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19 April, 2002

REPORT NUMBER: M220238
Site/Client Ref: Recoverit
Order No: 00100

PG Engineering
PO Box 338
Lavington, NSW
2641

Attention: Paul Azzi

CERTIFICATE OF ANALYSIS

SAMPLES: One sample was received for analysis.

DATE RECEIVED: 14th March, 2002

DATE COMMENCED: 21st March, 2002

METHODS: **As per attached pages.**

RESULTS: Please refer to attached pages for results.

Note: Results are based on samples as received at Leeder Consulting's laboratories

REPORT BY:

Kellie Jones

for **Adam Atkinson**
Senior Chemist

FLAMMABILITY RESULTS

1. INTRODUCTION

Mr Azzi of PC Engineering requested a series of tests to be performed on a sorbent material product. One of the tests requested was Ignitability of Solids.

2. ANALYTICAL METHODOLOGY

The sample was prepared and analysed as outlined in the US EPA SW-846 Test Methods for Evaluating Solid Waste Physical / Chemical Methods – Method 1030, Ignitability of Solids. The Test Method is based on the Test procedure adopted by the Department of Transport from the United Nations regulations for the international transportation of dangerous goods and is contained in Appendix E to part 173 of 49 CFR.

3. SCOPE AND APPLICATION

This method is suitable for the determination of the ignitability of solids and is appropriate for a range of materials including pastes, granular materials, solids that can be cut into strips, and powdery substances. This method may be used to meet certain international regulatory applications; with respect to the characteristic of ignitability in CFR 261.21, this method may be used, but is not required, to determine whether a solid waste "when ignited burns so vigorously and persistently that it creates a hazard".

4. SUMMARY OF METHOD

This method consists of 2 parts. In a preliminary test, the material is formed into an unbroken strip or powder train and an ignition source applied to one end. If the combustion propagates along a certain length within a specified time, the material is then subjected to a burning rate test. This measures what the burning time is over a specified distance, and determines the rate of burning. This procedure is repeated 3 times for each sample.

Materials that do not ignite or propagate combustion as specified in the preliminary test, do not require further testing.

5. SAMPLE DESCRIPTIONS and RESULTS

All tests were performed at a room temperature of 22°C on a clean ceramic plate. The initial temperatures of the materials were checked with a thermocouple prior to testing and all were found to be at the room temperature of 22°C.

The following sample was submitted for analysis, labelled as follows and analysed as received.

RECOVERIT (Lab ID M2002001879)

The product is a white granular (non-metallic) material.

During the preliminary test, the material was laid on the test tile using the powder train mould and the ignition source applied at one end. The material smouldered and decomposed into a molten "plastic like" liquid while the flame was applied. Combustion did not propagate along the 200mm strip within the 2 minute specified time period.

The absorbent material is therefore not considered flammable according to the Ignitability of Solids Test Procedure.

(I) RESULTS

Matrix: Bulk Material

Analyte	Sample Id	Recoverit	Method Blank
	Leeder Id	*2002001879*	-
	PQL		
MA-1400 Metals			
Aluminium	5	**86**	nd
Antimony	5	nd	nd
Arsenic	5	nd	nd
Barium	2	nd	nd
Berillium	2	nd	nd
Cadmium	1	nd	nd
Chromium	2	nd	nd
Cobalt	2	nd	nd
Copper	5	**19**	nd
Lead	5	nd	nd
Manganese	5	**41**	nd
Molybdenum	5	nd	nd
Nickel	2	nd	nd
Selenium	5	nd	nd
Silver	5	nd	nd
Strontium	5	**24**	nd
Thallium	5	nd	nd
Tin	5	nd	nd
Titanium	5	**5.4**	nd
Vandium	2	nd	nd
Zinc	5	**6000**	nd
Mercury	1	nd	nd
Boron	5	nd	nd

PQL-Practical quantitation limit.
Results are reported in mg/kg on dry weight basis, unless otherwise stated

RESULTS

Matrix: water

Analyte	Sample Id	Recoverit 1% Leachate	Recoverit 5% Leachate
	Leeder Id	*20020021879*	*20020021879*
MA-100 Microtox			
15 min EC50 (15 degrees C; 3% NaCl) % effluent concentration		**32**	**9.4**
Daphnia Test 48h acute EC50 % leachate concentration		**29**	
QC: Reference Standard; Phenol (mg/L)		23.1	C.I. 21.9-24.4

NOTE: Where EC50>100, the response although significant, was not sufficiently large to permit calculation of an EC50. The value in italics is EC10, the concentration giving a 10% response.

NMT: No measurable toxicity indicates that there was no significant difference between the reponse in the lowest and highest concentration tested

C.I.: 95% confidence interval

(II) QUALITY CONTROL RESULTS

	Sample Id	Recoverit
	Leeder Id	*2002001879*
		Spike
MA-1400 Metals		
Aluminium		96
Antimony		94
Arsenic		96
Barium		95
Berillium		91
Cadmium		101
Chromium		96
Cobalt		91
Copper		102
Lead		100
Manganese		98
Molybdenum		92
Nickel		93
Selenium		94
Silver		91
Strontium		91
Thallium		88
Tin		91
Titanium		93
Vandium		91
Mercury		92
Boron		99

PQL-Practical quantitation limit.
LCS - Laboratory Control Sample
QC results are expressed as % recovery of lab spikes and expected result of LCS