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Chem Pack Pty Ltd  
Attn: James Hanna  
120 Fulton Drive  
Derrimut Vic  
VIC 3030  
AUSTRALIA

7/04/2014

Dear James,

Please find the attached report to AS/NZS 4020:2005 for High Temperature Silicone Grease submitted for testing.

Should you have any enquiries about the report or any other matters pertaining to the Standard please contact the laboratory on 61 8 7424 1512

Yours sincerely,

A handwritten signature in black ink, appearing to read "M Glasson".

Michael Glasson  
Supervisor Product Testing



Corporate Accreditation No.1115  
Chemical and Biological Testing  
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## FINAL REPORT

Report ID : 135668

### Report Information

**Submitting Organisation :** 00121328 : Chem Pack Pty Ltd  
**Account :** 142349 : Chem Pack Pty Ltd  
**AWQC Reference :** 142349-2013-CSR-1 : Prod Test: Silicone Grease  
**Project Reference :** PT-2289  
**Product Designation :** High Temperature Silicone Grease  
**Composition of Product :** Silicone (see attachment Product Specification Sheet).  
**Product Manufacturer :** Chem Pack Pty Ltd, Fulton Drive, Derrimut, Victoria, AUSTRALIA.  
**Use of Product :** In-Line/Multi-Purpose Industrial Lubricant.  
**Sample Selection:** As provided by the submitting organisation.  
**Testing Requested :** **AS/NZS 4020:2005 TESTING OF PRODUCTS FOR USE IN CONTACT WITH DRINKING WATER**  
**Product Type :** Composite  
**Samples :** Samples were prepared and controlled as described in Appendix A of AS/NZS 4020:2005  
**Extracts :** Extracts were prepared as described in Appendix C, D, E, F, G, H.  
**Project Completion Date :** 04-Apr-2014  
**Project Comment :** The results presented herein demonstrate compliance of High Temperature Silicone Grease to AS/NZS 4020:2005 when exposed at area to volume ratios up to 10,000 mm<sup>2</sup>/L at 95°C ± 2°C. Product range to include 100g and 250g tubs; 1kg, 5kg

PLEASE NOTE THAT THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL

THE RESULTS STATED IN THIS REPORT RELATE TO THE SAMPLE OF THE PRODUCT SUBMITTED FOR TESTING. ANY CHANGES IN THE MATERIAL FORMULATION, PROCESS OF MANUFACTURE, THE METHOD OF APPLICATION, OR THE SURFACE AREA-TO-VOLUME RATIO IN THE END USE, COULD AFFECT THE SUITABILITY OF THE PRODUCT FOR USE IN CONTACT WITH DRINKING WATER



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### Summary of Results

APPENDIX	RESULTS
C – Taste of Water Extract	Passed when tested at an exposure of 10,000 mm <sup>2</sup> per litre.
D – Appearance of Water Extract	Passed when tested at an exposure of 10,000 mm <sup>2</sup> per litre.
E – Growth of Aquatic Micro-organisms	Passed when tested at an exposure of 10,000 mm <sup>2</sup> per litre.
F – Cytotoxic Activity of Water Extract	Passed when tested at an exposure of 10,000 mm <sup>2</sup> per litre.
G – Mutagenic Activity of Water Extract	Passed when tested at an exposure of 10,000 mm <sup>2</sup> per litre.
H – Extraction of Metals	Passed when tested at an exposure of 10,000 mm <sup>2</sup> per litre.

### Test Methods

Test(s) in Appendix	AWQC Test Method	Reference Method
C	T0320-01	AS/NZS 4020:2005
D	TO029-01 & TO018-01	APHA 2130b
E	TO014-03	APHA 4500 O C
F	TM-001	AS/NZS 4020:2005
G	TM-002	AS/NZS 4020:2005
H	TIC-006	EPA 200.8

Summary Comment : Not applicable.

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### CLAUSE 6.2 Taste of Water Extract

<b>Sample Description</b>	The sample was applied to a single glass panel with dimensions 75 mm x 100 mm and a thickness of 3 mm providing an approximate surface area of 10,000 mm <sup>2</sup> per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.
<b>Extraction Temperature</b>	95°C ± 2°C.
<b>Test Method</b>	Taste of Water Extract (Appendix C)
<b>Test Information</b>	
<b>Scaling Factor</b>	Not applied.
<b>Results</b>	Not detected.
<b>Evaluation</b>	The product passed the requirements of clause 6.2 when tested at an exposure of 10,000 mm <sup>2</sup> per litre.
<b>Number of Samples</b>	2.
<b>Test Comment</b>	Not applicable.



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### CLAUSE 6.3 Appearance of Water Extract

**Sample Description** The sample was applied to a single glass panel with dimensions 75 mm x 100 mm and a thickness of 3 mm providing an approximate surface area of 10,000 mm<sup>2</sup> per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.

