

THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 1 of 31

Sample No.	S-180524-015	Customer ID:		
Tests	<u>3</u>	Results/Units	<u>Method</u>	Estimated Results
Acid Inso	luble	900 ppm	Insoluble residue after acid digestion*	NA
Acid Insol	luble	0.090 %	Insoluble residue after acid digestion*	NA
AI		<1 ppm	ICP-MS	0.2 ppm
AI		<0.0001 %	ICP-MS	0.00002%
As		<1 ppm	ICP-MS	0.2 ppm
As		<0.0001 %	ICP-MS	0.00002%
В		<1 ppm	ICP-MS	0 ppm

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 2 of 31

Sample No.	S-180524-015	Customer ID:		
Tests	i	Results/Units	<u>Method</u>	Estimated Results
В		<0.0001 %	ICP-MS	0%
Ca		283000 ppm	ICP	NA
Ca		28.30 %	ICP	NA
Cu		<1 ppm	ICP-MS	0.2 ppm
Cu		<0.0001 %	ICP-MS	0.00002%
Fe		1000 ppm	ICP-MS	NA
Fe		0.10 %	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 **Credit Card**

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 3 of 31

Sample No.	S-180524-015	Customer ID:		
Tests	i.	Results/Units	<u>Method</u>	Estimated Results
Heavy Metals	s as Pb	<8 ppm	Calculation	4 ppm
Heavy Metals	s as Pb	<0.0008 %	Calculation	0.0004%
Hg		<1 ppm	Cold Vapor AA	0 ppm
Hg		<0.0001 %	Cold Vapor AA	0 %
Li		<1 ppm	ICP-MS	0.04 ppm
Li		<0.0001 %	ICP-MS	0.000004%
Mg		160 ppm	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018

Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Calcium Chloride

Page 4 of 31

Sample No.	S-180524-015	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Mg		0.016 %	ICP-MS	NA
Р		<10 ppm	ICP-MS	0 ppm
Р		<0.001 %	ICP-MS	0%
Pb		<1 ppm	ICP-MS	0.6 ppm
Pb		<0.0001 %	ICP-MS	0.00006%
Si		<10 ppm	ICP-MS	0 ppm
Si		<0.001 %	ICP-MS	0%

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 5 of 31

Sample No. S-186	0524-015 Customer ID: Results/Units	<u>Method</u>	Estimated Results
Sn	<1 ppm	ICP-MS	0.1 ppm
Sn	<0.0001 %	ICP-MS	0.00001%
Water Insoluble	<100 ppm	Insoluble residue after water digestion*	0 ppm
Water Insoluble	<0.010 %	Insoluble residue after water digestion*	0%
Zn	<1 ppm	ICP-MS	0 ppm
Zn	<0.0001 %	ICP-MS	0%

Certificate of Analysis

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 6 of 31

Sample No.	S-180524-016	Customer ID: <u>Results/Units</u>	<u>Method</u>	Estimated Results
Acid Insol	luble	800 ppm	Insoluble residue after acid digestion*	NA
Acid Insol	luble	0.080 %	Insoluble residue after acid digestion*	NA
AI		2 ppm	ICP-MS	NA
AI		0.0002 %	ICP-MS	NA
As		<1 ppm	ICP-MS	0.5 ppm
As		<0.0001 %	ICP-MS	0.00005%
В		8 ppm	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 7 of 31

Sample No.	S-180524-016	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
В		0.0008 %	ICP-MS	NA
Ca		347000 ppm	ICP	NA
Ca		34.70 %	ICP	NA
Cu		<1 ppm	ICP-MS	0.9 ppm
Cu		<0.0001 %	ICP-MS	0.00009%
Fe		1300 ppm	ICP-MS	NA
Fe		0.13 %	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 8 of 31

Sample No.	S-180524-016	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Heavy Metals	s as Pb	192 ppm	Calculation	NA
Heavy Metals	s as Pb	0.0192 %	Calculation	NA
Hg		<1 ppm	Cold Vapor AA	0 ppm
Hg		<0.0001 %	Cold Vapor AA	0 %
Li		<1 ppm	ICP-MS	0.5 ppm
Li		<0.0001 %	ICP-MS	0.00005%
Mg		960 ppm	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 9 of 31

