Australian Wool Testing Authority Ltd - trading as AWTA Product Testing A.B.N 43 006 014 106

1st Floor, 191 Racecourse Road, Flemington, Victoria 3031 P.O Box 240, North Melbourne, Victoria 3051 Phone (03) 9371 2400

TEST REPORT

Client: Armacell (Guangzhou) Ltd

Guanggiao, Shilou Town Panyu District

Guangzhou City, Guangdong Province 511447 China

China

Sample Description Clients Ref : "ArmaFlex FRV"

Flexible rubber Colour : Black

End Use: Thermal insulation

Nominal Composition: Rubber (TPY 21/002-5-2021)

Nominal Mass per Unit Area/Density: 50-70g/m2

Nominal Thickness: 25mm

ISO 5660.1-2015 Reaction to Fire Tests - Heat Release Smoke Production and Mass Loss Rate Part 1: Heat

Release Rate (Cone Calorimeter Method) and Smoke Production Rate (Dynamic Measurement)

Date Tested 16-03-2021 Face Tested FACE

Specimen

	1	2	3	4	5	6	Mean	1
Average Heat Release Rate	8.0	fti	fti	fti	fti	fti	fti	kW/m²
Average Specific extinction area	108.7	464.6	481.2	463.4	443.4	445.2	401.1	m²/kg

(According to ISO 5660.2-2002)

Test orientation: Horizontal

	Specimen								
	1	2	3	4	5	6	Mean		
Irradiance	50	50	50	50	50	50	50	kW/m²	
Exhaust flow rate	0.024	0.024	0.024	0.024	0.024	0.024	0.024	m³/s	
Time to sustained flaming	107	fti	fti	fti	fti	fti	fti	sec	
Test duration	1907	1800	1800	1800	1800	1800	1818	sec	
Peak heat release after ignition	52.5	19.4	n/a	16.6	20.9	19.8	26.2	kW/m²	

Average heat at 60 s

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Fiona McDonald

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MICHAEL A. JACKSON B.Sc. (Hons

21-000816

19/03/2021

22/03/2021

Test Number :

Issue Date

Print Date

Australian Wool Testing Authority Ltd - trading as AWTA Product Testing A.B.N 43 006 014 106

1st Floor, 191 Racecourse Road, Flemington, Victoria 3031 P.O Box 240, North Melbourne, Victoria 3051 Phone (03) 9371 2400

TEST REPORT

Client :	Armacell (Guangzhou) Ltd	Test Number	:	21-000816
	Guangqiao, Shilou Town Panyu District	Issue Date	:	19/03/2021
	Guangzhou City, Guangdong Province 511447 China	Print Date	:	22/03/2021
	China			

Guangzhou City, Gu China	uangdong Prov	ing Province 511447 China				e : 22	2/03/2021	
Average heat at 180 s	21.7	8.8	n/a	8.0	12.5	10.8	12.4	kW/m²
Average heat at 300 s	17.9	11.0	n/a	10.1	14.8	13.2	13.7	kW/m²
Total heat released	14.5	22.1	35.8	8.0	20.9	23.8	20.9	MJ/m²
Ave. effective heat of combustion	9.0	11.0	17.5	3.2	10.0	11.7	10.4	MJ/kg
Initial thickness	31	31	31	31	31	31	31.0	mm
Initial mass	72	62.6	67.9	66.8	66.9	65	66.9	g
Mass at sustained flaming	72.0	62.6	67.9	66.8	66.9	65.0	66.9	g
Mass remaining	58.5	46.4	51.4	50.5	50.0	48.5	50.9	g
Mass percentage pyrolysed							24.0	
Mass loss	1667.5	2003.7	2039.9	2017.0	2087.2	2037.9	1975.5	g/m²
Average rate of mass loss	0.9	1.1	1.1	1.1	1.2	1.1	1.1	g/m².s
Total smoke Production (Non Flaming phase)	607.4	934.5	981.6	935.6	925.9	926.1	885.2	m²/m²
Total smoke Production (Flaming phase)	191.9	0.0	0.0	0.0	0.0	0.0	32.0	m²/m²
Total smoke Production (Non Flaming & Flaming phase)	799.3	934.5	981.6	935.6	925.9	926.1	917.2	m²/m²
Specimen Surface area							-	
C-Factor (Calibration Constant)).042221	0.042221).042127).042221	.042221	0.042127		_

