

MATERIALS USED IN THE TREATMENT AND DISTRIBUTION OF DRINKING WATER

TESTING OF POWDERED ACTIVATED CARBON.
[BS EN 12902:2004/12903:2003]

TEST REPORT.

Product : Eurocarb Virgin Cocount Shell Based Activated Carbon
Report Reference : M 105226
Page 1 of 4 Pages.

Eurocarb Products Limited
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Avonmouth
Bristol
BS11 8DF

Report Date : 16th March 2012

Executive Summary - leachates were prepared from this product in accordance with BS EN 12902:2004. These leachates were analysed for the determinands specified in BS EN 12903:2009. The samples of this product were found to conform with the test requirements of BS EN 12903:2009.

NOTES.

1. The results given in this report relate only to the sample of this product tested and not necessarily to the bulk from which it was taken.
2. This test work was undertaken in the UKAS accredited Spencer House laboratory of Thames Water Utilities Ltd., UKAS registration number 0677, unless otherwise stated.
3. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
4. This test report shall not be reproduced, except in full, without our prior written approval.

MATERIALS USED IN THE TREATMENT AND DISTRIBUTION OF DRINKING WATER TESTING OF POWDERED ACTIVATED CARBON. [BS EN 12902:2004/12903:2009].

1. SAMPLES FOR TESTING.

General Composition of Material	Powdered Activated Carbon
Trade Name/Reference of Product	Eurocarb Virgin Coconut Shell Based Activated Carbon
Product Manufacturer	Haycarb PLC
Submitting Organisation	Eurocarb Products Limited
Date of manufacture/production	20 th May 2011
Production batch numbers	2011/H446
Appearance of Test Samples	Black powder
Date of Receipt of Test Samples	2 nd February 2012
Date Test Started	8 th February 2012

2. LEACHATE PREPARATION.

Leachate preparation was in accordance with clause 6.3.5.1 of BS EN 12902:2004 (Products used for treatment of water intended for human consumption - Inorganic supporting and filtering materials - Methods of test).

2.1. Test Water.

This was prepared in accordance with clause 6.3.2.4 of BS EN 12902:2004, using tap water treated on-site using the following sequence - granular activated carbon bed followed by reverse osmosis, storage, followed by mixed bed ion-exchange resin, granular activated carbon bed, 0.45µ filtration, ultra violet disinfection and finally 0.2µ filtration.

3. ANALYSIS AND RESULTS.

These are given in full on the following pages.

4. COMMENT.

Leachates from the sample of this material, prepared in accordance with BS EN 12902:2004, were analysed using the methods described on the following results pages, and found to comply with the requirements set out in 6.2.3 of BS EN 12903:2009 (Products used for treatment of water intended for human consumption - Powdered activated carbon).



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Materials Testing Analytical Consultant

**MATERIALS USED IN THE TREATMENT AND DISTRIBUTION OF DRINKING WATER
TESTING OF POWDERED ACTIVATED CARBON. [BS EN 12902:2004/12903:2009].**

TEST RESULTS.

1. EXTRACTION OF METALS & CYANIDE.

PRODUCT : Eurocarb Virgin Coconut Shell Based Activated Carbon

Temperature of leachate preparation : (20±2)°C

The following results were obtained on the leachates prepared from this product.

Element	Limit in the extraction water	Reporting Limit	Test Results		
			Sample		Reagent Blank
	mg/kg	µg/l	µg/l	mg/kg ¹	µg/l
Antimony	5	0.5	<0.5	<0.5	<0.5
Arsenic	10	0.3	<0.3	<0.3	<0.3
Cadmium	5	0.2	<0.2	<0.2	<0.2
Chromium	50	1.2	4.5	<1.2	4.1
Lead	10	0.3	<0.3	<0.3	<0.3
Mercury	1	0.12	<0.12	<0.12	<0.12
Nickel	20	1.6	4.4	<1.6	4.0
Selenium	10	0.8	<0.8	<0.8	<0.8
Cyanide*	50	1.0	<1.0	<1.0	<1.0

¹ Value calculated in accordance with 6.3.5.2 of BS EN 12902:2004

Analytical methods.

Antimony, arsenic, cadmium, chromium, lead, mercury, nickel and selenium - inductively coupled plasma mass spectrometry [method code 563].

**Cyanide* - Skalar Robot [method code 294].

NOTE - These techniques are in continuous use for analysis of drinking water metals; all of these techniques are fully validated to the requirements of "A Manual on Analytical Quality Control for the Water Industry" (NS 30) and the requirements laid down by the Drinking Water Inspectorate. Each technique has a comprehensive AQC protocol including control solutions and spike recovery testing with each batch of samples for analysis. **The methods for the analysis of metals and cyanide are included in our scope of UKAS (BS EN ISO 17025) accreditation.**

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TESTING OF POWDERED ACTIVATED CARBON. [BS EN 12902:2004/12903:2009].**

TEST RESULTS.

2. EXTRACTION OF POLYCYCLIC AROMATIC HYDROCARBONS.

PRODUCT : Eurocarb Virgin Coconut Shell Based Activated Carbon

Temperature of Extraction : (20±2) °C

The following results were obtained on the leachates prepared from this product.

Determinand	Limit in the extraction water	Reporting Limit	Test Results		
			Sample		Reagent Blank
	mg/kg	µg/l	µg/l	mg/kg ¹	µg/l
Benzophiperylene	--	0.001	0.001	≤0.001	<0.001
Benzo<A>pyrene	--	0.001	<0.001	<0.001	<0.001
Benzofluoranthene	--	0.001	<0.001	<0.001	<0.001
Benzo<K>fluoranthene	--	0.001	<0.001	<0.001	<0.001
Fluoranthene	--	0.005	<0.005	<0.005	<0.005
Indenol-(1,2,3-cd)-pyrene	--	0.001	<0.001	<0.001	<0.001
Total PAH	0.2	--	0.001	≤0.001	0.000

¹ Value calculated in accordance with 6.3.5.2 of BS EN 12902:2004

Analytical method.

Polycyclic aromatic hydrocarbons (PAHs) were extracted by automated shaking of the sample with 2,2,4-trimethyl pentane in the presence of an internal standard. The extracts were then concentrated by evaporation and transferred to autosampler vials prior to injection onto a high performance liquid chromatography system coupled to a programmable fluorescence detector. The components were separated using isocratic solvent elution and detected by the fluorescence detector.

The responses obtained were subsequently automatically calculated with reference to a calibration curve produced from a series of standard PAH solutions treated similarly. Electronic integration was used for the measurement of peak areas and subsequent quantification [method code LP/R/409].

NOTE - This technique is in continuous use for analysis of drinking water samples and is validated to the requirements of "A Manual on Analytical Quality Control for the Water Industry" (NS 30) and the requirements laid down by the Drinking Water Inspectorate. This technique has a comprehensive AQC protocol including control solutions and spike recovery testing with each batch of samples for analysis - full details available upon request. **These methods are included in our scope of UKAS (BS EN ISO 17025) accreditation.**