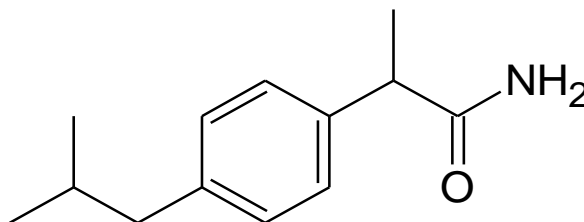


## Reference Material Product Information Sheet

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



<b>Name</b>	( <i>RS</i> )-2-(4-isobutylphenyl)propanamide
<b>BP Name</b>	Ibuprofen Impurity C
<b>Synonym(s)</b>	( <i>RS</i> )-2-(4-isobutylphenyl)propionamide; ( <i>2RS</i> )-2-(4-(2-methylpropyl)phenyl)propanamide
<b>Epichem Item #</b>	EPL-AA38 Batch 3
<b>CAS #</b>	59512-17-3
<b>Molecular Formula</b>	C <sub>13</sub> H <sub>19</sub> NO
<b>Molecular Weight</b>	205.30 g/mol
<b>Appearance</b>	White powder
<b>Melting Point</b>	114.3-120.0°C
<b>Combustion Analysis</b>	Required (%): C:76.1; H:9.3; N:6.8. Found (%): C:76.7; H:8.9; N:6.7.
<b>Purity</b>	99.7%
<b>Date of Manufacture</b>	26 February 2010
<b>Storage Requirements</b>	Protect from heat, light and moisture.
<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 unopened and stored under the recommended conditions.
<b>Retest Date</b>	TBA (Proper Storage and Handling Required)

