

This Resource Framework applies to England

Guidance

Tyre pyrolysis oil: Resource framework

How to meet 'end of waste' status for tyre pyrolysis oil produced from the pyrolysis of waste tyres.

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This Resource Framework applies to England

1. The Purpose of the Resource Framework

This resource framework relates to tyre pyrolysis oil (TPO) produced from the pyrolysis of waste tyres.

This resource framework is to help you understand when Tyre Pyrolysis Oil is no longer considered waste. Meaning it meets the [‘end of waste’ test](#). This is so you can:

- understand when you no longer need to follow [waste management controls](#) for TPO
- be confident that the quality of TPO produced conforms to an approved standard
- be confident that the quality of TPO produced is suitable for use in appropriate markets
- protect human health and prevent pollution of the environment, including soil

2. Waste you can use

To follow this resource framework you must only use:

Waste which is compliant with the waste codes, descriptions and restriction in the following table

‘Use’ refers to the waste types which is fed into the pyrolysis treatment phase of the process):

Waste code	Waste description
16 01 03	End-of-life tyres
19 12 04	Shredded tyres or tyre crumb only

3. When TPO is no longer considered waste

Tyre Pyrolysis Oil will have met the [end of waste test](#), and so not be

considered waste anymore, if you can show all of the following:

- It has been produced from the pyrolysis of approved waste materials approved in the **‘Waste you can use’ section**
- You have stored and processed the waste correctly, meeting all the conditions of your environmental permit for the pyrolysis of tyres
- TPO is sent only to a refinery for processing into marketable products
- It meets the specification in the ‘Standards and Specifications which apply to this Resource Framework’ section plus any further specifications agreed with the refinery which takes the TPO
- It is sent to a refinery with all appropriate permissions to allow its acceptance
- There is certainty of use for the material (see note below)

Note - TPO being stored in intermediate storage (either on or off the site of production) with no identified end user will be regarded as waste and will be subject to [waste management controls](#).

4. How to meet the requirements of this Resource Framework

4.1 Store waste correctly

You shall comply with your environmental permit and follow waste [management controls](#)

4.2 Process the waste following:

The specifications defined in section 7 of this Resource Framework

4.3 Record your outgoing product

This includes producing and keeping a copy of customer supply documentation and must contain a declaration that the final product meets all of the following:

- the approved standard

- the resource framework
- any additional customer specifications (as agreed between the supplier and the customer)

4.4 Compliance with refinery permit requirements

All refineries accepting TPO shall have an Environmental Permit and be authorised to accept and process TPO.

4.5 Requirement to comply with regulations outside of waste regulations

Compliance with this Resource Framework does not affect producers of TPO's obligation to comply with other relevant legislation where applicable e.g. UK REACH

5. TPO destined for other uses: loss of non-waste status

Resource Framework compliant TPO will become waste again and subject to waste management controls if at any stage:

- you discard it;
- you plan to discard it;
- it is sent to a refinery which does not have an environmental permit and the appropriate permissions to receive it;
- It is sent for any use other than to a permitted refinery for processing into marketable products;
- it is required to be discarded;
- it is stored indefinitely with little prospect of being used.

This applies to anyone holding stores of TPO, not just producers.

Further guidance on when a material is waste can be found here: [check-if-your-material-is-waste](#)

6. Mixing compliant products with waste and non-waste

If you mix the Resource Framework compliant TPO with;

Other waste, including waste oils, the whole mixed volume becomes waste, and you shall apply waste management controls

Non-waste material, the whole volume is non-waste if it meets the specification of the refinery and resulting specifications for the end products.

Note - Mixing TPO compliant with this Resource Framework with non-waste materials (for example crude oil) is not considered further treatment.

Guidance on waste management controls can be obtained from the Environment Agency's National Customer Contact Centre on **08708 506 506**, from its website (<http://www.environment-agency.gov.uk/subjects/waste/>)

7. Standards and Specifications which apply to this Resource Framework

7.1 Analysis Requirements

To demonstrate compliance with the relevant Standards and Specification of this Resource Framework, analysis of each batch of TPO must be carried out prior to dispatch from the tyre pyrolysis plant.

7.2 Testing

Properties of the TPO shall not exceed the maximum set out in the specification detailed in section 7.3 of this Resource Framework.

7.3 Specification for TPO

The final specification shall be agreed between the TPO producer and the receiving refinery. The minimum standard for specification and test methods which should be used and the acceptable limits for the production of TPO for use as a refinery feedstock are as detailed below:

Property	Units	Limit	Test Method
Kinematic viscosity at 20°C	mm ² /s	15	IP 71
Sulphur content	% mass	2	IP 336
Total acid number	mg KOH/g	20	ASTM D664
Total halogens (as chlorine)	mg/kg	150	IP 503
Aluminium	mg/kg	15	IP 592
Arsenic	mg/kg	5	IP 592
Cadmium	mg/kg	5	IP 592

Chromium	mg/kg	5	IP 592
Cobalt	mg/kg	5	IP 592
Copper	mg/kg	5	IP 592
Iron	mg/kg	50	IP 610
Lead	mg/kg	5	IP 592
Manganese	mg/kg	15	IP 592
Mercury	mg/kg	0.01	IP 594
Nickel	mg/kg	5	IP 592
Phosphorus	mg/kg	10	IP 610
Titanium	mg/kg	10	IP 592
Vanadium	mg/kg	15	IP 592
Zinc	mg/kg	15	IP 592

8. Updates to this resource framework

This document will be reviewed regularly. This document may be subject to change before these review dates. Triggers for such a change could include:

- pollution incidents
- the resource framework being used incorrectly
- developments in scientific understanding
- a change in the market
- a change in legislation or case law
- a change to the agreed industry standard or input materials

This Resource Framework will be reviewed by **DD/MM/YYYY (three years from the date of publication)**

The Environment Agency will seek support from industry in reviewing this document.

This Resource Framework may be withdrawn if it becomes apparent that it is generally being misapplied and/or misused.

You can subscribe to email updates about this resource framework. These will tell you if it has changed and when it has been withdrawn. Use the 'Get emails about this page' link at the top of this guide.

9. If you have questions about this resource framework

General enquiries

National Customer Contact Centre
PO Box 544
Rotherham
S60 1BY

Email enquiries@environment-agency.gov.uk

Telephone 03708 506 506

Telephone from outside the UK (Monday to Friday, 8am to 6pm GMT) +44 (0)
114 282 5312

Monday to Friday, 8am to 6pm.