operation of Microbiological Containment Laboratories http://www.hse.gov.uk/pubns/priced/microbiologyiac.pdf

NOTE: Class of microbiological safety cabinet does NOT correlate to containment - The Class of MSC just defines how they work. Therefore you do not need to have Class 2 MSC in Category 2 containment facilities - you can use Class 1 MSCs.
<table>
<thead>
<tr>
<th>Manufacturers ID</th>
<th>Number of BS EN Standard</th>
<th>Field(s) of Use (Optional)</th>
<th>Symbol of Resistance to high speed particles</th>
<th>CE Mark of Conformity</th>
<th>Certified test body numr</th>
</tr>
</thead>
<tbody>
<tr>
<td>W 166 34 B/F CE 0196</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Symbol of Field(s) of Use**

<table>
<thead>
<tr>
<th>Symbol Number</th>
<th>Basic Use</th>
<th>Symbol of resistance to high speed particles</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Liquids (Goggle/Visor)</td>
<td>F = Low energy impact (45 cm/s) (Spectacles)</td>
</tr>
<tr>
<td>4</td>
<td>Large dust particles (Goggle)</td>
<td>B = Medium energy impact (120 m/s) (Goggle or visor)</td>
</tr>
<tr>
<td>5</td>
<td>Gas and fine dust particles (Goggles)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Short Circuit Electric Arc (Visor)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Molten metals and hot solids (Goggle/Visor)</td>
<td>T = Extreme temperature (-50°C / +55°C)</td>
</tr>
</tbody>
</table>
Hand Protection - There are different types of hand protection from protection against chemicals. Kevlar gloves to provide protection cuts and protection against high/low temperature.

<table>
<thead>
<tr>
<th>Mechanical Strength</th>
<th>Four Factors considered:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasion - 1 to 4</td>
<td></td>
</tr>
<tr>
<td>Blade Cut - 1 to 3</td>
<td></td>
</tr>
<tr>
<td>Tear - 1 to 4</td>
<td></td>
</tr>
<tr>
<td>Puncture - 1 to 4</td>
<td></td>
</tr>
</tbody>
</table>

Chemical Resistant - Gloves have a 30 minute breakthrough time for specific chemicals. Details the chemicals it is resistant to

Low Chemical Resistance - Gloves have a breakthrough time of less than 30 minutes

Resistant to biological agents

Resistant to Ionizing Radiations - Radioactivity and X-Rays etc

Protection against hot thermal hazards

Protection against extreme cold

Protection against Chemicals - The protection a particular gloves provides against specific chemicals depends on the material of the glove. Gloves do not provide a uniform protection against all chemicals. Some glove materials are better than others at protecting against specified chemicals but not others. The parameters that have to be considered are the

- Breakthrough time (The time it takes a particular chemical to penetrate a particular glove type).
- Permeation Rate (The rate of permeation of a chemical once it has broken through a particular glove type) and
- Degradation rate (The rate at which a particular glove type degrades in the presence of particular chemical).

Details of such parameters can be found at Glove Manufacturers websites eg:

Respiratory Protective Equipment (RPE) - There are different types of RPE to provide protection against dusts, fumes, chemical gases and smoke. The protection provided depends on the filters being used and also on the effectiveness of the seal around the face. It is therefore important that workers are aware of the different types of RPE and what they are used for.

### Dust RPE - Three types of RPE is available

<table>
<thead>
<tr>
<th>Type of mask</th>
<th>Size of particle will provide protection against</th>
<th>Protection Factor</th>
<th>British Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFP1</td>
<td>FFP1 Mask = For large particulates (&gt;5 mm) – Not very effective</td>
<td>4</td>
<td>BS EN 149 (disposable face mask) BS EN 140 (Half mask silicon RPE)</td>
</tr>
<tr>
<td>FFP2</td>
<td>FFP2 Mask = For fine particulates (dusts between 2 – 5 mm)</td>
<td>10</td>
<td>BS EN 149 (disposable face mask) BS EN 140 (Half mask silicon RPE)</td>
</tr>
<tr>
<td>FFP3</td>
<td>FFP3 Mask = For very fine dusts (&lt;2mm)</td>
<td>20</td>
<td>BS EN 149 (disposable face mask) BS EN 140 (Half mask silicon RPE)</td>
</tr>
</tbody>
</table>

