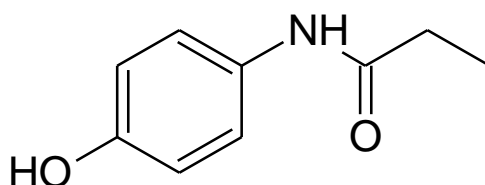


## Reference Material Product Information Sheet

Epichem's Quality System conforms to ISO9001:2015 as certified by ECAAS Pty Ltd - Certification number 616061.



<b>Name</b>	N-(4-hydroxyphenyl)propanamide
<b>BP Name</b>	Paracetamol Impurity B
<b>Synonym(s)</b>	N-(4-hydroxyphenyl)propionamide; propionic acid (4-hydroxyanilide)
<b>Epichem Item #</b>	EPL-AA111 Batch 2
<b>CAS #</b>	1693-37-4
<b>Molecular Formula</b>	C <sub>9</sub> H <sub>11</sub> NO <sub>2</sub>
<b>Molecular Weight</b>	165.19 g/mol
<b>Appearance</b>	White powder
<b>Melting Point</b>	168.0-172.6°C
<b>Combustion Analysis</b>	Required (%): C:65.4; H:6.7; N:8.5. Found (%): C:65.5; H:6.9; N:8.4.
<b>Purity</b>	99.5%
<b>Date of Manufacture</b>	23 May 2012
<b>Storage Requirements</b>	Protect from heat, light, moisture and air.
<b>Special Precautions</b>	<b>This compound is for laboratory use only. Its toxicological properties may not have been fully established. It should be handled only by suitably qualified personnel.</b>
<b>Date of Shipment</b>	TBA This certificate is valid for one year from the date of shipment provided the substance is stored under the recommended conditions.
<b>Retest Date</b>	TBA (Proper Storage and Handling Required)

