

Fire prevention plan

Plan version: V3

Site details

Site name: Maesydd Anaerobic Digester Facility

Site address: Maesydd AD Facility, The Maesydd, Pool Quay, Welshpool,
Powys, SY21 9LA

Operator name: H. Langford

Who this plan is for

This plan is intended for

Persons	Compliance, understanding and responsibility for	understanding & acknowledgement	Available for Reference
Site Manager	Haydn Langford 07980684738		
Site environmental Manager	Haydn Langford 07980684738		
Site Operation staff	Haydn Langford 07980684738		
Site Maintenance – in-house	Haydn Langford 07980684738		
External contractors NB they should be provided with access to a copy as part of the permit to work		Clarke Energy 07760 175045 JBL Mechanical Engineers 07793 436666 AB-EN Ltd 07980 692727 Scottish Power 08000 015400 Emily Kirk 07903439122	
Site visitors			
Site regulators			HSE NRW
Fire Service			Welshpool Fire and Rescue Station. 999

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Types of combustible materials

Combustible waste

The following levels of combustible wastes can be found on site

Type of Combustible Waste	Max Quantity		Stored
Paper/cardboard	Minimal		Office use only
Plastics	Minimal		Office use only
Rags/ textiles	Minimal		Maintenance use only
Compost and plant material	Poultry Litter	350 tonnes	Above ground concrete pad
	FYM	100 tonnes	Above ground concrete pad
	Raw cow slurry	10000 cm ³	Above ground storage tank
	Liquid digestates	25cm ³ per day	Above ground metal tank
WEEE	Minimal from operational maintenance		Office or hardstanding ready to be sent for recover/ disposal
Diesel / petrol	On Maesydd Farm – not on AD site		None on site
Gas bottles			None on site
Aerosols			None on site
Batteries	Batteries are not stored on site other than those in Atex rated torches and sfety equipment and those in computers and backup systems for the scada system No car batteries are stored on site		
Oil	Engine Oil		Stored within bund area
Chemicals	Ferric Chloride	10000 litres	Stored in IBC's within bund area
Wood			None on site
scrap metals contaminated or mixed with other waste such as oils or plastics			None on site
de-polluted and un-depolluted ELVs			None on site
refuse derived fuel (RDF) and solid recovered fuel (SRF)			None on site

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biomass		None on site
mixed waste containing any combustible wastes		None on site
Confirm if any are stored on site	Confirm if any are stored on site - if any used ensure they are itemised here and on a separate sheet with the MSDS sheet	

On each update the list of materials referenced as POP's should be checked and any materials itemised in this plan.

These materials should be stored separately and marked on the site plan

If there is a fire, you must tell the Fire and Rescue Service (FRS) that there are wastes containing POPs on site. If there is a fire involving POPs waste then any residue from the fire may contain POPs and so will need to be segregated and treated following the POPs regulations. This could include firefighting water.

[Section 4.5 of the fire prevention plan guidance](#) provides more information about POPs and the requirements of the POPs regulations 2019.

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Where the plan is kept and how staff know how to use it

This Fire Prevention Plan is kept in the site office and a copy is maintained on the office shared file.

Testing the plan and staff training

All staff and contractors working on site must understand the contents of the fire prevention plan so that they know what they must do

- to prevent a fire happening
- during a fire if one breaks out

All site staff will be trained in the implementation of the fire prevention plan.

This training will include 12 monthly refreshers on

- Actions to prevent a fire occurring
- What to do during a fire if one breaks out
- Atex Zone requirements

Fire drills will be carried out on a 12 monthly basis and will include enacting staff responsibilities as well as evacuation

Following the Fire drill, there will be a review of the process and any revisions will be made to the plan

In addition the plan will be updated if it is deemed that

- there is reason to suspect it no longer meets the objectives of the guidance
- you have a fire or identify a near miss of a fire
- you change your activities
- the environment you are operating in changes, for example if a school or residential development is built nearby
- concern is raised by a regulator over the risk posed by your operation

A copy of the revised Fire Prevention Plan should be sent to the Environment Agency to approve.

