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**Report Number R004457**

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**Workplace Testing Report  
Clingcast Metals Pty Ltd, Kirrawee**

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## Document Information

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Client Name: Clingcast Metals Pty Ltd  
 Report Number: R004457  
 Date of Issue: 26 June 2017  
 Attention: Chris Harden  
 Address: 98 Bath Rd  
 KIRRAWEE NSW 2232  
 Testing Laboratory: Ektimo (EML) ABN 98 006 878 342

## Report Status

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Format	Document Number	Report Date	Prepared By	Reviewed By (1)	Reviewed By (2)
Preliminary Report	-	-	-	-	-
Draft Report	R004457[DRAFT]	7/06/2017	JWe	DHi	ZXa
Final Report	R004457	26/06/2017	JWe	DHi	ZXa
Amend Report	-	-	-	-	-

Template Version: 170407

## Amendment Record

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Document Number	Initiator	Report Date	Section	Reason
Nil	-	-	-	-

## Report Authorisation

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**David Hill**  
 Client Manager

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## 1 EXECUTIVE SUMMARY

Ektimo was engaged by Clingcast Metals Pty Ltd to determine workplace emissions to air as detailed below;

Location	Test Date	Test Parameters*
Mouldings Operator Feng Shusen	11 May 2017	Inspirable dust, metals (type 1 and 2 substances)
Mouldings & Pouring Operator Tim Dillon	11 May 2017	Inspirable dust, metals (type 1 and 2 substances)
Foundry Manager Scott Swindale	11 May 2017	Inspirable dust, metals (type 1 and 2 substances)

## 2 ACTION LEVELS

An action level triggers actions to control exposure ensuring all employees exposures stay well below any the exposure standard. Please note action levels may be adopted as industry best practice as recommended by the *Australian Institute of Occupational Hygienists (AIOH)*.

## 3 RESULTS SUMMARY

Test results are compared to Safe Work Australia workplace exposure standards of airborne contaminants. Specifically, the relevant Time Weighted Average Exposure Standard - (TWA) expressed as the airborne concentrations of that substance. This document can be found at:

<http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/workplace-exposure-standards>

or,

<http://safeworkaustralia.gov.au>

All results are corrected to STP (standard conditions of temperature and pressure) i.e. 25°C and an atmospheric pressure of 101.325 kPa, unless otherwise specified.

The Australian Institute of Occupational Hygienists have released a position paper for dusts not otherwise specified. Ektimo have outlined the Inspirable dust action level in the table below. The recommended trigger values are not exposure standards but rather indicate breathing zone exposure concentrations at which consideration should be given to implementing practicable exposure controls.

During the testing Ektimo staff observed the staff measured wearing P2 dust masks, which at a minimum standard is considered an appropriate exposure control method.

Pollutant	Units	TWA	AIOH Action Level	Mouldings Operator	Mouldings & Pouring Operator	Foundry Manager
				Feng Shusen Detected Values 11/05/17	Tim Dillon Detected Values 11/05/17	Scott Swindale Detected Values 05/05/17
Inspirable dust	mg/m <sup>3</sup>	NA	5	14	1.7	0.58
Antimony	mg/m <sup>3</sup>	0.5	-	<0.0068	<0.0065	<0.0067
Arsenic	mg/m <sup>3</sup>	0.05	-	<0.0027	<0.0026	<0.0027
Beryllium	mg/m <sup>3</sup>	0.01	-	<0.0014	<0.0026	<0.0013
Cadmium	mg/m <sup>3</sup>	0.05	-	<0.00068	<0.00065	<0.00067
Chromium	mg/m <sup>3</sup>	0.025	-	<0.00068	<0.00065	<0.00067
Cobalt	mg/m <sup>3</sup>	0.002	-	<0.00068	<0.00065	<0.00067
Lead	mg/m <sup>3</sup>	0.5	-	0.0027	0.01	0.019
Manganese	mg/m <sup>3</sup>	0.05	-	0.0014	0.0026	<0.0012
Mercury	mg/m <sup>3</sup>	1	-	<0.00027	<0.00026	<0.00027
Nickel	mg/m <sup>3</sup>	1	-	<0.0014	<0.0013	<0.0013
Selenium	mg/m <sup>3</sup>	0.1	-	<0.0068	<0.0065	<0.0067
Tin	mg/m <sup>3</sup>	2	-	<0.0027	0.0026	0.004
Vanadium	mg/m <sup>3</sup>	0.05	-	<0.0014	<0.0013	<0.0013