Additional Observations NONE

Difficulties Encountered during Testing NONE

fti = failed to ignite

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Australian Wool Testing Authority Ltd - trading as AWTA Product Testing A.B.N 43 006 014 106

1st Floor, 191 Racecourse Road, Flemington, Victoria 3031 P.O Box 240, North Melbourne, Victoria 3051 Phone (03) 9371 2400

TEST REPORT

Client: Armacell (Guangzhou) Ltd

Guanggiao, Shilou Town Panyu District

Guangzhou City, Guangdong Province 511447 China

China

Test Number : 21-000816 **Issue Date** : 19/03/2021

Print Date : 22/03/2021

These test results relate only to the behaviour of the product under the conditions of the test, they are not intended to be the sole criterion for assessment of performance under real fire conditions.

Samples were loose laid onto a substrate of 6mm thick cement sheeting prior to testing.

Tests were conducted with a wire grid placed over the sample during testing. This was done to contain intumescing sample within the sample holder.

Note: The sample has a heat release rate of less than 50 kW/m². In accordance with New Zealand Building Code verification Method C/VM2 Appendix A this product shall be classified as Group 1.

If a different classification group is obtained for different specimens tested, then the highest (worst) classification for any specimen must be taken as the final classification for that material.

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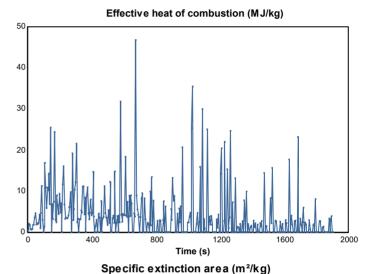
China

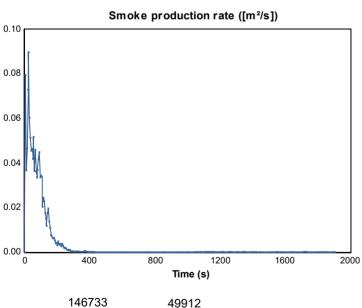
Test Number : 21-000816

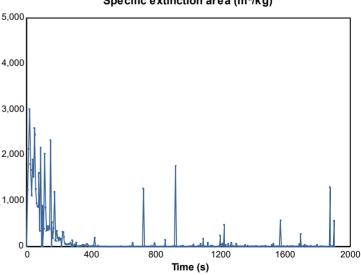
Issue Date : 19/03/2021 Print Date : 22/03/2021

Specimen:

Heat release rate (kW/m²) 80 40 20 -20 400 800 1200 1600 2000 Time (s)







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TEST REPORT

Armacell (Guangzhou) Ltd Client:

Guanggiao, Shilou Town Panyu District

Guangzhou City, Guangdong Province 511447 China

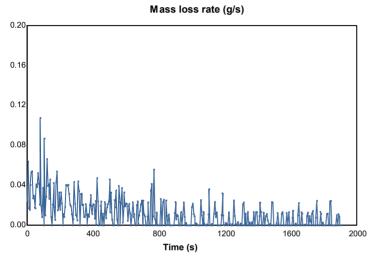
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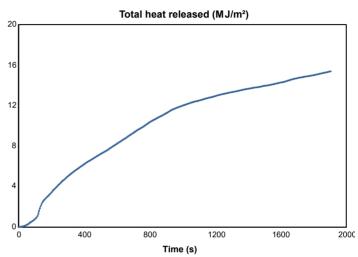
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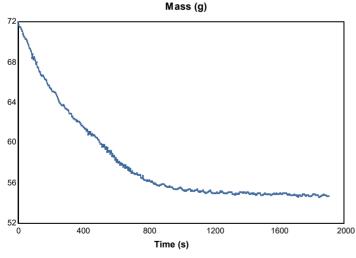
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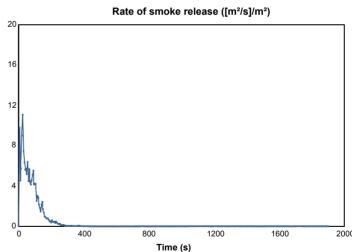
19/03/2021