Fire prevention plan contents

Activities at the site

The site is designed to generate combustible gas and as such areas are classified as hazardous under and so equipment and activities are required to conform to Atex and DSEAR regulations

Staff are required to confirm their understanding of the zoning at the site and the restriction on the activities within the zoned areas

Regular training is given to staff to reinforce this

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Site plan

Please see Appendix 1 for Site plan.

Plan of sensitive receptors near the site

The area surrounding the plant is rural with agricultural buildings to one side belonging to the site owner

The nearest habitation dwellings to the site are around 500m to the WSW and is shielded from the AD site by agricultural warehousing belonging to the site owner

To the north east of the site around 750m is an industrial estate which is separated from the site by a former airfield forming an effective fire break

To the south east of the site is low lying wet land with drainage ditches

Contact details for nearest residents/ businesses

Name	address	contact details	Distance from site
Little Maesydd	Little Maesydd, Pool Quay, Welshpool, SY21 9LB		380m
The Hollies	The Hollies, Pool Quay, Welshpool, SY21 9LB		350m
Meadow Cottage	Medow Cottage, Pool Quay, Welshpool, SY21 9LB		350m

Manage common causes of fire

There are several actions that can cause fire
The following is an assessment of likelihood of fire occurring from these sources and mitigation.
Causes of fires on your site include:

	Risk of oc-currence	Control	Revised risk
Arson Or Vandalism	Low	The site is located via a security gate away from the road and in a rural location. Aspects of the site operation can be shut down remotely if a problem is found. What3words information and contact details are printed on the side of CHP1 (nearest the road) as well as the entrance to the site.	Low
Self Combustion (Eg Due To Chemical Oxidation)	Low	Limited EWC codes from agricultural sources and low risk additional materials Any Activated carbon usage will be stored in a dry place and waste material will be main-tained separate and at a safe distance away from other materials	Low
Plant Or Equipment Failure	Med	Planned preventative maintenance Equipment in the Atex area is Atex rated.	Low
Electrical Faults	Med	Planned preventative maintenance Wiring heat surveys carried out on a regular basis for all electrical components	Low

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		Equipment in the Atex area is Atex rated.	
Naked Lights	Low	Not permitted on site	Low
Discarded Smoking Materials	Low	No smoking permitted on site site rules are signed by all visitors, contractors and staff that they understand that the site is a no smoking site	Low
Hot Works (Eg Welding Or Cutting)	High	Permit to work process with risk assessment for any hot works undertaken on site and competence proof required to carry out such work	Low
Industrial Heaters	Low	Not used on site In the event that boilers are brought in to warm up tanks in the event of long term shut down they should be located in such a place as to cause least risk and checked for compliance with Atex regulations if they need to be placed within a hazardous area	Low
Hot Exhausts	Low	Planned preventative maintenance on CHP engines Engine maintenance contract includes maintenance and management of exhaust systems Annual stack monitoring	Low
Open Burning (On Site Or Adjacent Sites)	Low	Concrete/ hardstanding area surrounding the plant provides an effective fire barrier	Low
Damaged Or Exposed Electrical Cables	Low	Planned preventative maintenance Wiring heat surveys carried out on a regular basis for all electrical components	Low
Reactions Between Incompatible Materials	Low	Material selection	Low
Neighbouring Site Activities	Low	Adjoining land is owned by same owner	Low
Sparks From Loading Buckets	Low	Loading shovel only in contact with outdoor stored crop materials with DM around 25-30%	Low
Incompatible Wastes	Low	Limited EWC codes from agricultural sources	Low
Hot Loads Deposited At The Site	Low	Limited EWC codes from agricultural sources with no hot delivery potential	Low

Fire Watch Procedures

The daily maintenance check required operatives to check for unusual operation, noise, vibration etc which can be an indication of overheating of equipment

All equipment used on site should be Atex rated.

The site employs CCTV to monitor the entire area and operatives are on a 24 hour call out

Critical equipment has auto shut off systems in the event of overheat.

Smoking

The site will operate a strict **No Smoking** policy. Signage is installed to enforce this rule, along with staff and visitor inductions to ensure personnel on site are aware of the consequences and their responsibility if caught smoking on the site.