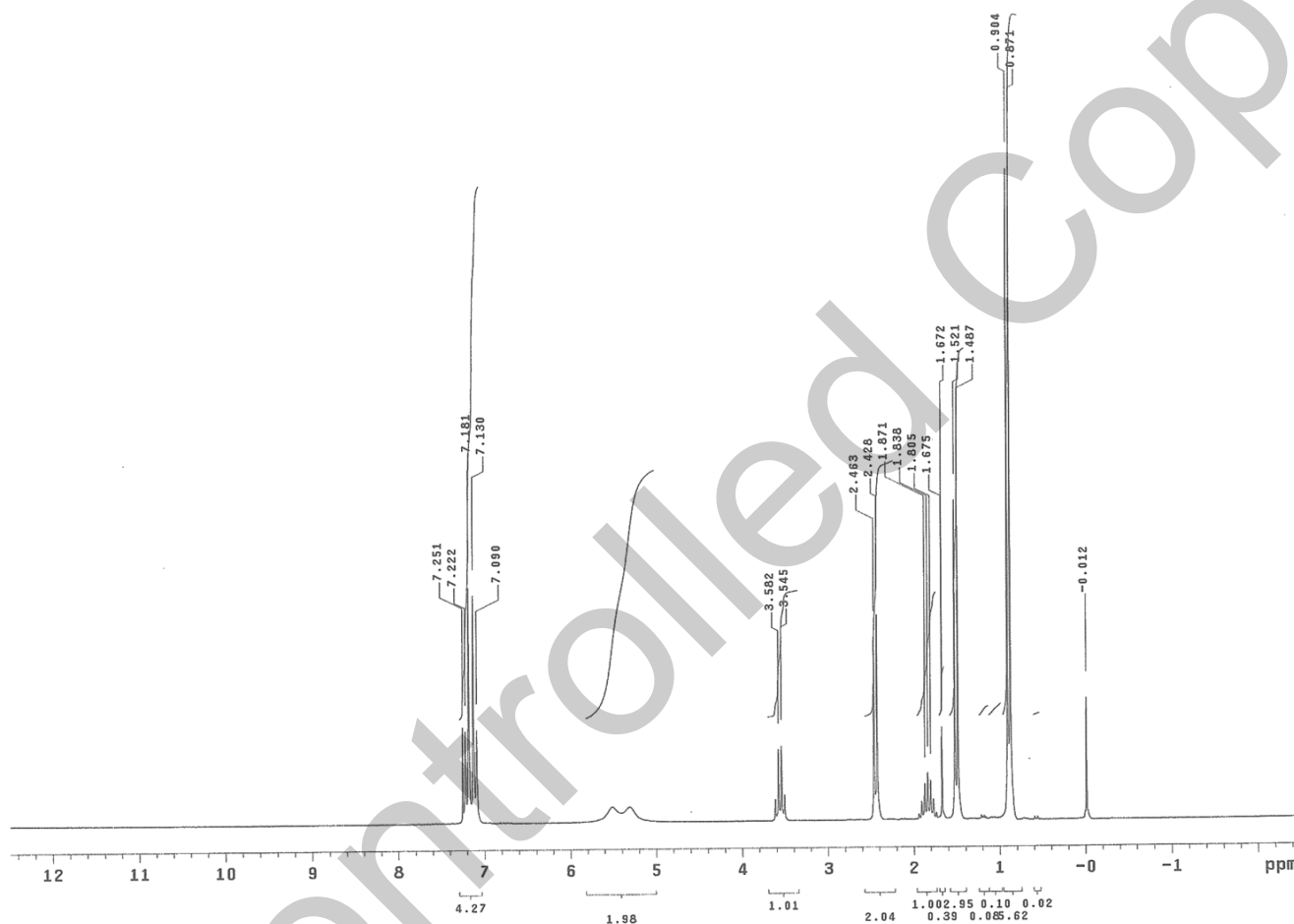
## I. Identity

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

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

Conditions: 200 MHz, CDCl<sub>3</sub>

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



EPL-AA38 Batch 3

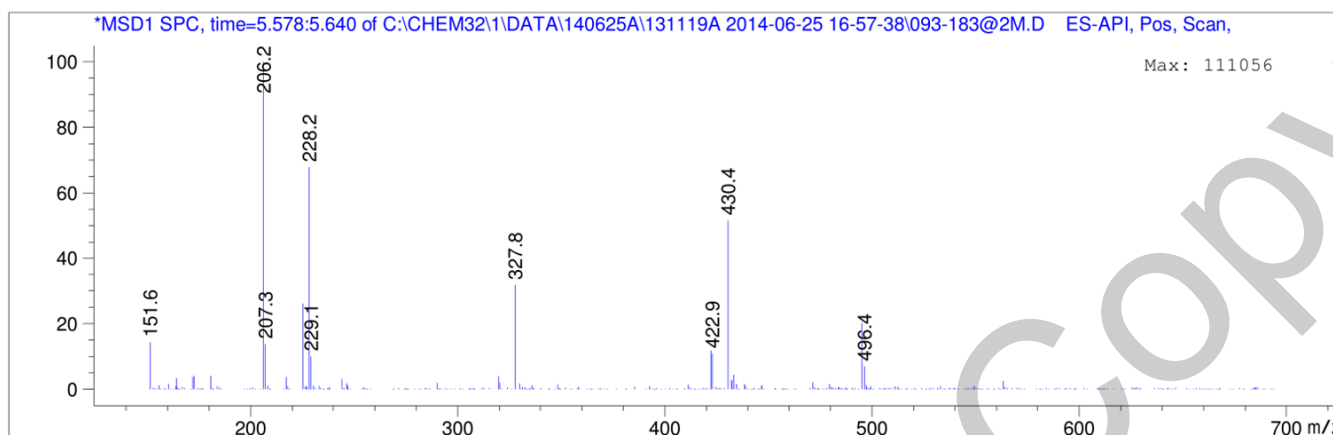
Revision 1

Epichem Pty Ltd, Suite 5, 3 Brodie-Hall Drive, Bentley WA 6102, Australia  
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## Ib. Mass Spectrum

The mass spectrum of this material was analysed by Liquid Chromatography Mass Spectroscopy (LCMS) using in-house EM005.WI08.