Sample No.	S-180524-016	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Mg		0.096 %	ICP-MS	NA
Р		<10 ppm	ICP-MS	0 ppm
Р		<0.0010 %	ICP-MS	0%
Pb		<1 ppm	ICP-MS	0.4 ppm
Pb		<0.0001 %	ICP-MS	0.00004%
Si		10 ppm	ICP-MS	NA
Si		0.001 %	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 10 of 31

Sample No.	S-180524-016	Customer ID:		
Tests	<u>i</u>	Results/Units	<u>Method</u>	Estimated Results
Sn		<1 ppm	ICP-MS	0.1 ppm
Sn		<0.0001 %	ICP-MS	0.00001%
Water Insc	oluble	300 ppm	Insoluble residue after water digestion*	NA
Water Insc	oluble	0.030 %	Insoluble residue after water digestion*	NA
Zn		<1 ppm	ICP-MS	0.6 ppm
Zn		<0.0001 %	ICP-MS	0.00006%

Certificate of Analysis

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Ca

Calcium Chloride

Page 11 of 31

Sample No.	S-180524-017	Customer ID:		
Tests	<u> </u>	Results/Units	<u>Method</u>	Estimated Results
Acid Insol	luble	500 ppm	Insoluble residue after acid digestion*	NA
Acid Insol	luble	0.050 %	Insoluble residue after acid digestion*	NA
AI		2 ppm	ICP-MS	NA
Al		0.0002 %	ICP-MS	NA
As		<1 ppm	ICP-MS	0.6 ppm
As		<0.0001 %	ICP-MS	0.00006%
В		76 ppm	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Page 12 of 31

Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 **Credit Card**

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Sample No. S-18 <u>Tests</u>	0524-017 Customer ID: Results/Units	<u>Method</u>	Estimated Results
В	0.0076 %	ICP-MS	NA
Са	344000 ppm	ICP	NA
Ca	34.40 %	ICP	NA
Cu	<1 ppm	ICP-MS	0.5 ppm
Cu	<0.0001 %	ICP-MS	0.00005%
Fe	1300 ppm	ICP-MS	NA
Fe	0.13 %	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 13 of 31

Sample No.	S-180524-017	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Heavy Metals	as Pb	76 ppm	Calculation	NA
Heavy Metals	as Pb	0.0076 %	Calculation	NA
Hg		<1 ppm	Cold Vapor AA	0 ppm
Hg		<0.0001 %	Cold Vapor AA	0 %
Li		160 ppm	ICP-MS	NA
Li		0.016 %	ICP-MS	NA
Mg		12300 ppm	ICP	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Calcium Chloride

Page 14 of 31

Sample No.	S-180524-017	Customer ID: Results/Units	<u>Method</u>	Estimated Results
Mg		1.23 %	ICP	NA
Р		<10 ppm	ICP-MS	0 ppm
Р		<0.001 %	ICP-MS	0%
Pb		<1 ppm	ICP-MS	0.02 ppm
Pb		<0.0001 %	ICP-MS	0.000002%
Si		<10 ppm	ICP-MS	7 ppm
Si		<0.001 %	ICP-MS	0.0007%

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 15 of 31

Sample No.	S-180524-017	Customer ID:		
Tests	<u> </u>	Results/Units	<u>Method</u>	Estimated Results
Sn		<1 ppm	ICP-MS	0.2 ppm
Sn		<0.0001 %	ICP-MS	0.00002%
Water Insc	oluble	2000 ppm	Insoluble residue after water digestion*	NA
Water Insc	oluble	0.20 %	Insoluble residue after water digestion*	NA
Zn		<1 ppm	ICP-MS	0.5 ppm
Zn		<0.0001 %	ICP-MS	0.00005%

Certificate of Analysis

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 16 of 31

Sample No.	S-180524-018	Customer ID: <u>Results/Units</u>	<u>Method</u>	Estimated Results
Acid Insol	luble	<100 ppm	Insoluble residue after acid digestion*	0 ppm
Acid Insol	luble	<0.010 %	Insoluble residue after acid digestion*	0%
AI		<1 ppm	ICP-MS	0.9 ppm
AI		<0.0001 %	ICP-MS	0.00009%
As		<1 ppm	ICP-MS	0.4 ppm
As		<0.0001 %	ICP-MS	0.00004%
В		<1 ppm	ICP-MS	0.3 ppm