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Site Safety Rules

All staff and visitors to the site are required to adhere to the Site Rules. These are provided on signing in to the site and a copy found in the Environmental Management system.

Electrical Safety

Electrical equipment failure is a significant cause of accidental fires.

External Electrical contractors are required to provide risk assessments and be aware of the ATEX requirement to ensure that any equipment maintained or replaced within the ATEX zoned area is fully compliant with the ATEX regulation

As part of the operation of the plant the following actions shall be ensured

- ATEX requirements
- overloading of equipment and correct fuse ratings;
- protection against overloading of installation;
- physical environment in which the equipment is used (e.g. wet or dusty atmospheres); and
- use and maintenance of suitable personal protective equipment.
- All electrical installations will be regularly maintained by a competent person, in accordance with the Electricity at Work Regulations 1989 (EAW Regulations). The use of low voltage equipment should conform to the requirements of the Electrical Equipment (Safety) Regulations 1994, including the requirement to be CE marked.
- All electrical equipment will be installed and maintained in a safe manner by a competent person. If portable electrical equipment is used, including items brought into the workplace by staff, then we will ensure that it is visually inspected. If there is any doubt about the safety of an electrical installation then a competent electrician will be consulted.
- An electrical survey by a suitably qualified contractor of all components will be carried out on an annual basis and any areas of concern addressed immediately

Hot works safe working practices

Any hot works required on site must compete a permit to work prior to coming on site and include a risk assessment, an acknowledgement that they understand the risks associated with the site and that they are suitably qualified and experienced in the work they are being engaged to complete.

Hot exhausts and engine parts

The placement of the engine and emergency flare are away from the main gas holders

The engines have automatic cut offs for overheat ?

Both CO2 and Smoke alarms are in the engine enclosures as well as the control rooms.

These are maintained and serviced yearly by Fre-Energy.

Storage

It must also be noted that the plant is an agricultural Anaerobic Digestion plant that is fed on a mixture of crop and waste inputs with the majority being non-waste. As such the storage of this material on site is in line with the silage, slurry and agricultural fuel oil) regulations 2010 (England) and as amended 2013 (SSAFO) regulations and not the guidance on waste storage – in particular it is important that silage clamps do not allow for the ingress of air through turning as required in waste storage

Poorly managed storage areas increase the risk of fire. The more combustible materials stored the greater the source of fuel for a fire. Combustible materials are not just those generally regarded as highly combustible, such as paper or cardboard, but all materials that will readily catch fire. Even

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non-combustible materials may present a fire hazard when packed in combustible materials. However, by carefully considering the type of material, the quantities kept and the storage arrangements, the risks can be significantly reduced.

Outdoor Storage

The main risks associated with outdoor storage, is that of outdoor fires preventing escape from the building or from the spread of undetected fires. Fires are most likely to start in stored or waste material or dry undergrowth. Covers to the silage clamps will be one of the biggest single flammable material stored on the site. Sparks, cigarettes and arson are the likely ignition sources. To reduce these risks, ensure that:

- outdoor areas are kept tidy, by clearing waste and vegetation.
- Materials are sited in designated storage areas away from the building, fire exits, windows and boundary fences

Clamp Storage

Crop material will be stored safely and to preserve feedstock quality and this will also reduce the potential for clamp fires. Best practice on laying down the silage includes:

- Filling clamps as rapidly as possible
- Keeping the clamp apron clean by avoiding dirty wheeling's where crop will be tipped
- Ensuring good consolidation by even filling and regular rolling of thin layers of no more than 20cm
- Cross rolling with a second tractor if possible
- Not over-consolidating low dry matter silages
- Filling large bunkers in a wedge shape from one end.
- Keeping the sides of the clamp slightly above the level of the centre so the tractor leans away from the walls Avoiding rolling before the next day's filling (as this will draw air in)
- Sealing the clamp after each day's work only if it effectively prevents the entry of air
- If silage is of high dry matter consider taking the last few acres as direct cut which will consolidate well and seal the top of the clamp.