## 4 RESULTS

### 4.1 Personal

Date	11/05/2017	Client	Clingcast metals
Report	R004457	Site ID	Factory
Licence No.	-	Location	Kirrawee State NSW
Ektimo Staff	David Hill & Ryan Collins		
Reason for testing:	Client requested testing to determine emissions to air		

<b>Workplace Monitoring</b>	<b>Mouldings Operator Feng Shusen</b>	<b>Mouldings &amp; Pouring Operator Tim Dillon</b>	<b>Foundry Manager Scott Swindale</b>
Date	11/05/17	11/05/17	11/05/17
Start/End time	0854-1456	0853-1458	0849-1454
Sample period (min)	362	365	365
	Concentration mg/m <sup>3</sup>	Concentration mg/m <sup>3</sup>	Concentration mg/m <sup>3</sup>
Inspirable dust	14	1.7	0.58
Antimony	<0.0068	<0.0065	<0.0067
Arsenic	<0.0027	<0.0026	<0.0027
Beryllium	<0.0014	<0.0026	<0.0013
Cadmium	<0.00068	<0.00065	<0.00067
Chromium	<0.00068	<0.00065	<0.00067
Cobalt	<0.00068	<0.00065	<0.00067
Lead	0.0027	0.01	0.019
Manganese	0.0014	0.0026	<0.0012
Mercury	<0.00027	<0.00026	<0.00027
Nickel	<0.0014	<0.0013	<0.0013
Selenium	<0.0068	<0.0065	<0.0067
Tin	<0.0027	0.0026	0.004
Vanadium	<0.0014	<0.0013	<0.0013
Type 1 Substances	0.0027	0.01	0.019
Type 2 Substances	0.0014	0.0052	0.0052
Type 1 and 2 Substances	0.0041	0.015	0.024

## 5 TEST METHODS

All sampling and analysis was performed by Ektimo unless otherwise specified. Specific details of the methods are available upon request.

Parameter	Reference Method	Method Detection Limit	Uncertainty*
Inhalable dust	AS 3640-2009	-	-
Metals <sup>1</sup>	NIOSH 7300	-	-

\* Uncertainty values cited in this table are calculated at the 95% confidence level (coverage factor = 2)

1. Analysis performed by Envirolab, NATA accreditation number 2901. Results were reported to Ektimo on 2 June 2017 in report number 167946.

## 6 QUALITY ASSURANCE/ QUALITY CONTROL INFORMATION

A formal Quality Control program is in place at Ektimo to monitor analyses performed in the laboratory and sampling conducted in the field. The program is designed to check where appropriate; the sampling reproducibility, analytical method, accuracy, precision and the performance of the analyst. The Laboratory Manager is responsible for the administration and maintenance of this program.

## 7 DEFINITIONS

The following symbols and abbreviations may be used in this test report:

- STP Standard temperature and pressure. Gas volumes and concentrations are expressed on a dry basis at 25°C, at discharge oxygen concentration and an absolute pressure of 101.325 kPa, unless otherwise specified.
- TWA (Exposure Standard - Time Weighted Average) expressed as airborne concentrations of substances, is an average concentration which provides a guideline value a worker should not be exposed to over an eight hour working day. Excursions above this value are permitted (within STEL limitations) providing these excursions are compensated with equivalent excursions below the standard during the working day. However, because some substances can give rise to acute health effects even after brief exposures to high concentrations, it is evident that excursions above the TWA concentration should be restricted. Reference : Exposure Standards for Atmospheric Contaminants in the Occupational Environment, 3rd Ed. Worksafe Australia Standard, May, 1995.
- STEL (Exposure Standard - Short term exposure limit) expressed as airborne concentrations of substances, provides a guideline for which the worker should not be continuously exposed to for more than 15 minutes. A minimum of 60 minutes should be allowed between each exposure and the worker should not be exposed more than four times during the day. Reference : Exposure Standards for Atmospheric Contaminants in the Occupational Environment, 3rd Ed. Worksafe Australia Standard, May, 1995.
- Peak Limitation For some rapidly acting substances and irritants, the averaging of the airborne concentration over an eight-hour period is inappropriate. These substances may induce acute effects after relatively brief exposure to high concentrations and so the exposure standard for these substances represents a maximum or peak concentration to which workers may be exposed. Although it is recognised that there are analytical limitations to the measurement of some substances, compliance with these 'peak limitation' exposure standards should be determined over the shortest analytically practicable period of time, but under no circumstances should a single determination exceed 15 minutes.
- < Less than