EPL-AA111 Batch 2

Epichem Pty Ltd, Suite 5, 3 Brodie-Hall Drive, Bentley WA 6102, Australia

Tel + 61 (0)8 6167 5200

Fax + 61 (0)8 6167 5201

www.epichem.com.au

ABN 80 106 769 902

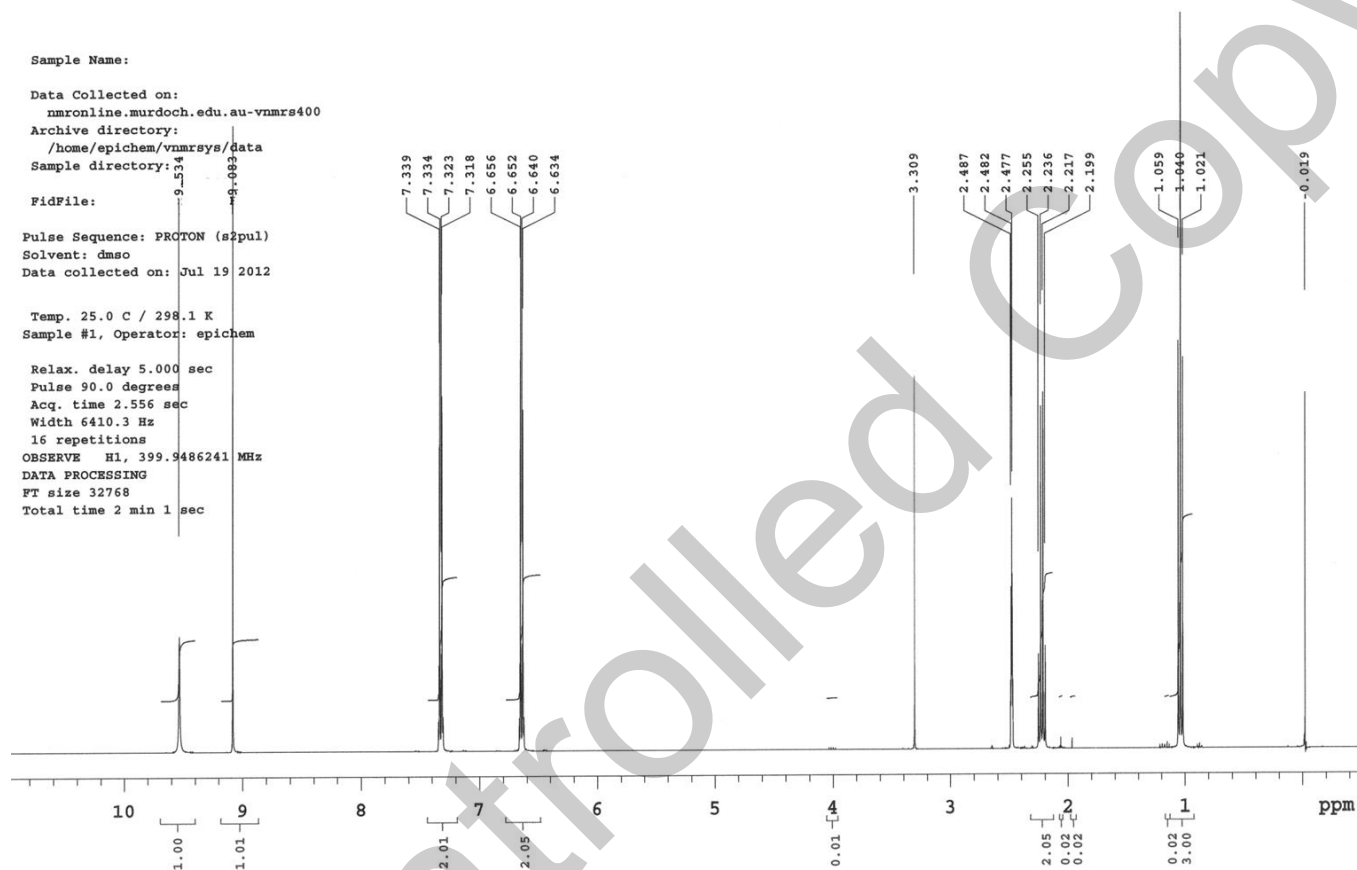
## I. Identity

The identity of this product was established using the following analyses:

### Ia. <sup>1</sup>HNMR Spectrum

Conditions: 400 MHz, DMSO-d<sub>6</sub>

<sup>1</sup>HNMR spectrum consistent with chemical structure.



EPL-AA111 Batch 2

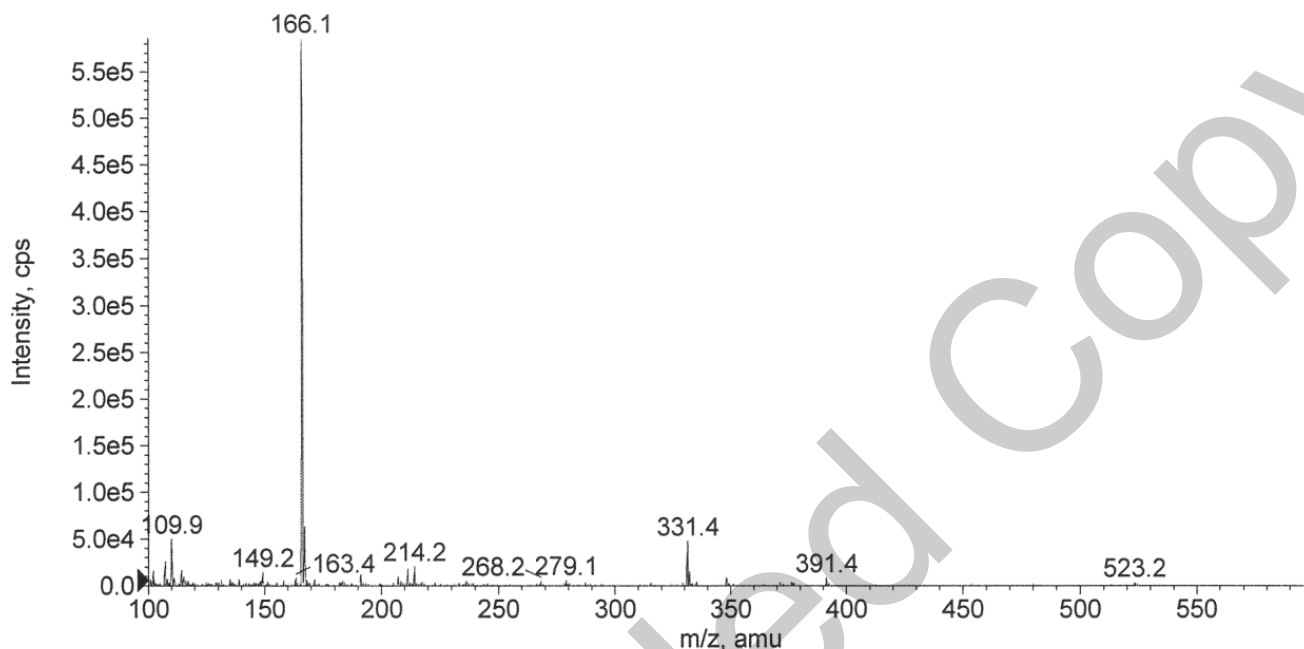
Epichem Pty Ltd, Suite 5, 3 Brodie-Hall Drive, Bentley WA 6102, Australia  
Tel + 61 (0)8 6167 5200 Fax + 61 (0)8 6167 5201 www.epichem.com.au ABN 80 106 769 902