Clamp sealing

- Making the final seal as soon as consolidation is complete
- Folding in exposed side sheets first, then covering the whole area with plastic sheeting
- Using two sheets; a new sheet covered with last year's sheet to reduce the risk of puncture
- Covering the whole sheeted surface with gravel bags
- Ensuring the sheeting is not punctured, protecting it from birds with netting and repairing any damage
- Ensuring that unroofed clamps shed rainwater freely so it does not seep into the clamp.

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Fire Risk Assessment

All potential fire risks and controls are detailed in the DSEAR Survey and compliance report.

Prevent self-combustion

Feed stocks can self-combust under certain conditions. We have a process in place to prevent this by carefully managing storage pile volumes and height, and the temperature of the wastes.

General self-combustion measures

Under this heading, replace this text to explain, in general, how you prevent self-combustion. Then give further details under the headings that follow.

If this section does not apply, say that and explain why.

Manage waste piles

Storing waste materials in their largest form

We store up to 3 months of Solid and Liquid Digestate on site. We monitor these waste

Parameter	Monitoring frequency	Monitoring method
Temperature	At least daily during sanitisation and stabilisation stage	Temperature probe
Moisture	By-weekly	By-weekly

Maximum pile sizes for the waste on your site

Type of waste	Max amount stored at any one time	Type of storage	Time its stored for before processing
Chicken litter	350 tonnes	Above ground concrete pad	42 days
FYM	100 tonnes	Above ground concrete pad	42 days
Raw cow slurry	10000 cm ³	Blocked store above ground level.	6 months storage
Liquid digestate	3,600 m3	Within above ground metal tank	6 months storage
Engine oil	200 litres	Stored within bund area	3 months
Solid digestate	2,000 m3	Within the bunded area of the site	6 months storage
Ferric Chloride	10000 litres	IBC's within bund areas	6 months storage

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Electrical equipment	1 or 2 pieces	n/a	All year
General Waste	1 x 180lt bin	1 bin	1 week

Prevent fire spreading

Separation distances

All combustible waste piles will be stored with a minimum separation distance of 6 metres wherever practicable to minimise the risk of fire spreading.

Fire walls and storing waste in bays

Feedstocks will be stored on the existing concrete hardstanding area shown below. No fire walls or storage bays are proposed as part of the development.

Quarantine area

The designated quarantine area is the existing concrete hardstanding outlined in red on the plan below. In the event of a fire, this area will be used to isolate burning or potentially affected material from the remaining feedstocks to help prevent the spread of fire.



How to use the quarantine area if there is a fire

If it is safe to do so, burning material or material at risk of ignition will be moved into the designated quarantine area using the site's telehandler. This will help isolate the affected material and reduce the risk of fire spreading to other stored feedstocks.

Procedure to remove material if there is a fire

In the event of a fire, the emergency services will be contacted immediately. If it is safe to do so and only after the emergency services have been notified, the operator may use the telehandler to separate and relocate feedstocks into the quarantine area to reduce the risk of further fire spread.

Detecting fires

The site is monitored by CCTV which is maintained and monitored by ORP Surveillance.

The AD Control room contains a smoke alarm that is monitored and checked daily by the AD operator and manager.

The engines also contain smoke alarms and CO₂ alarms which are monitored and serviced annually by Fre-Energy.

Suppressing fires

We do not store any waste in buildings at this AD site, therefore we do not have an automated fire suppressant system. However, there are manual systems in place.

Suppression systems in use

These include:

Fire extinguishers are located across the site for use in any of the enclosed spaces, the type of extinguisher in each location has been put there to mitigate for the most likely causes of a fire, as identified in the DSEAR (please see Hazard plan for more details on locations):

- 1 × CO₂ – CHP control room

Firefighting techniques

Active firefighting

- All staff are required to undertake fire training.
- Given the nature of the site only small fires are considered appropriate to be dealt with in non Atex areas.
- All fires in Atex areas will be dealt with by the fire authority and the site will be evacuated.