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 17 of 31

Sample No.	S-180524-018	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
В		<0.0001 %	ICP-MS	0.00003%
Ca		376000 ppm	ICP	NA
Ca		37.60 %	ICP	NA
Cu		<1 ppm	ICP-MS	0.4 ppm
Cu		<0.0001 %	ICP-MS	0.00004%
Fe		1400 ppm	ICP-MS	NA
Fe		0.14 %	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 18 of 31

Sample No.	S-180524-018	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Heavy Metals	as Pb	17 ppm	Calculation	NA
Heavy Metals	as Pb	0.0017 %	Calculation	NA
Hg		<1 ppm	Cold Vapor AA	0 ppm
Hg		<0.0001 %	Cold Vapor AA	0 %
Li		4 ppm	ICP-MS	NA
Li		0.0004 %	ICP-MS	NA
Mg		64 ppm	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Calciur

Calcium Chloride

Page 19 of 31

Sample No.	S-180524-018	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Mg		0.0064 %	ICP-MS	NA
Р		<10 ppm	ICP-MS	0 ppm
Р		<0.001 %	ICP-MS	0%
Pb		<1 ppm	ICP-MS	0.2 ppm
Pb		<0.0001 %	ICP-MS	0.00002%
Si		<10 ppm	ICP-MS	9 ppm
Si		<0.001 %	ICP-MS	0.0009%

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Calcium

Calcium Chloride

Page 20 of 31

Sample No.	S-180524-018	Customer ID:		
Tests	<u>i</u>	Results/Units	<u>Method</u>	Estimated Results
Sn		<1 ppm	ICP-MS	0.07 ppm
Sn		<0.0001 %	ICP-MS	0.000007%
Water Insc	oluble	800 ppm	Insoluble residue after water digestion*	NA
Water Insc	oluble	0.080 %	Insoluble residue after water digestion*	NA
Zn		<1 ppm	ICP-MS	0.3 ppm
Zn		<0.0001 %	ICP-MS	0.00003%

Certificate of Analysis

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Cale

Calcium Chloride

Page 21 of 31

Sample No.	S-180524-019	Customer ID: Results/Units	<u>Method</u>	Estimated Results
Acid Insol	luble	800 ppm	Insoluble residue after acid digestion*	NA
Acid Insol	luble	0.080 %	Insoluble residue after acid digestion*	NA
Al		<1 ppm	ICP-MS	0.6 ppm
AI		<0.0001 %	ICP-MS	0.00006%
As		<1 ppm	ICP-MS	0.5 ppm
As		<0.0001 %	ICP-MS	0.00005%
В		70 ppm	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018

Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Calcium Ch

Calcium Chloride Page 22 of 31

Sample No.	S-180524-019	Customer ID:		
<u>Tests</u>	i	Results/Units	<u>Method</u>	Estimated Results
В		0.007 %	ICP-MS	NA
Ca		342000 ppm	ICP	NA
Ca		34.20 %	ICP	NA
Cu		<1 ppm	ICP-MS	0.4 ppm
Cu		<0.0001 %	ICP-MS	0.00004%
Fe		1400 ppm	ICP-MS	NA
Fe		0.14 %	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Calcium Chloride

Page 23 of 31

Sample No.	S-180524-019	Customer ID:		
<u>Tests</u>	i	Results/Units	<u>Method</u>	Estimated Results
Heavy Metals	s as Pb	<9 ppm	Calculation	3 ppm
Heavy Metals	s as Pb	<0.0009 %	Calculation	0.0003%
Hg		<1 ppm	Cold Vapor AA	0 ppm
Hg		<0.0001 %	Cold Vapor AA	0 %
Li		160 ppm	ICP-MS	NA
Li		0.016 %	ICP-MS	NA
Mg		45 ppm	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Calcium

Calcium Chloride

Page 24 of 31

Sample No.	S-180524-019	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Mg		0.0045 %	ICP-MS	NA
Р		<10 ppm	ICP-MS	0 ppm
Р		<0.001 %	ICP-MS	0%
Pb		<1 ppm	ICP-MS	0.09 ppm
Pb		<0.0001 %	ICP-MS	0.00009%
Si		<10 ppm	ICP-MS	0 ppm
Si		<0.001 %	ICP-MS	0%

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Calcium

Calcium Chloride

Page 25 of 31

Sample No.	S-180524-019	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Sn		<1 ppm	ICP-MS	0 ppm
Sn		<0.0001 %	ICP-MS	0%
Water Insoluble		1500 ppm	Insoluble residue after water digestion*	NA
Water Insoluble		0.15 %	Insoluble residue after water digestion*	NA
Zn		<1 ppm	ICP-MS	0.7 ppm
Zn		<0.0001 %	ICP-MS	0.00007%

Certificate of Analysis

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Page 26 of 31

Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 **Credit Card**

Revised:

Sample No.