**Extraction Temperature** 95°C ± 2°C.

**Test Method** Appearance of Water Extract (Appendix D)

**Scaling Factor** Not applied.

#### Results

	<u>Test (- Blank)</u>	<u>Maximum Allowed</u>	<u>Units</u>
Colour	<1	5	HU
Turbidity	<0.1	0.5	NTU

**Evaluation** The product passed the requirements of clause 6.3 when tested at an exposure of 10,000 mm<sup>2</sup> per litre.

**Number of Samples** 1.

**Test Comment** Not applicable.



Stephanie Semczuk  
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### CLAUSE 6.4 Growth of Aquatic Micro-organisms

**Sample Description** The sample was applied to a single glass panel with dimensions 75 mm x 100 mm and a thickness of 3 mm providing an approximate surface area of 10,000 mm<sup>2</sup> per Litre. Extracts were prepared using 750 mL volumes of test water.

**Test Method** Growth of Aquatic Micro-organisms (Appendix E)

**Inoculum** The volume of the inoculum was 100 mL

**Scaling Factor** Not applied.

Results			
	Mean Dissolved Oxygen	Control	7.2 mg/L
	Mean Dissolved Oxygen Difference	Positive Reference	5.5 mg/L
		Negative Reference	<0.1 mg/L
		Test	<0.10 mg/L

**Evaluation** The product passed the requirements of clause 6.4 when tested at an exposure of 10,000 mm<sup>2</sup> per litre.

**Number of Samples** 1.

**Test Comment** Not applicable.



Phil Thomas  
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### CLAUSE 6.5 Cytotoxic Activity of Water Extract

<b>Sample Description</b>	The sample was applied to a single glass panel with dimensions 75 mm x 100 mm and a thickness of 3 mm providing an approximate surface area of 10,000 mm <sup>2</sup> per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.
<b>Extraction Temperature</b>	95°C ± 2°C.
<b>Test Method</b>	Cytotoxic Activity of Water Extract (Appendix F)
<b>Scaling Factor</b>	Not applied.
<b>Results</b>	Non-cytotoxic.
<b>Evaluation</b>	The product passed the requirements of clause 6.5 when tested at an exposure of 10,000 mm <sup>2</sup> per litre.
<b>Number of Samples</b>	1.
<b>Test Comment</b>	Not applicable



Brendon King  
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### CLAUSE 6.6 Mutagenic Activity of Water Extract

**Sample Description** The sample was applied to a single glass panel with dimensions 75 mm x 100 mm and a thickness of 3 mm providing an approximate surface area of 10,000 mm<sup>2</sup> per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.

**Extraction Temperature** 95°C ± 2°C.

**Test Method** Mutagenic Activity of Water Extract (Appendix G)

**Scaling Factor** Not applied.

#### Results

	<u>Bacteria Strain</u>		<u>Number of Revertants per Plate</u>			
	S9	Blank	Sample Extract	Positive Controls		
<i>Salmonella typhimurium</i> TA98	-	22, 34, 18	25, 19, 26	2069, 2287, 1975		<u>NPD</u> (20µg)
Mean ± Standard deviation		24.7 ± 8.3	23.3 ± 3.8	2110.3 ± 160.1		
	+	24, 29, 30	21, 16, 22	2528, 2303, 2962		<u>2-AF</u> (20µg)
Mean ± Standard deviation		27.7 ± 3.2	19.7 ± 3.2	2597.7 ± 335.0		
<i>Salmonella typhimurium</i> TA100	-	495, 499, 558	399, 410, 490	803, 897, 995		<u>Azide</u> (1.0µg)
Mean ± Standard deviation		517.3 ± 35.3	433.0 ± 49.7	898.3 ± 96.0		
	+	221, 257, 255	219, 190, 251	2582, 2532, 2495		<u>2-AF</u> (20µg)
Mean ± Standard deviation		244.3 ± 20.2	220.0 ± 30.5	2536.3 ± 43.7		
<i>Salmonella typhimurium</i> TA102	-	634, 633, 641	600, 576, 645	2769, 2875, 2745		<u>Mitomycin C</u> (10µg)
Mean ± Standard deviation		636.0 ± 4.4	607.0 ± 35.0	2796.3 ± 69.2		
	+	582, 616, 711	660, 578, 613			
Mean ± Standard deviation		636.3 ± 66.9	617.0 ± 41.1			

**Comments** S9 was used as a metabolic activator. NPD (4-nitro-o-phenylenediamine), Azide, and Mitomycin C are specific positive controls for strains TA98, TA100 and TA102 respectively while 2 - AF (2-aminofluorene) when used in conjunction with S9 is a positive control for both TA98 and TA100

**Evaluation** The product passed the requirements of clause 6.6 when tested at an exposure of 10,000 mm<sup>2</sup> per litre.