Training

All employees are trained and required to understand the fire procedures on site, this will include

- Actions on discovering a fire;
- How to raise the alarm and what happens then;
- What to do upon hearing the fire alarm;
- The procedures for alerting contractors and visitors including, where appropriate, directing them to exits;

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- The arrangements for calling the fire and rescue service;
- The evacuation procedures for everyone on the site to reach an assembly point at a place of total safety;
- The location and, when appropriate, the use of fire fighting equipment;
- the location of escape routes, especially those not in regular use;
- how to open all emergency exit doors;
- the importance of keeping fire doors closed to prevent the spread of fire, heat and smoke;
- where appropriate, how to stop machines and processes and isolate power supplies in the event of a fire;
- the safe use of and risks from storing or working with highly flammable and explosive substances; and the importance of general fire safety, which includes good housekeeping.

These procedures will be tested in fire drills on a regular basis

Containing & mitigating fires & fire water

Controlled and Intercepted drainage is provided for throughout the site with all surface water drainage points having shut off mechanisms to stop egress from the site in the event of emergency. Please see Drainage plan for further information.

Surface water discharge valves are kept closed and water released as part of the maintenance plan

The main bunded area forms an exclusion zone which would effectively hold any fire water in an intercepted drainage area and act as a fire break

All engine areas and key motor aspects have emergency shut off valves and these are identified for each staff member within the training and documented in the operational manual

The engine housing is within a enclosed containers with fire alarm, gas monitoring and the plant room has external shut off valves so that the engines and gas supply to the engine area can be cut off without the need to enter the building in the event of fire

Explosion Risk

Although covered in the DSEAR assessment, A brief outline of the risk associated with explosion is covered in this section:

The anaerobic process produces biogas (methane) within an enclosed area; this has obvious risks associated with it. However the stored quantities involved are minimal as the plant is designed and sized to minimise the amount of gas storage required.

In this development the CHP will use approximately 720m³ of biogas per hour, which is equivalent to the amount of biogas produced by the plant. The gas holders are mainly employed to provide a sealed cover to the plant and to manage minor interruptions to the CHP. In farm scale systems the biogas produced is matched to the combined heat and power unit (CHP) requirements.

The energy within the biogas produced by the digester is roughly equivalent to petrol contained in 16.5 car fuel tanks or 1.5 typical household heating oil tanks.

The plant is designed for full ATEX compliance.

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Managing fire water.

Firefighting water has the potential to become contaminated through contact with feedstocks, digestate and other materials stored on site. To minimise the risk of pollution, the Anaerobic Digestion facility is fully bunded, with all surface water and fire water arising within the operational area contained within the site's impermeable drainage system. Surface water collected within the bunded area drains to Digester 1, preventing contaminated water from entering surrounding land or nearby watercourses.

In the event of a fire, the emergency services will be contacted immediately. If it is safe to do so, site operators will isolate the affected area and prevent contaminated fire water from leaving the site. Any contaminated fire water will be retained and managed in accordance with the Environmental Permit before being reused within the AD process or disposed of via an appropriately authorised route.

During and after an incident

Diverting incoming waste to alternative sites.

In the event of a fire, no further feedstocks will be accepted onto the site until it is safe to resume operations. Any incoming waste will be diverted to an appropriately permitted alternative facility or held by the supplier until the site is able to recommence normal operations. Feedstocks already on site may be moved within the designated quarantine area, where it is safe to do so, to reduce the risk of fire spreading.

Notifying residents and businesses

Should a fire have the potential to affect neighbouring properties through smoke or other emissions, the Fire and Rescue Service will take the lead in advising nearby residents and businesses. The Site Manager will cooperate fully with the emergency services and Natural Resources Wales, providing any information required regarding the incident and its potential impacts.

Clearing and decontamination after a fire

Firefighting water will be contained within the site's bunded drainage system wherever possible, preventing contaminated water from leaving the operational area. Any contaminated materials, feedstocks or fire water will be assessed following the incident and managed in accordance with the Environmental Permit before being reused within the AD process or removed by an appropriately authorised contractor.

Making the site operational after a fire

Operational recovery sequence after a small AD plant fire

1. Secure and isolate the affected area

Prevent further ignition, gas release, or electrical hazards before any inspection begins.