China









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NTA Product Testing

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TEST REPORT

Armacell (Guangzhou) Ltd Client:

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Guangzhou City, Guangdong Province 511447 China

China

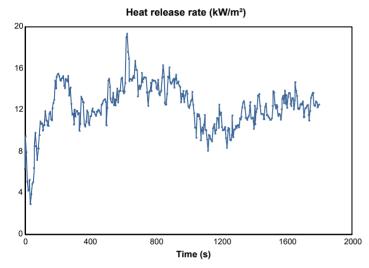
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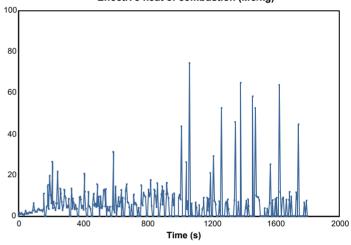
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22/03/2021 **Print Date**

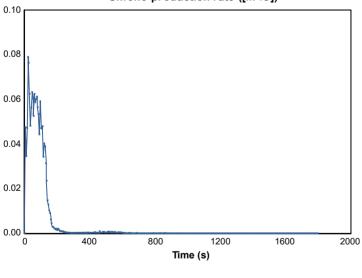
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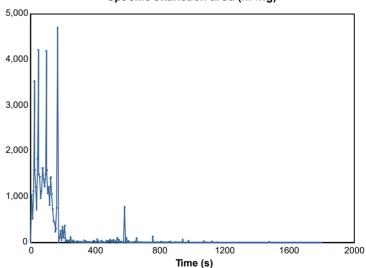
Effective heat of combustion (MJ/kg)







Specific extinction area (m²/kg)



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TEST REPORT

Armacell (Guangzhou) Ltd Client:

Guanggiao, Shilou Town Panyu District

Guangzhou City, Guangdong Province 511447 China

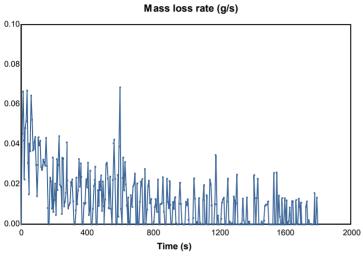
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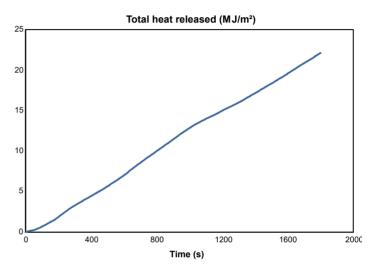
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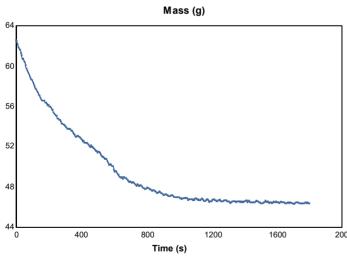
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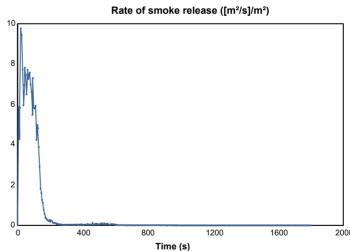
19/03/2021

China









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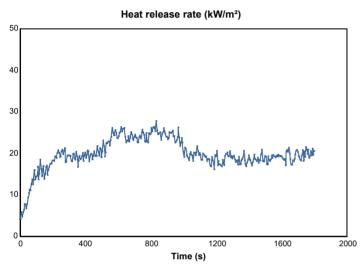
China