## Ib. Mass Spectrum

Method: 0% to 100% ACN in water gradient (+0.05% trifluoroacetic acid)

Monitor C18, 50 × 4.6mm, 5µm

+Q1: 4.134 to 4.426 min from Sample 1



Theoretical value: 166.1 [M+H]<sup>+</sup>.

The signal of the Mass Spectrum is consistent with the theoretical value and its interpretation is consistent with the structural formula.

EPL-AA111 Batch 2

Epichem Pty Ltd, Suite 5, 3 Brodie-Hall Drive, Bentley WA 6102, Australia

Tel + 61 (0)8 6167 5200

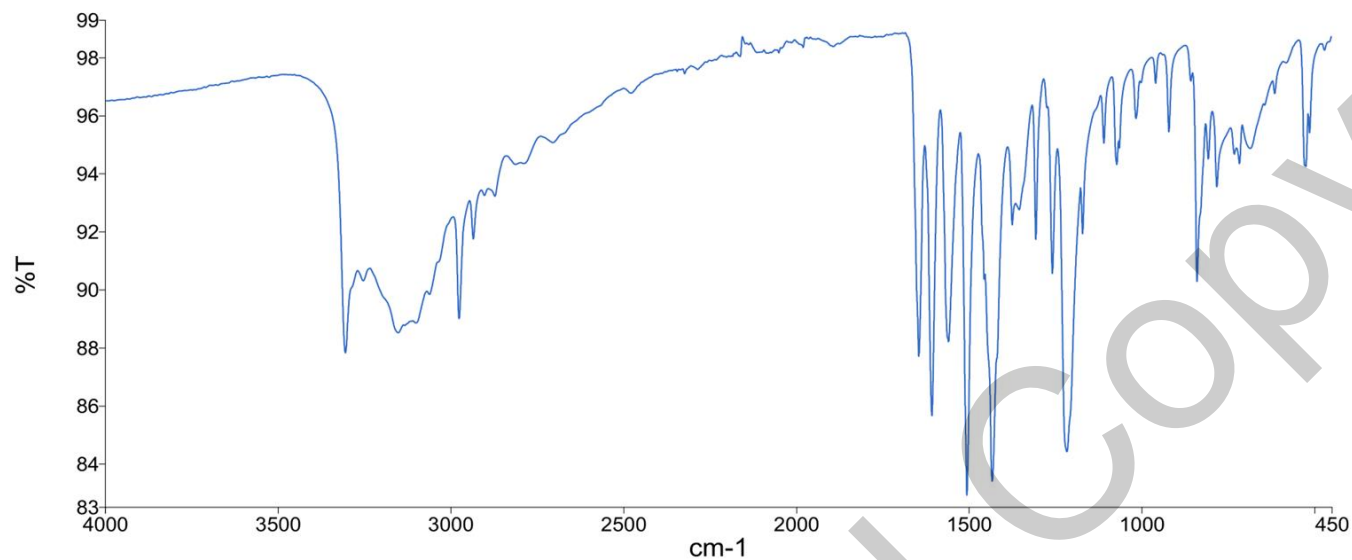
Fax + 61 (0)8 6167 5201

www.epichem.com.au

ABN 80 106 769 902

## Ic. IR Spectrum

Method: Fourier Transform Infrared (FTIR) Spectroscopy



The signals of the IR spectrum and their interpretation are consistent with the structural formula.

EPL-AA111 Batch 2

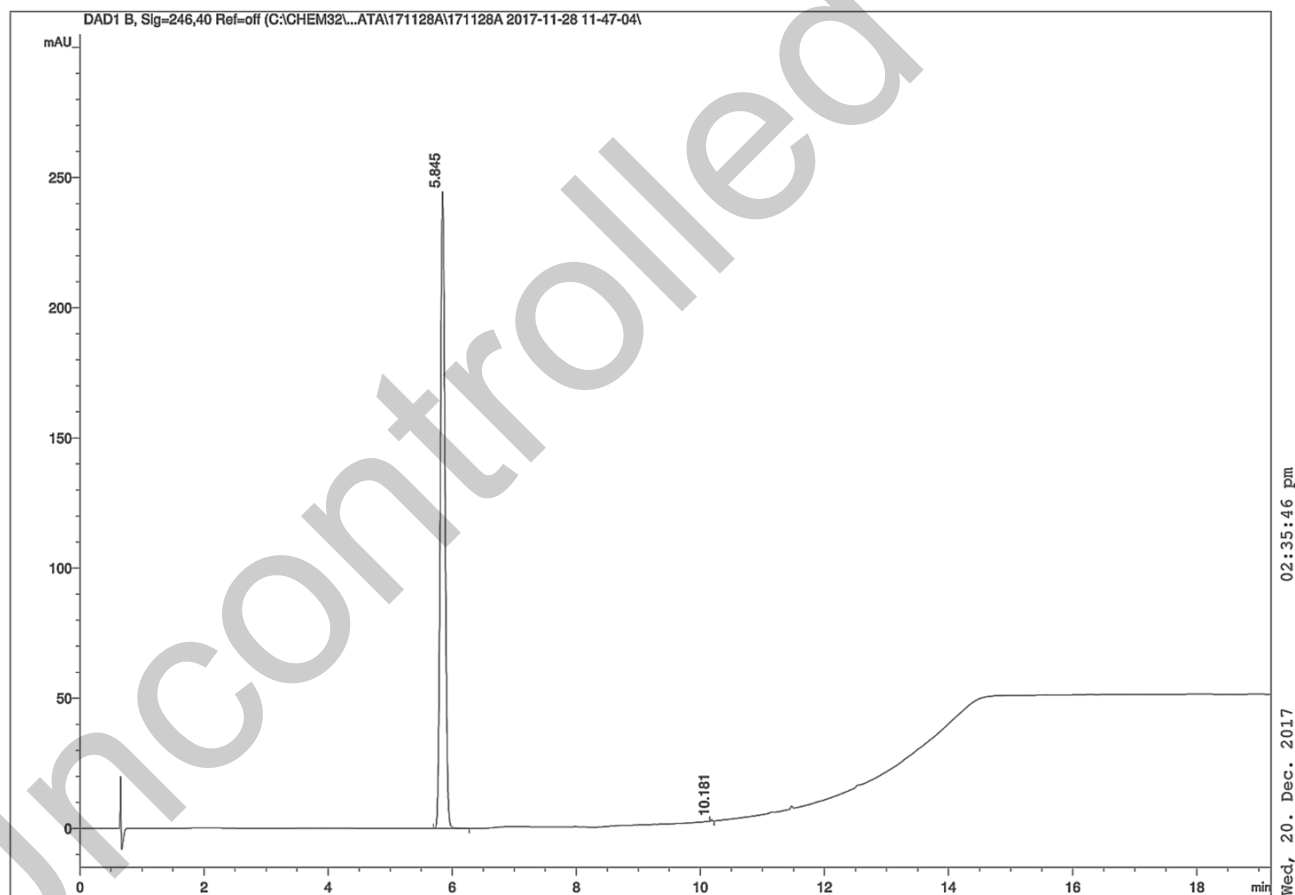
Epichem Pty Ltd, Suite 5, 3 Brodie-Hall Drive, Bentley WA 6102, Australia  
Tel + 61 (0)8 6167 5200 Fax + 61 (0)8 6167 5201 www.epichem.com.au ABN 80 106 769 902