- Shut down CHP units, pumps, blowers, and feed systems
- Isolate electrical circuits feeding the affected zone
- Close gas valves and isolate biogas lines if near the fire
- Ventilate enclosed spaces to remove smoke and residual heat
- Record the incident in the site log

2. Conduct a formal post-fire inspection

Identify damage to electrical systems, insulation, cabling, sensors, and structural components.

- Inspect all electrical panels, MCCs, and cable trays
- Check CHP engine housings, control rooms, and ducting
- Verify integrity of gas pipes, seals, and condensate traps
- Assess any damage to fire alarms, CO₂ detectors, and CCTV
- Document findings for insurers and regulators

3. Verify gas safety and emissions integrity

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Ensure no leaks or compromised biogas containment before restarting digestion or CHP systems.

- Perform gas leak tests on all biogas lines
- Check pressure relief valves and flame arrestors
- Inspect the gas booster, and membranes
- Confirm gas detection systems are functional and calibrated

4. Repair or replace damaged components

Restore all affected electrical, mechanical, and safety systems to full operational condition.

- Replace burnt cabling, insulation, trunking, and connectors
- Repair CHP engine wiring, sensors, or control modules
- Replace damaged fire alarms or CO₂ detectors
- Service or recalibrate instrumentation (pressure, temp, flow)

5. Perform electrical and control system recommissioning

Ensure safe energisation of systems before restarting biological or mechanical processes.

- Conduct insulation resistance tests (IR tests)
- Verify PLC/SCADA functionality and alarm logic
- Test emergency stops, interlocks, and shutdown sequences
- Re-energise circuits gradually under supervision

6. Check digester biological stability

Confirm the biology was not disrupted by the fire or shutdown.

- Measure pH, alkalinity, VFA, ammonia, and temperature
- Check mixing systems and pumps for correct operation
- Verify gas production levels and substrate feed stability
- Adjust feed rates if biology is stressed

7. Restart CHP and plant systems in controlled sequence

Bring the plant back online gradually to avoid electrical or biological shocks.

- Start blowers, mixers, and circulation pumps first
- Resume substrate feed at reduced rate
- Start CHP engines once gas quality and pressure are stable
- Monitor engine temps, exhaust, and electrical load
- Log all readings for the first 24 hours

8. Conduct post-restart monitoring and reporting

Ensure stable operation and compliance with regulatory and insurer requirements.

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- Monitor gas flow, H₂S, O₂, and methane levels
- Check for abnormal vibrations, noise, or smells
- Review SCADA alarms and trends hourly
- Submit incident and restart report to EA, insurer, and operator management

Appendix 1

List of POPs

As outlined in [Using persistent organic pollutants \(POPs\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/using-persistent-organic-pollutants-pop) April 2024

The following substances are classified as POPs.

Endosulfan

Chemical formula: not available

CAS numbers:

- 115-29-7
- 959-98-8
- 33213-65-9

EC number: 204-079-4

Tetrabromodiphenyl ether

Chemical formula: C₁₂H₆Br₄O

CAS number: 40088-47-9 and others

EC number: 254-787-2 and others

Pentabromodiphenyl ether

Chemical formula: C₁₂H₅Br₅O

CAS number: 32534-81-9 and others

EC number: 251-084-2 and others

Bis(pentabromophenyl) ether (decabromodiphenyl ether, decaBDE)

Chemical formula: not available

CAS number: 1163-19-5

EC number: 214-604-9

Perfluorooctane sulfonic acid (PFOS) and [PFOS derivatives](#)

Chemical formula: C₈F₁₇SO₂X, where X is OH, metal salt (O-M⁺), halide, amide, and other derivatives including polymers

CAS numbers:

- 1763-23-1
- 2795-39-3
- 29457-72-5
- 29081-56-9
- 70225-14-8
- 56773-42-3
- 251099-16-8
- 4151-50-2
- 31506-32-8
- 1691-99-2
- 24448-09-7
- 307-35-7 and others

EC numbers:

- 217-179-8
- 220-527-1
- 249-644-6
- 249-415-0
- 274-460-8
- 260-375-3
- 223-980-3
- 250-665-8
- 216-887-4
- 246-262-1
- 206-200-6 and others

DDT

Chemical formula: (1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane)