Method: 5% to 100% ACN in water gradient (+0.1% formic acid)

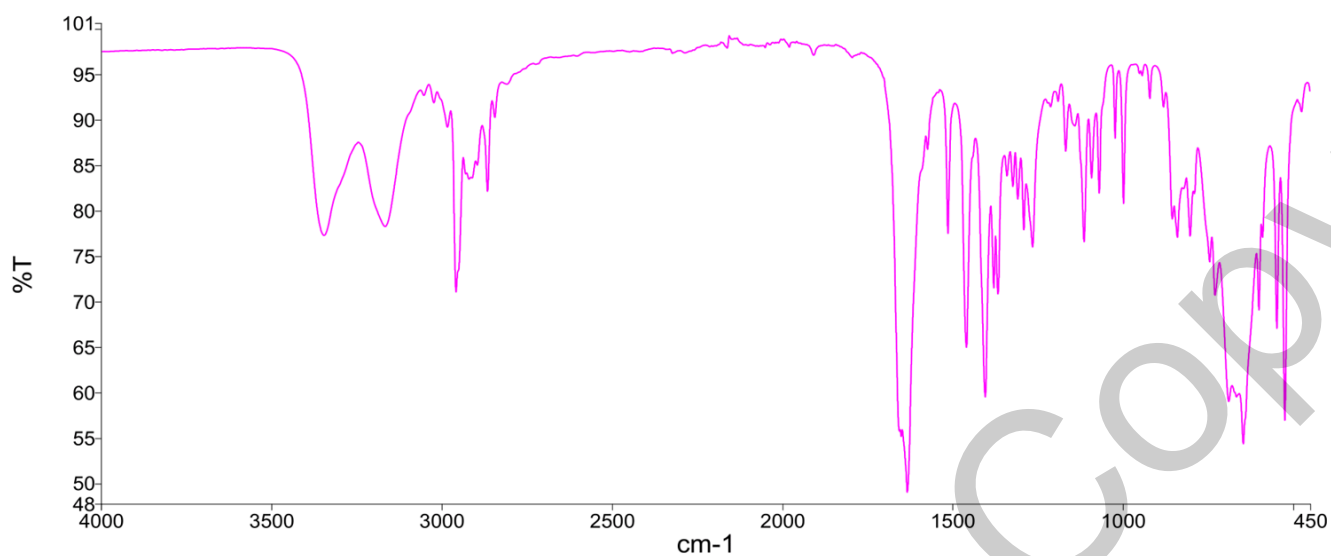


Theoretical values: 206.2 [M+H]<sup>+</sup>

The signals of the Mass Spectrum are consistent with the theoretical value and their interpretation is consistent with the structural formula.

### Ic. IR Spectrum

The infra-red spectrum of this material was analysed by Fourier-Transform Infra-red Spectroscopy (FTIR) using in-house EM005.WI09.