### Gas Filter protection RPE

<table>
<thead>
<tr>
<th>Type of mask</th>
<th>Size of particle will provide protection against</th>
<th>Protection Factor</th>
<th>British Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFGas P2/P3</td>
<td>Disposable half masks - See Manufacturers details for protection against specific gases/fumes</td>
<td>10</td>
<td>BS EN 405 (Disposable masks)</td>
</tr>
<tr>
<td>Gas P2/ P3</td>
<td>Half Face mask -See Manufacturers details for protection against specific gases/fumes</td>
<td>10</td>
<td>BS EN 140 (Half mask respirator)</td>
</tr>
<tr>
<td>Gas</td>
<td>Full Face Respirator - See Manufacturers details for protection against specific gases/fumes</td>
<td>20</td>
<td>BS EN 136</td>
</tr>
</tbody>
</table>

**FACE FIT TESTING** - Where the effectiveness of a RPE is dependent on a seal of the PRE with the face of the user, it is legally required that the mask is face fitted (Reg 7 - Control of Substances Hazardous to Health Regulations 2002). This includes disposable masks - but you you only have to test one mask type once but if you change the manufacturer then you must do another face fit. Only qualified persons can undertake such a face fit test.

**Positive Pressure Full Face mask/hood**

<table>
<thead>
<tr>
<th>Type of mask</th>
<th>Size of particle will provide protection against</th>
<th>Protection Factor</th>
<th>British Standard</th>
</tr>
</thead>
</table>
Page 6
The control measures identified on Page 5 of the Form should NOT be seen as covering all situations. Just tricking the tick boxes on page 5 may not be enough. If you are unsure or there are other hazards which need controlling, please complete the section on page 6 entitled ‘Any Other Control Measures’.
You should also mention if there is need for specific training for handling any of the chemical and/or biological agents eg
• Training requirement for entering category 3 containment laboratories;
• Working with category 3 pathogens;
• Working with HF acid
• Working with inorganic cyanides eg NaCN

Some chemicals have Workplace exposure limits (WELs) as defined in the Control of Substances Hazardous to Health Regulations 2002 and defined in the EH40 document (http://www.hse.gov.uk/pubns/priced/eh40.pdf). Where WELs exist, these are deemed to be maximum legal exposure limits, exceeding these limits is a criminal offence. It, thus, may be necessary to monitor levels of these compounds. Some limits are so vast that we do not do any work that may reach these limits eg ethanol WEL = 1000ppm over an 8 hour working period. However some other substances eg formaldehyde the WEL is 2ppm or a 15 minute exposure period. Tus it may be necessary to periodically measure formaldehyde levels using systems like Kitagawa tubes or electronic measuring devices. If you do undertake monitoring, you need to keep accurate records of all monitoring activities.

Monitoring and supervision

If there are any other Control Measures required please give details below.

[[Blank field for details]]

☐ Require specific training to carry out this procedure

☐ Monitoring required

☐ Mark section as complete

Details of any other control measures required including any monitoring required

If specific training is required, then tick this box and complete the dialogue box which subsequently produced.
Waste Disposal

This section deals with the waste disposal procedures for the chemicals/biological agents being used. This is managed through the Special Waste Amendment (Scotland) Regulations 2004 and enforced by the Scottish Environment Protection Agency (SEPA).

However to ensure simple management of Hazardous Waste, it has been University guidance that no chemicals are put to drain.

The controls of how waste should be disposed of is managed through the European Waste Catalogue (EWC) which can be found at: [http://publications.environment-agency.gov.uk/pdf/GEHO0411BTRD-e-e.pdf](http://publications.environment-agency.gov.uk/pdf/GEHO0411BTRD-e-e.pdf). It is a legal requirement on the University that waste must be disposed of in a safe and environmental acceptable manner. The EWC does allow for harmless chemicals to be put to drain but that they must comply with the European Waste Catalogue (EWC) requirements.

The EWC has three categories of waste -

- **Absolute category** - This is where it is absolutely forbidden to put this chemical to drain in any quantity;
- **Mirror Category** - where a chemical can be put to drain but only if the concentration is below the limit set in the EWC. This is done through algorithms set up in the EWC.
- **Non-hazardous**

To determine if the quantity of a substance is deemed non-hazardous under the Special Waste Amendment (Scotland) Regulations 2004, you will need to use the algorithms stated in the EWC.