CAS number: 50-29-3

EC number: 200-024-3

Hexachlorocyclohexanes, including lindane

Chemical formula: not available

CAS numbers:

- 58-89-9
- 319-84-6
- 319-85-7
- 608-73-1

Dieldrin

Chemical formula: not available

CAS number: 60-57-1

Chlordane

Chemical formula: not available

CAS number: 57-74-9

EC number: 200-349-0

EC numbers:

- 200-401-2
- 206-270-8
- 206-271-3
- 210-168-9

EC number: 200-484-5

Endrin

Chemical formula: not available

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CAS number: 72-20-8

EC number: 200-775-7

Heptachlor

Chemical formula: not available

CAS number: 76-44-8

EC number: 200-962-3

Hexachlorobenzene (HCB)

Chemical formula: not available

CAS number: 118-74-1

EC number: 204-273-9

Chlordecone

Chemical formula: not available

CAS number: 143-50-0

EC number: 205-601-3

Aldrin

Chemical formula: not available

CAS number: 309-00-2

EC number: 206-215-8

Pentachlorobenzene

Chemical formula: not available

Hexabromocyclododecane (HBCD)

'Hexabromocyclododecane' means: hexabromocyclododecane, 1,2,5,6,9,10-hexabromocyclododecane and its main diastereoisomers:

- alpha- hexabromocyclododecane
- beta-hexabromocyclododecane
- gamma-hexabromocyclododecane

Chemical formula: not available

CAS numbers:

- 25637-99-4
- 3194-55-6
- 134237-50-6
- 134237-51-7
- 134237-52-8

EC numbers:

- 247-148-4
- 221-695-9

Hexachlorobutadiene

Chemical formula: not available

CAS number: 87-68-3

EC number: 201-765-5

Pentachlorophenol and its salts and esters

Chemical formula: not available

CAS number: 87-86-5 and others

EC number: 201-778-6 and others

Polychlorinated naphthalenes

These are chemical compounds based on the naphthalene ring system, where one or more hydrogen atoms have been replaced by chlorine atoms.

Chemical formula: not available

CAS number: 70776-03-3 and others

EC number: 274-864-4 and others

Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)

Chemical formula: not available

CAS number: 85535-84-8 and others

EC number: 287-476-5

Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds

Chemical formula: not available

CAS number: 335-67-1 and others

EC number: 206-397-9 and others

CAS number: 608-93-5

EC number: 210-172-0

Polychlorinated biphenyls (PCBs)

Chemical formula: not available

CAS number: 1336-36-3 and others

EC number: 215-648-1 and others

Mirex

Chemical formula: not available

CAS number: 2385-85-5

EC number: 219-196-6

Toxaphene

Chemical formula: not available

CAS number: 8001-35-2

EC number: 232-283-3

Hexabromobiphenyl

Chemical formula: not available

CAS number: 36355-01-8

EC number: 252-994-2

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Perfluorohexane sulfonic acid (PFHxS), its salts, and PFHxS-related compounds

Chemical formula: not available

CAS number: 355-46-4 and others

EC number: 206-587-1 and others

General exceptions to the ban on POPs

You can use substances or materials containing POPs:

- for laboratory-scale research
- as a reference standard, to calibrate scientific or analytical equipment
- if the POP occurs as an unintentional trace contaminant in substances, 'preparations' (mixtures or solutions containing 2 or more substances) or 'articles' (such as manufactured products like textiles or computers)

When POPs are unintentional trace contaminants

These brominated diphenyl ethers are considered to be unintentional trace contaminants when they're present in substances at concentrations of no more than 10mg per kg (0.001% of the overall weight):

- tetrabromodiphenyl ether
- pentabromodiphenyl ether
- hexabromodiphenyl ether
- heptabromodiphenyl ether
- decabromodiphenyl ether

They are also considered to be unintentional trace contaminants when they're present in preparations and articles at concentrations up to 500mg per kg for the sum of the listed substances.