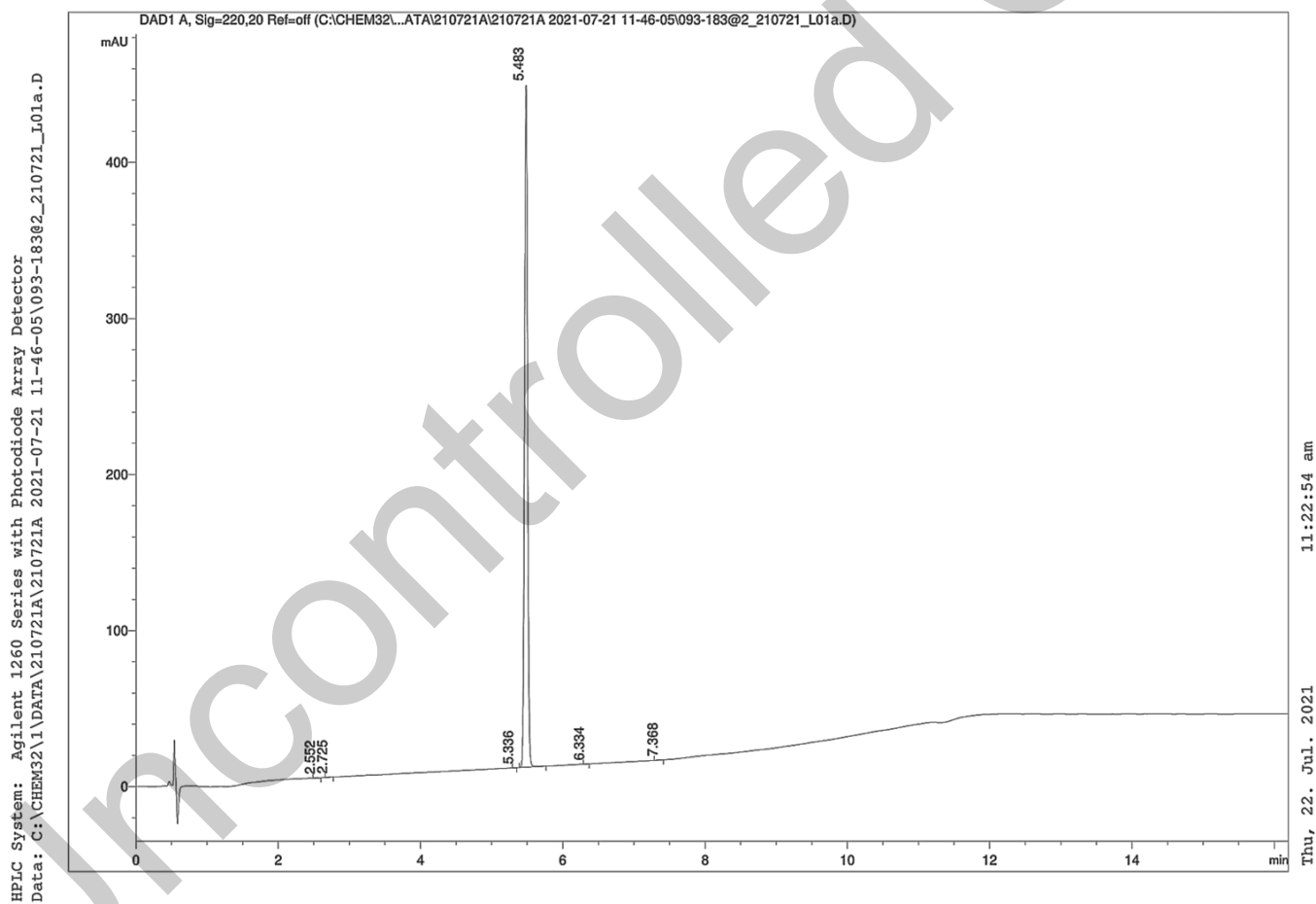
The interpretation of the signals of the Fourier Transform Infra-red Spectrum is consistent with the structural formula.

## 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 50 mm  2.7 micron	25°C				DAD 220nm	Auto 1.0 µL 0.65 mg/mL in 100% acetonitrile (NO MODIFIERS)
	Time (min)	% Line A (Water + 0.1% (v/v) TFA)	% Line B (Acetonitrile + 0.1% (v/v) TFA)	Flow rate (mL/min)		
	0.00	75	25	1.0		
	6.00	45	55	1.0		
	10.00	5	95	1.0		
	15.00	5	95	1.0		
	16.00	75	25	1.0		
	19.00	75	25	1.0		



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### Area Percent Report – Sorted by Signal

Peak Number	Retention Time (rounded)	Area	Area % (rounded)
1	2.55	0.66	0.05
2	2.72	0.53	0.04
3	5.34	0.10	0.01
4	5.48	1288.54	99.85
5	6.33	0.09	0.01
6	7.37	0.58	0.04
Totals			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 analyses)

### III. Water Content

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

**Results:**

Average 0.1%

### IV. Ash Content

Method: BP 2011 Ash

**Result:**

Contains 0.1% ash.

### V. Residual Solvents

Method: <sup>1</sup>HNMR

**Result:**

No significant impurities detected by <sup>1</sup>H NMR analysis.

### VI. Final Result

Chromatographic purity (HPLC)	99.9%
Water content	0.1%
Ash content	0.1%
Residual solvents	<0.1%
Purity*	99.7%

This purity is assessed to be 99.7%.

Product Reviewed By:

Product Released By:

James Rixson, PhD  
Head of Production

Jason Chaplin, PhD  
Principal Chemist

Release Date: 28 July 2021

\*The calculation of the purity follows the formula:

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

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