The algorithms are given in Appendix 1 at the back of this guidance.

As can be seen, this is a very complex procedure. Ensuring this is complied with is very difficult. However, if you are prepared to go through the relevant algorithm and show that the waste is not deemed hazardous, then it can be put to drain.

There are algorithms for:

- Explosive waste
- Highly flammable and flammable waste;
- Irritant and harmful waste
- Toxic waste;
- Corrosive waste; Environmentally Harmful waste
- Toxic for reproduction
- Infectious waste;
- Mutagenic waste
- Carcinogenic waste;
- Waste producing toxic gases whe in contact with water
- Any other substance which is hazardous

If you do this you **MUST KEEP A COPY OF THE ALGORITHM SHOWING it complies with relevant legislation.**

**NOTE:** It is however recommended that to simplify management of hazardous waste disposal that all chemical waste is deemed hazardous and disposed of in this manner and no such waste is put to drain.
Special Waste (Incineration) is only for very special cases for example was from work with Specified Animal Pathogens.

Waste which may be only slightly contaminated with chemicals eg waste gloves, weighing boats etc.

No chemically contaminated waste can be put in Domestic Waste Bins emptied by Estates cleaners.

This should be ticked if the organic waste cannot be mixed or there is no general waste solvent uplift.
NO aqueous waste can be put to drain unless the EWC algorithm has been undertaken and it can be shown not to be hazardous

If you are using a disinfectant - You must be able to show the disinfectant reduces the number of viable organism by $10^5$ fold.

Where special procedures are needed to inactivate or minimise the risk from a chemical, then that procedure should be detailed in this section. This procedure should provide exact details including timings for inactivation and necessary precautions for inactivation (eg to be done in a fume cupboard).

Once this section is competed, then you should mark it as complete and then press the ‘Continue’ Button as below.
Emergency Actions

The purpose of this section is to ensure that the appropriate measures to be taken in the event that the procedure described goes wrong are adequately described. This means that if there is an accident, staff know what to do.

The use of fire extinguishers should only be contemplated if the person knows what types of fire the extinguishers can be used against, how to use the extinguisher and only if it is safe to tackle the fire.

Always call a first aider for a heat or chemical burn. Only if the first aider believes it is necessary should an ambulance be called for.

Any chemical spillage - you should detail not only the means of cleaning up the spill but also what personal protective equipment that should be used (in particular the type of gloves).
If you are using a disinfectant - You must be able to show the disinfectant reduces the number of viable organism by $10^5$ fold.

Once you have completed this section, you should mark it as complete and then press the ‘Continue’ Button.

**Page 9**

**Submit Risk Assessment**

When you have completed the risk assessment form and all the boxes on the left hand side are ticked - You will see the ‘Submit Risk Assessment’ button.
When you press this, a dialogue box will appear:

By agreeing to the risk assessment, you agree to comply with the procedures agreed in the risk assessment.

Once you have pressed the agree button, this will automatically notify:
- Other workers and request their signature;
- Request approval from your Supervisor;
- If necessary request approval of the School Safety Co-ordinator
- If necessary request approval of the Category 3 Containment Laboratory Director

**Page 10**

**View**

To view partially completed risk assessments:

This will bring up a list of partially completed risk assessments:

To view your risk assessments which have been submitted for approval, go to the CHARM homepage:

Press Continue ‘Button’

To reactivate the risk assessment - press this button
This will bring up the following table:

You must highlight the role you are searching under - eg are you the creator, PI etc)

This shows the status of the approval process

To reactivate the risk assessment - Press this button

Cyanide Forms
Once a form has been approved, press the Search Button to get up the relevant form (as a Creator or Supervisor) and open the relevant risk assessment with an inorganic cyanide in it – This will then look like:

Press the search Button

Press the link to the Cyanide Form which will open the Cyanide form as below
NEW Workers to be added
The Supervisor can add the names of new workers to an approved project anytime after approval. **Only the Supervisor** can undertake this operation
When you open an ‘Approved’ project, you will get the following page:

Click on Modify Workers

This will bring up the page:
Just add the name of a new worker. System will automatically get new worker to approve risk assessment without others having to approve it.
**Editing Risk Assessments**

To edit a risk assessment – Only the Creator and the Supervisor can Edit a risk assessment. Press the Search Button on the Front Page of the CHARM programme and search as a Creator or as a Supervisor. This will bring up all the risk assessments associated with your role.