## II. Purity

The purity of this material was analysed by high performance liquid chromatography (HPLC) using in-house EM005.WI07.

### HPLC Conditions:

Column	Conditions				Detector	Injector
Agilent Poroshell 120 EC-C18 4.6 x 50mm 2.7 micron	25°C				DAD 246nm	Auto 1.0 µL 0.40 mg/mL in 100% acetonitrile
	Time (min)	% Line A (Water + 0.1% (v/v) TFA)	% Line B (Acetonitrile + 0.1% (v/v) TFA)	Flow rate (mL/min)		
	0.00	97	3	1.0		
	5.00	92	8	1.0		
	7.00	80	20	1.0		
	13.00	5	95	1.0		
	18.00	5	95	1.0		
	19.00	97	3	1.0		
	24.00	97	3	1.0		



EPL-AA111 Batch 2

Epichem Pty Ltd, Suite 5, 3 Brodie-Hall Drive, Bentley WA 6102, Australia  
Tel + 61 (0)8 6167 5200 Fax + 61 (0)8 6167 5201 www.epichem.com.au ABN 80 106 769 902

### Area Percent Report – Sorted by Signal

Peak Number	Retention Time (rounded)	Area	Area % (rounded)
1	5.85	1263.92	99.92
2	10.18	1.06	0.08
Totals		1264.98	100 (rounded)

For the calculation the system peaks were ignored. The content of the analyte was determined as a ratio of the peak area of the analyte and the cumulative areas of the purities, added up to 100%.

#### Results:

Average 99.9% (average of 10 duplicate runs)

EPL-AA111 Batch 2

Epichem Pty Ltd, Suite 5, 3 Brodie-Hall Drive, Bentley WA 6102, Australia  
Tel + 61 (0)8 6167 5200 Fax + 61 (0)8 6167 5201 www.epichem.com.au ABN 80 106 769 902

### III. Water Content

Method: Karl-Fischer titration using in-house EM005.WI04.

**Results:**

Average <0.1%

### IV. Ash Content

Method: BP2012 Ash

**Result:**

Contains <0.1% ash.

### V. Residual Solvents

Method: <sup>1</sup>HNMR

**Result:**

Contains 0.4% Ethyl acetate by <sup>1</sup>HNMR analysis.

### VI. Final Result

Chromatographic purity (HPLC)	99.9%
Water content	<0.1%
Ash content	<0.1%
Residual solvents	0.4%
Purity*	99.5%

This purity is assessed to be 99.5%.

Product Reviewed By:

Product Released By:

John Moursounidis, PhD  
Head Fine Chemicals and Technical Services

Boon Tan  
Quality Manager

Release Date: 24 January 2018

\*The calculation of the purity follows the formula:

$$\text{Purity(\%)} = \frac{((\text{Chromatographicpurity[HPLC]}) \times (100 - (\text{watercontent} + \text{ashcontent} + \text{volatilecontents})))}{100}$$

EPL-AA111 Batch 2

Epichem Pty Ltd, Suite 5, 3 Brodie-Hall Drive, Bentley WA 6102, Australia

Tel + 61 (0)8 6167 5200

Fax + 61 (0)8 6167 5201

www.epichem.com.au

ABN 80 106 769 902