As

В

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

S-180524-020

Calcium Chloride

Results/Units Method **Estimated Results Tests** Insoluble residue after acid Acid Insoluble 800 ppm NA digestion* Insoluble residue after acid Acid Insoluble 0.080 % NA digestion* ICP-MS NA ΑI 1 ppm ΑI 0.0001 % ICP-MS NA ICP-MS As <1 ppm 0.4 ppm

ICP-MS

ICP-MS

0.00004%

NA

Customer ID:

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

<0.0001 %

73 ppm

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Page 27 of 31

Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 **Credit Card**

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Sample No. S- Tests	180524-020 Customer ID: Results/Units	<u>Method</u>	Estimated Results
В	0.0073 %	ICP-MS	NA
Са	337000 ppm	ICP	NA
Са	33.70 %	ICP	NA
Cu	<1 ppm	ICP-MS	0.5 ppm
Cu	<0.0001 %	ICP-MS	0.00005%
Fe	1400 ppm	ICP-MS	NA
Fe	0.14 %	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 28 of 31

•	S-180524-020	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Heavy Metals	as Pb	<9 ppm	Calculation	3 ppm
Heavy Metals	as Pb	<0.0009 %	Calculation	0.0003%
Hg		<1 ppm	Cold Vapor AA	0 ppm
Hg		<0.0001 %	Cold Vapor AA	0 %
Li		150 ppm	ICP-MS	NA
Li		0.015 %	ICP-MS	NA
Мд		38 ppm	ICP-MS	NA

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

R-20180524-010

Date:

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description Cal

Calcium Chloride

Page 29 of 31

Sample No.	S-180524-020	Customer ID:		
Tests		Results/Units	<u>Method</u>	Estimated Results
Mg		0.0038 %	ICP-MS	NA
Р		<10 ppm	ICP-MS	0 ppm
Р		<0.001 %	ICP-MS	0%
Pb		<1 ppm	ICP-MS	0.04 ppm
Pb		<0.0001 %	ICP-MS	0.000004%
Si		<10 ppm	ICP-MS	0 ppm
Si		<0.001 %	ICP-MS	0%

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services, Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128



THE REPORTED TEST RESULTS RELATE ONLY TO THE ITEM(S) TESTED



Bulk Reef Supply 6325 Sandburg Rd Ste 400 Minneapolis, MN 55427-3629 Request ID:

Date:

R-20180524-010

06/07/2018 Credit Card

Revised:

Estimated Results Reported In Both PPM and Percent and Report Comment Added

Client Description

Calcium Chloride

Page 30 of 31

Sample No.	S-180524-020	Customer ID:		
<u>Tests</u>		Results/Units	<u>Method</u>	Estimated Results
Sn		<1 ppm	ICP-MS	0.09 ppm
Sn		<0.0001 %	ICP-MS	0.000009%
Water Insoluble		600 ppm	Insoluble residue after water digestion*	NA
Water Insoluble		0.060 %	Insoluble residue after water digestion*	NA
Zn		1 ppm	ICP-MS	NA
Zn		0.0001 %	ICP-MS	NA

Certificate of Analysis

Methods noted with an * fall outside of NSL's ISO 17025 Scope of Accreditation.

Definitions: NC - Nonconforming value, Min - Minimum, Max - Maximum. All quantitative analytical results are subject to variability due to the nature of testing. Estimated Uncertainty data is available upon request

These results relate only to the items tested and this report shall not be reproduced, except in full, without the written consent of NSL Analytical Services. Inc.

The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under the federal statutes, including Federal Law, Title 18, Chapter47.

Reporting Officer:

NSL Analytical Services 4450 Cranwood Parkway Cleveland, Ohio 44128