Open the relevant risk assessment which will look like:

Press this Button to open the Edit function of the Programme

**NB** – When you open the risk assessment in the ‘Edit Function’ and modify the risk assessment, no matter how small the changes are, you will need to get the modified risk assessment reapproved by all the necessary people

**Archiving**

4 years after a risk assessment has been approved, it will be required to be reviewed formally and all those on the risk assessment will have to approve the work on the form again.
A warning 3 months, 1 month and 1 week prior to the archiving date will be sent to Supervisors. They should then review the risk assessment and if it is still valid, then reapprove it. Workers will also have to reapprove it.

Any editing needing done on the risk assessment should be done as shown in the Edit section.

If the risk assessment is not reviewed by 4 years it will automatically be archived and withdrawn from view and not be valid.

If a risk assessment has been Archived, then for the work to continue, a new risk assessment will have to be written and approved.

In some exceptional circumstances, Archived risk assessments can be reactivated but this will be a rare occurrence.

**NOTE:**
If you have any problems regarding the use of the CHARM system, you should in the first instance contact Paul Szawlowski at EHSS using the e-mail address: ehss
Appendix 1

European Waste Catalogue Hazardous Waste Property Assessment Algorithms

Hazard Waste Group 1 - Explosives (H1)

Figure C3.1: Decision Tree for the Assessment of Hazard H1

Is the waste contained under the Explosives Act 1875?

- Yes
  - Does the waste contain other substances assigned R2 or R3?
    - No
      - Not hazardous by H1
    - Yes
      - Is any information available to demonstrate that the waste is not explosive (e.g. test results)
        - No
          - Not hazardous by H1
        - Yes
          - Hazardous waste by H1

Wastes containing substances assigned risk phrases R7, R8, R9, R16, R18, R19 and R44 should be considered for hazard H1.1

Note:
1. Except wastes covered by the Explosives Act 1875

Hazard Waste Group 2 - Oxidisers (H2)

Figure C2.1: Decision Tree for the Assessment of Hazard H2

- Does the waste contain substances assigned R7, R8, or R9 on the ASL?
  - Yes
    - Is the concentration above the limit value in the ASL?
      - Yes
        - Hazardous waste by H2
      - No
        - Not hazardous by H2
  - No
    - Does the waste contain organic peroxides assigned R7 or R8?
      - Yes
        - Is the concentration of these organic peroxides in the waste >5%?
          - Yes
            - Hazardous waste by H2
          - No
            - Not hazardous by H2
      - No
        - Does the waste contain other oxidisers assigned R7, R8 or R9?
          - Yes
            - Is testing an available option?
              - Yes
                - Does EC Annex V Test method A17 (or equivalent) give a positive result?
                  - Yes
                    - Hazardous waste by H2
                  - No
                    - Not hazardous by H2
              - No
                - Not hazardous by H2
          - No
            - Does the waste contain other oxidisers assigned R7, R8 or R9?
              - Yes
                - Is testing an available option?
                  - Yes
                    - Does EC Annex V Test method A17 (or equivalent) give a positive result?
                      - Yes
                        - Hazardous waste by H2
                      - No
                        - Not hazardous by H2
                  - No
                    - Not hazardous by H2
              - No
                - Not hazardous by H2

Environment Agency Hazardous Waste: Interpretation of the definition and classification of hazardous waste.
Hazard Waste Group H3 - Flammable

C3.1
Decision Tree for the Assignment of Hazard Code H3

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1. A free draining liquid phase is a liquid that can be poured or decanted from a waste.

(i) - liquid substances and preparations having a flashpoint below 21°C (including extremely flammable liquids);

(ii) - substances and preparations which may become hot and finally catch fire in contact with air at ambient temperature without application of energy;

(iii) - solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after the removal of the ignition source

(iv) - gaseous substances and preparations which are flammable in air at normal pressure;

(v) - substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

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Hazard Waste Group H4 and H8 - Irritant and Corrosive

C4.7 Decision Tree

C47 sets out the assessment process for Hazards H4 and H8

Does the waste contain substances assigned R35?

Yes → Is the total concentration of substance assigned R35 > 5%?