PFOS and PFOS derivatives are considered to be unintentional trace contaminants when they're present in:

- substances or preparations at concentrations of no more than 10mg per kg (0.001% of the overall weight)
- textiles or other coated materials at a concentration below 1µg (0.000001 grams) per square metre of the coated material
- semi-finished products, or parts of semi-finished products, at a concentration below 0.1% by weight of the parts of the product that contain PFOS (for example, if a 100kg semi-finished product includes a 1kg component that contains PFOS, the PFOS is considered an unintentional trace element if it weighs less than 1g)

Semi-finished products are products partially assembled or manufactured in one country and completed in another country where they're sold.

Hexabromocyclododecane is considered to be unintentional trace contaminant when the concentration is equal to or below 100mg per kg (0.01% by weight) in substances, preparations, articles or in parts of articles that are flame-retardant.

PFOA and its salts are generally unintentional trace contaminants in substances, mixtures or articles at 0.025 mg per kg, and at 1 mg per kg for the individual PFOA-related compounds or a combination of those compounds. Higher limits have been set for certain specific applications.

PFHxS and its salts are considered to be unintentional trace contaminants when the sum of their concentrations is equal or less than 0.025 mg per kg in a substance, mixture or article. For PFHxS-related compounds, the limit for the sum of their concentrations is equal or less than 1 mg per kg. There is a separate unintentional trace contamination level for fire-fighting foam mixtures that are to be used, or are used in the production of other fire-fighting foam mixtures, where the sum concentration of PFHxS, any of its salts, and any PFHxS-related compounds must be equal or less than 0.1 mg per kg.

If you're using a substance, preparation or product that contains any other POP, email chemicalrestrictions@environment-agency.gov.uk to find out when the POP is considered an unintentional trace element.

Specific exceptions to the ban on POPs

Brominated diphenyl ethers

You can manufacture, sell and use products containing brominated diphenyl ethers (tetrabromodiphenyl ether, pentabromodiphenyl ether, hexabromodiphenyl ether, heptabromodiphenyl ether and decabromodiphenyl ether) if it is electrical or electronic equipment covered by and compliant with the [RoHS regulations](#).

You can also continue to use articles (such as manufactured products) containing these brominated diphenyl ethers if the products were in use in the European Union:

- before 25 August 2010
- before 15 July 2019 for decaBDE

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Decabromodiphenyl ether

There are some exemptions for the manufacture, placing on the market and use of DecaBDE in products for aircraft and vehicles. Those products must be labelled throughout their life cycle to show that they contain the substance. For more information email chemicalrestrictions@environment-agency.gov.uk

PFOS and derivatives – exceptions to the ban

You can use material or products containing [PFOS and PFOS derivatives](#) in mist suppressants for non-decorative hard chromium (VI) plating in closed loop systems.

You can also continue to use articles (such as manufactured products) that contain PFOS or PFOS derivatives, if the products were in use in the European Union before 25 August 2010.

You must use the [best available techniques](#) to minimise the quantity of PFOS and PFOS derivatives you release into the environment.

SCCPs

You can manufacture, sell and use products containing SCCPs (short-chain chlorinated paraffins) if the concentration is below 1% by weight for substances or preparations, or below 0.15% by weight for articles (for example, manufactured products).

Mining conveyor belts and dam sealants that contain SCCPs can continue to be used if they were already in use on 4 December 2015. You can continue to use any other article that contains SCCPs if it was already in use on 10 July 2012.

HBCD

You can continue to use:

- expanded polystyrene (EPS) articles containing HBCD already in use in buildings before 21 February 2018
- extruded polystyrene articles containing HBCD already in use in buildings before 23 June 2016

All HBCD-containing EPS that was produced or imported after 23 March 2016 must be labelled or otherwise identified throughout its life cycle to show that it contains HBCD.

PFOA

PFOA and related compounds may remain present for a limited time in certain existing fire suppression installations (conditions apply). There are also time-limited exemptions for a range of manufacturing processes.

For more information email chemicalrestrictions@environment-agency.gov.uk.

PCBs

Find out about [additional requirements for material containing PCBs](#).

Other POPs

You can continue to supply and use articles (such as manufactured products) containing the following POPs, if the products were in use in the European Union before or on 10 July 2012:

- endosulfan
- hexachlorobutadiene