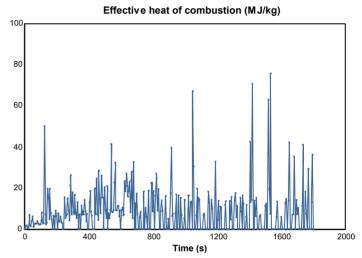
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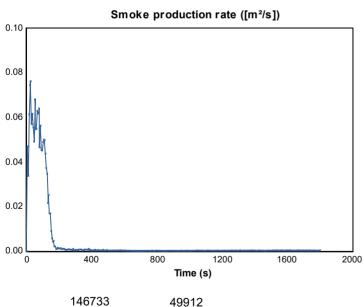
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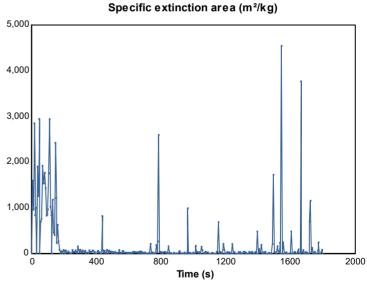
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Specimen: 3









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TEST REPORT

Client: Armacell (Guangzhou) Ltd

Guanggiao, Shilou Town Panyu District

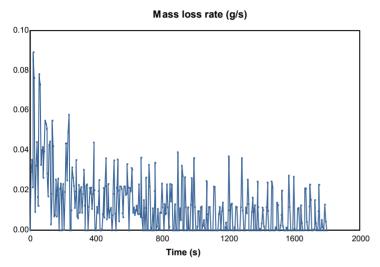
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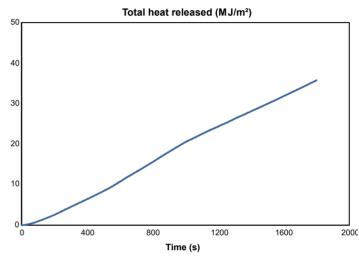
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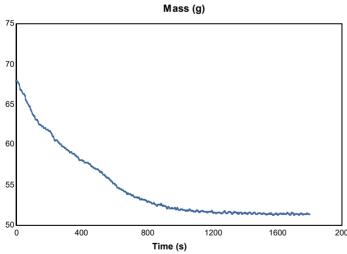
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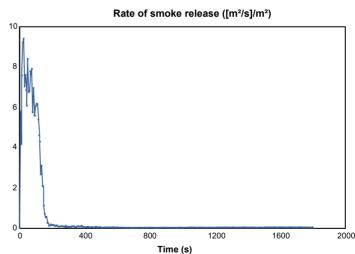
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TEST REPORT

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Guanggiao, Shilou Town Panyu District

Guangzhou City, Guangdong Province 511447 China

China

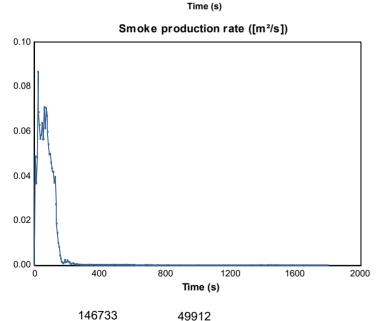
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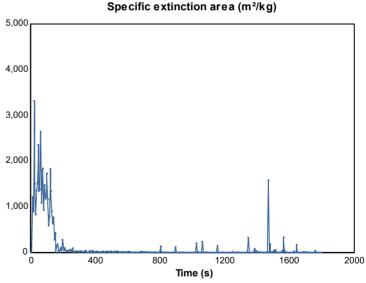
Issue Date : 19/03/2021 Print Date : 22/03/2021

Specimen: 4

Heat release rate (kW/m²) 16 12 8 4 0 400 800 1200 1600 2000

Effective heat of combustion (M J/kg) 80 60 40 20 0 400 800 1200 1600 2000 Time (s)





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TEST REPORT

Armacell (Guangzhou) Ltd Client:

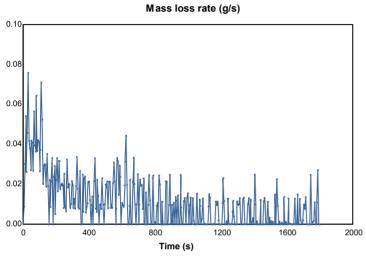
Guanggiao, Shilou Town Panyu District

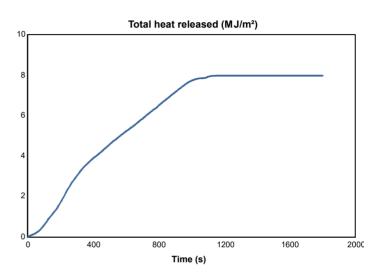
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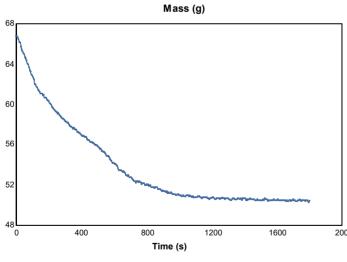
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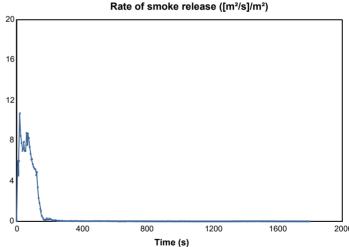
Issue Date 19/03/2021 22/03/2021 **Print Date**

China









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TEST REPORT

Armacell (Guangzhou) Ltd Client:

Guanggiao, Shilou Town Panyu District

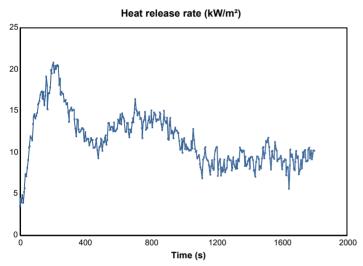
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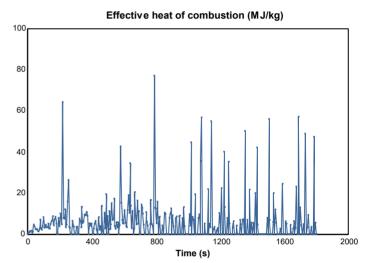
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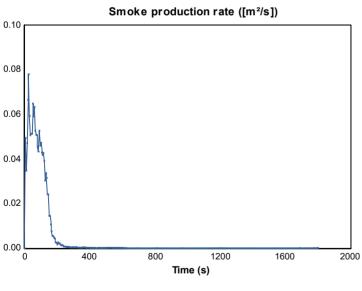
Issue Date 19/03/2021 22/03/2021 **Print Date**

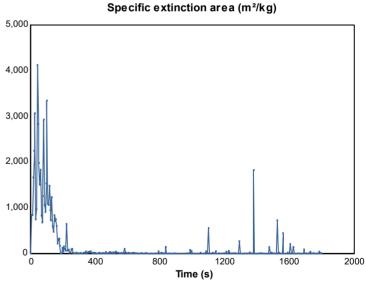
China

5 Specimen:









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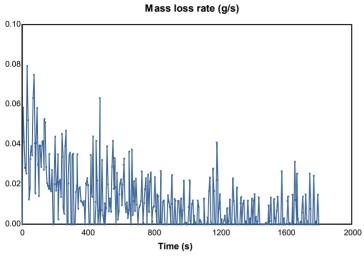
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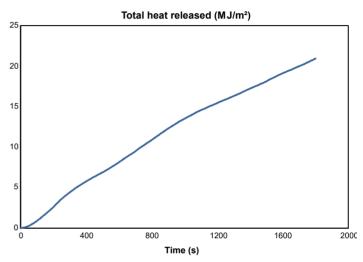
Issue Date