Yes → Hazardous by Hazard H8: Corrosive

No → Is the total concentration of substance assigned R35 > 1% but < 5%?

Yes → Hazardous by Hazard H4: Irritant

No → Does the waste contain substances assigned R34?

Yes → Is the total concentration of substances assigned R34 > 10%?

Yes → Hazardous by Hazard H8: Corrosive

No → Is the concentration of substances assigned R34 > 5% but < 10%?

Yes → Hazardous by Hazard H4: Irritant

No → Does the waste contain substances assigned R41?

Yes → Is the total concentration of substances assigned R41 > 10%?

Yes → Hazardous by Hazard H4: Irritant

No → Does the waste contain substances assigned 36 R37, R38 singularly or in a combined risk phrase?

Yes → Is the concentration of substances assigned these risk phrases > 20%?

Yes → Hazardous by Hazard H4: Irritant

No → Can the waste produce a leachate of pH < 2 or a pH = 11.5?  

Yes → Is the waste to be treated as hazardous on the basis of its pH

Yes → Hazard H8: Corrosive

No → Do appropriate tests give a positive result for H4 or H8

Yes → Hazardous by Hazard H4 or H8 depending on the test results

No → Not hazardous by H4 or H8

1 - If the waste also contains substances assigned R34 and the total concentration of these substances is 10%, the waste is hazardous by hazard H8: Corrosive

2 - Including consideration of acid/alkali reserve, if appropriate
Hazard Waste Group H5 and H6 - Harmful and Toxic

Figure C5.1 sets out the assessment process for the Hazards H5 and H6.