**Number of Samples** 1.

**Test Comment** Not applicable.



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### CLAUSE 6.7 Extraction of Metals

**Sample Description** The sample was applied to a single glass panel with dimensions 75 mm x 100 mm and a thickness of 3 mm providing an approximate surface area of 10,000 mm<sup>2</sup> per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.

**Extraction Temperature** 95°C ± 2°C.

**Test Method** Extraction of Metals (Appendix H)

**Scaling Factor** Not applied.

**Method of Analysis** All methods used to determine concentrations of metals are based on those described in the 21st edition of Standard Methods for the Examination of Water and Wastewater published by the APHA, AWWA and WEF (2005). The methods have been adapted for the instrumentation in use at the Australian Water Quality Centre.

Concentration of the metals described in Table 2 of the AS/NZS 4020:2005 are determined as follows:

Antimony, Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium and Silver by Inductively Coupled Plasma Mass Spectrometry.

Results	Limit of Reporting mg/L	Blank mg/L	Test 1 mg/L	Test 2 mg/L	Max Allowed mg/L
<b>Final Extract</b>					
Antimony	0.0005	<0.0005	<0.0005	<0.0005	0.003
Arsenic	0.0003	<0.0003	<0.0003	<0.0003	0.007
Barium	0.0005	0.0039	0.0031	0.0029	0.7
Cadmium	0.0001	<0.0001	<0.0001	<0.0001	0.002
Chromium	0.0001	<0.0001	<0.0001	<0.0001	0.05
Copper	0.0001	<0.0001	<0.0001	<0.0001	2.0
Lead	0.0001	<0.0001	0.0005	0.0004	0.01
Mercury	0.00003	<0.00003	<0.00003	0.00008	0.001
Molybdenum	0.0001	0.0001	0.0002	0.0002	0.05
Nickel	0.0001	<0.0001	<0.0001	<0.0001	0.02
Selenium	0.0001	<0.0001	<0.0001	<0.0001	0.01
Silver	0.00003	<0.00003	<0.00003	<0.00003	0.1

**Evaluation** The product passed the requirements of clause 6.7 when tested at an exposure of 10,000 mm<sup>2</sup> per litre.

**Number of Samples** 1.

**Test Comment** Not applicable.

  
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WORLD RECOGNISED  
ACCREDITATION

Report Number... 135668

Date... 7/4/2014

Document reviewed by... MICHAEL GLASSON

Signature... M. [Signature]

PRODUCT SPECIFICATION SHEET



**Chem Pack Pty Ltd**

ABN 62 060 283 089

120 Fulton Drive Derrimut Vic 3030

incorporating

**Citro-Clean Products & Chemlube**

(Registered Business Names of Chem Pack Pty Ltd)



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**SILICONE GREASE**

**Silicone Grease** is a multi-purpose industrial lubricant with remarkable qualities. It has excellent dielectric strength and will withstand temperatures within the range of -40°C to +400°C It has moisture and oxidization resistance and is also resistant to corrosive atmospheres and a wide range of chemicals. Silicone Grease is also one of the few lubricants that will not affect natural or synthetic rubber seals, valves or bearings.

**Silicone Grease meets the MIL-S-18660 Specification and is classified as Food Grade (Incidental Contact) for use in food packaging / manufacturing applications.**

**Silicone Grease** has a combination viscosity that makes it suitable for light, medium and heavy type applications. It may be further "thinned" if needed by dispersing the grease in solvents such as Xylene, white spirit or 1,1,1 Trichloroethane.

**Applications:** Suitable for high temperature applications; long-life lubricant for bearings, rubber seals, valves, hydraulic shafts, ball and socket connections; as a sealant for gaskets; a parting agent for nuts, bolts and moulding processes, as an electrical insulator and moisture-proof sealant in marine, aviation and automotive ignition systems; rubber and synthetic O-rings, gaskets and seals, laboratory glassware. Ideal for washers and components in water taps. Used extensively on gym equipment also.

**TYPICAL CHARACTERISTICS:**

Appearance:	white, translucent
NLGI:	2
Specific Gravity (24°C):	1.00
Drop Point (°C):	300
Base Type:	Silicone
Water Washout (%m)	N/A
Oil Separation	N/A
Melting Point:	None
Arc Resistance (Seconds)	120
Penetration Unworked	200-240
Worked	310

**Pack sizes: 100g & 250g tubs; 1kg, 5kg**

**Conditions of Sale:** Chem Pack Pty Ltd shall not be liable for any loss, injury, damage or death, whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sales, supply, use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on Chem Pack's skill or judgement in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of Chem Pack has any authority to add to or alter these conditions.