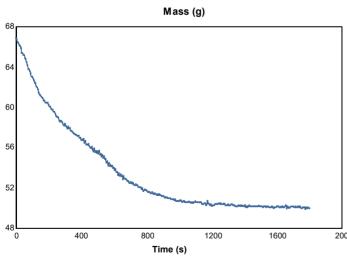
22/03/2021 **Print Date**

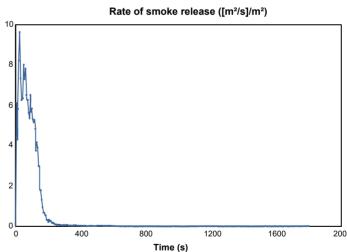
19/03/2021

China









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APPROVED SIGNATORY

NTA Product Testing

Australian Wool Testing Authority Ltd - trading as AWTA Product Testing A.B.N 43 006 014 106

1st Floor, 191 Racecourse Road, Flemington, Victoria 3031 P.O Box 240, North Melbourne, Victoria 3051 Phone (03) 9371 2400

TEST REPORT

Armacell (Guangzhou) Ltd Client:

Guanggiao, Shilou Town Panyu District

Guangzhou City, Guangdong Province 511447 China

China

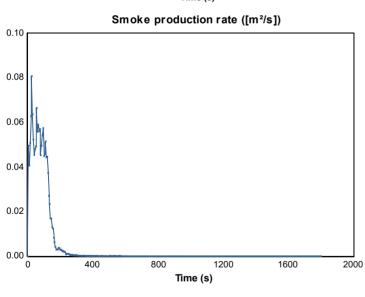
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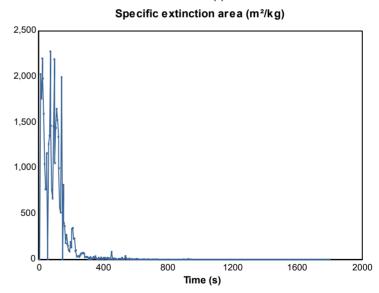
Issue Date 19/03/2021 22/03/2021 **Print Date**

Specimen: 6

Heat release rate (kW/m²) 16 12 400 1600 2000 Time (s)

Effective heat of combustion (MJ/kg) 100 40 20 2000 Time (s)





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1st Floor, 191 Racecourse Road, Flemington, Victoria 3031 P.O Box 240, North Melbourne, Victoria 3051 Phone (03) 9371 2400

TEST REPORT

Client: Armacell (Guangzhou) Ltd

Guanggiao, Shilou Town Panyu District

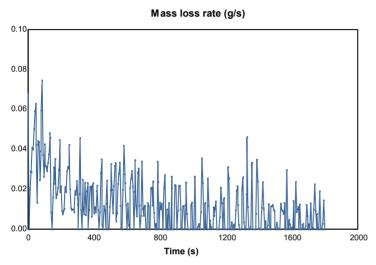
Guangzhou City, Guangdong Province 511447 China

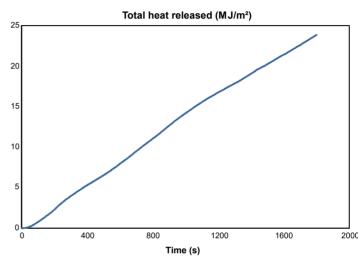
China

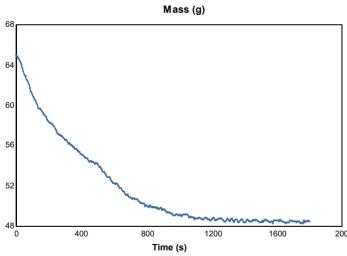
Test Number : 21-000816

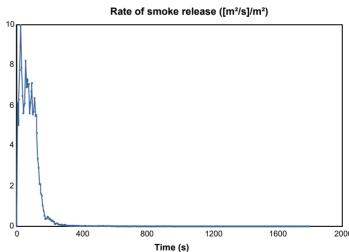
Issue Date : 19/03/2021

Print Date : 22/03/2021









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Fiona McDonald

APPROVED SIGNATORY

MICHAEL A. JACKSON B.Sc.(Hons)