Hazard Waste Group H7 - Carinogenic

Figure C7.1 | Decision Tree for the Assessment of Hazard H7
C.9.5 Decision Tree


Figure C9.1: Chapter 18 Wastes - Special Requirements

- **Is the Waste listed in chapter 18 of the EWC?**
  - Yes (under sub chapter 18.02 including animal carcasses and laboratory waste)
    - Yes (under sub chapter 18.01)
      - For wastes listed under subchapter 18.01
        - Is the waste a "clinical waste"?
          - Yes
            - Is the waste a culture, or enrichment of a microorganism or toxin known or reliably believed to cause disease in man or other living animal?
              - Yes
                - Does the waste contain a viable causal pathogen or toxin?
                  - Yes
                    - Special Requirements Apply (Hazardous by H9)
                      - Use EWC Code 18.01.03* / 18.02.02*.
                  - No
                    - Special Requirements Do Not Apply (Not Hazardous by H9)
                      - Use an appropriate EWC Code from Chapter 18.
              - No
            - Is the waste a "clinical waste"?
              - No
            - For wastes listed under subchapter 18.01
              - Is the waste a "clinical waste"?
                - Yes
                  - Is the waste a culture, or enrichment of a microorganism or toxin known or reliably believed to cause disease in man or other living animal?
                    - Yes
                      - Does the waste contain a viable causal pathogen or toxin?
                        - Yes
                          - Special Requirements Apply (Hazardous by H9)
                            - Use EWC Code 18.01.03* / 18.02.02*.
                        - No
                          - Special Requirements Do Not Apply (Not Hazardous by H9)
                            - Use an appropriate EWC Code from Chapter 18.
                    - No
                      - Special Requirements Do Not Apply (Not Hazardous by H9)
                        - Use an appropriate EWC Code from Chapter 18.
                - No
                  - Is the waste a "clinical waste"?
                    - Yes
                      - Is the waste a culture, or enrichment of a microorganism or toxin known or reliably believed to cause disease in man or other living animal?
                        - Yes
                          - Does the waste contain a viable causal pathogen or toxin?
                            - Yes
                              - Special Requirements Apply (Hazardous by H9)
                                - Use EWC Code 18.01.03* / 18.02.02*.
                            - No
                              - Special Requirements Do Not Apply (Not Hazardous by H9)
                                - Use an appropriate EWC Code from Chapter 18.
                        - No
                          - Special Requirements Do Not Apply (Not Hazardous by H9)
                            - Use an appropriate EWC Code from Chapter 18.
                    - No
                      - Is the waste a "clinical waste"?
                        - Yes
                          - Is the waste a culture, or enrichment of a microorganism or toxin known or reliably believed to cause disease in man or other living animal?
                            - Yes
                              - Does the waste contain a viable causal pathogen or toxin?
                                - Yes
                                  - Special Requirements Apply (Hazardous by H9)
                                    - Use EWC Code 18.01.03* / 18.02.02*.
                                - No
                                  - Special Requirements Do Not Apply (Not Hazardous by H9)
                                    - Use an appropriate EWC Code from Chapter 18.
                            - No
                              - Special Requirements Do Not Apply (Not Hazardous by H9)
                                - Use an appropriate EWC Code from Chapter 18.
                        - No
                          - Is the waste a "clinical waste"?
                            - Yes
                              - Is the waste a culture, or enrichment of a microorganism or toxin known or reliably believed to cause disease in man or other living animal?
                                - Yes
                                  - Does the waste contain a viable causal pathogen or toxin?
                                    - Yes
                                      - Special Requirements Apply (Hazardous by H9)
                                        - Use EWC Code 18.01.03* / 18.02.02*.
                                    - No
                                      - Special Requirements Do Not Apply (Not Hazardous by H9)
                                        - Use an appropriate EWC Code from Chapter 18.
                                - No
                                  - Special Requirements Do Not Apply (Not Hazardous by H9)
                                    - Use an appropriate EWC Code from Chapter 18.
                            - No
                          - Is the waste a "clinical waste"?
                            - No
                              - Is the waste a culture, or enrichment of a microorganism or toxin known or reliably believed to cause disease in man or other living animal?
                                - Yes
                                  - Does the waste contain a viable causal pathogen or toxin?
                                    - Yes
                                      - Special Requirements Apply (Hazardous by H9)
                                        - Use EWC Code 18.01.03* / 18.02.02*.
                                    - No
                                      - Special Requirements Do Not Apply (Not Hazardous by H9)
                                        - Use an appropriate EWC Code from Chapter 18.
                                - No
                                  - Special Requirements Do Not Apply (Not Hazardous by H9)
                                    - Use an appropriate EWC Code from Chapter 18.
                        - No
                          - Is the waste a "clinical waste"?
                            - Yes
                              - Is the waste a culture, or enrichment of a microorganism or toxin known or reliably believed to cause disease in man or other living animal?
                                - Yes
                                  - Does the waste contain a viable causal pathogen or toxin?
                                    - Yes
                                      - Special Requirements Apply (Hazardous by H9)
                                        - Use EWC Code 18.01.03* / 18.02.02*.
                                    - No
                                      - Special Requirements Do Not Apply (Not Hazardous by H9)
                                        - Use an appropriate EWC Code from Chapter 18.
                                - No
                                  - Special Requirements Do Not Apply (Not Hazardous by H9)
                                    - Use an appropriate EWC Code from Chapter 18.
                            - No
                          - Is the waste a "clinical waste"?
                            - No
                              - Is the waste a culture, or enrichment of a microorganism or toxin known or reliably believed to cause disease in man or other living animal?
                                - Yes
                                  - Does the waste contain a viable causal pathogen or toxin?
                                    - Yes
                                      - Special Requirements Apply (Hazardous by H9)
                                        - Use EWC Code 18.01.03* / 18.02.02*.
                                    - No
                                      - Special Requirements Do Not Apply (Not Hazardous by H9)
                                        - Use an appropriate EWC Code from Chapter 18.
                                - No
                                  - Special Requirements Do Not Apply (Not Hazardous by H9)
                                    - Use an appropriate EWC Code from Chapter 18.
Hazard Waste Group H10 - Toxic For Reproduction

C10.4 Decision Tree
Figure C10.1 sets out the assessment process for the Hazard H10.

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Hazard Waste Group H11 - Mutagenic

Figure C11.1: Decision Tree for the Assessment of Hazard H11

Does the waste contain substances assigned R46?

Yes

Is the concentration of any individual substance assigned R46 ≥ 0.1%?

Yes

Does the waste contain substances classified as Muta. Cat. 3, R68?

No

Not hazardous by H11

Yes

No

Is the concentration of any individual substance classified Muta. Cat. 3, R68 ≥ 1%?

Yes

Hazardous Waste by H11

No
Hazard waste Group H12 - Produces Toxic Gases in contact with Water, Air or Acid

Hazard Waste Group 13 - Can the substance produce another hazardous substance after disposal
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