Analytical Laboratories Inc

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

www.analyticallaboratories.com
Lab Federal ID# ID00020

Laboratory Analysis Report

Report To: LIBBY BOCCAROSSE
CARGILL - DEICING TECHNOLOGIES
191 PORTLAND POINT RD PO BOX B
LANSING, NY 14882
Phone: (607) 533-3766 Copy:
e-mail: libby_boccarosse@cargill.com
Date Received: 01/08/2024
Collection Date/Time: 01/08/2024 0:00

Lab/Sample Number: 2400410-01
Sample Location: LIQUID DEICER

Date Printed: 02/22/2024 9:56
Collector's Name:
Transported By: UPS
Temp C Received at Lab:

Field Measurements

pH: Total Chlorine mg/L: DO mg/L:
Temp C: Free Chlorine mg/L: Flow g/min:

Analyte	Result	Units	MRL	MDL	MCL	Analyzed	Analyst	Method	Notes
Inorganics									
% Ash	16.5	%				2/21/24 16:39	ES	AOAC	
pH, Deicer 1+4	8.3	S.U.				1/13/24 13:39	LW	ASTM D1293	
Cyanide, Total	ND	mg/L	0.05	0.008		1/26/24 15:33	DS	EPA 335.4	
Ammonia, Direct (as N)	9.3	mg/L	2.0	1.1		1/13/24 15:08	LW	EPA 350.1	
Total Kjeldahl Nitrogen (as N)	184	mg/L	20.0	6.0		1/15/24 16:46	DS	EPA 351.2	
Nitrate (as N)	ND	mg/L	1.0	0.4		1/11/24 17:00	LW	EPA 353.2	
Nitrite (as N)	1.5	mg/L	0.5	0.05		1/11/24 11:53	LW	EPA 353.2	
Total Phosphate (as P)	16	mg/L	10	6		1/15/24 16:46	DS	EPA 365.4	
Chemical Oxygen Demand	9,810	mg/L	400	6.5		1/10/24 11:23	JLH	EPA 410.4	
Total Solids	819,000	mg/L	2.5	2.5		1/16/24 11:28	BDM	SM 2540 B	
Biochemical Oxygen	1,200	mg/L	3	3		1/15/24 9:00	EH	SM 5210 B	
Mercury									
Mercury, Hg	ND	mg/L	0.02	0.00005		1/9/24 15:00	JD	EPA 245.1	
Metals by ICP									
Cadmium, Cd	ND	mg/L	0.05	0.0005		1/9/24 13:53	JMS	EPA 6010D	
Chromium, Cr	ND	mg/L	0.5	0.002		1/9/24 13:53	JMS	EPA 6010D	
Copper, Cu	ND	mg/L	0.1	0.003		1/9/24 13:53	JMS	EPA 6010D	
Barium, Ba	ND	mg/L	0.5	0.0005		1/9/24 13:53	JMS	EPA 6010D	
Arsenic, As	ND	mg/L	1.0	0.01		1/9/24 13:53	JMS	EPA 6010D	
Lead, Pb	ND	mg/L	0.5	0.005		1/9/24 13:53	JMS	EPA 6010D	
Selenium, Se	ND	mg/L	1.0	0.009		1/9/24 13:53	JMS	EPA 6010D	
Zinc, Zn	ND	mg/L	0.1	0.01		1/9/24 13:53	JMS	EPA 6010D	
Total Metals									
Chart	Complete					2/19/24 15:27	JH	ASTM	
Metals Digestion	COMPLETE					1/8/24 17:00	JMS	EPA 3050	
Corrosion Rate	24.6	%				1/12/24 13:07	JH	NACE PNS	C
Magnesium Chloride	29.6	% wt	5.00	5.00		1/16/24 14:34	JMS	PNS	
Freezer Settleable Solids	< 1.0	%	1.0	1.0		1/22/24 14:54	JH	PNS	Cb

C Corrosion Rate Duplicate = 28.4 %

Cb There was no visible settleable material in a dark green one liter sample. There was no density layer felt at any level in a very viscous sample. Freezer temperature = 0 °F (-17.8 °C).

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Analyte	Result	Units	MRL	MDL	MCL	Analyzed	Analyst	Method	Notes
Total Metals									
% Solid Passing #10 Sieve	7.5	%				1/22/24 14:54	JH	PNS	Ca

Ca There was no precipitation or crystallization observed in the #10 sieve, however the sample was too viscous to pass. After stirring and waiting five minutes only 75 mL would pass the #10 sieve.

Authorized Signature,

JAMES HIBBS, Client Manager

This report shall not be reproduced except in full, without the written approval of the laboratory
The results reported relate only to the samples indicated.

ND - Non Detect
MCL - Maximum Contaminant Level
MDL - Method Detection Limit
MRL - Method Reporting Limit

2400410

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CARGILL

LIQUID DEICER

Analytical Lab Sample Number:2400410-01

Percentages of Original Sample	Specific Gravity (g/mL)	Freezing Point (°C)	Freezing Point (°F)
5%	1.0608	-3.6	25.52
6%	1.0724	-4.4	24.08
7%	1.0841	-5.8	21.56
8%	1.0955	-7.1	19.22
9%	1.1066	-8.5	16.7
10%	1.1174	-10.3	13.46
11%	1.1284	-12	10.4
12%	1.1402	-14.1	6.62
13%	1.1509	-16.5	2.3
14%	1.1615	-18.9	-2.02
15%	1.1716	-21.5	-6.7
16%	1.1838	-24.4	-11.92
17%	1.1932	-27	-16.6
18%	1.2048	-30.4	-22.72
19%	1.2156	-33.5	-28.3
20%	1.2265	-32.5	-26.5
21%	1.2347	-31	-23.8
22%	1.2449	-26.5	-15.7
23%	1.2558	-24.9	-12.82
24%	1.2659	-23	-9.4
25%	1.2757	-21.9	-7.42
26%	1.2855	-19.9	-3.82
27%	1.2933	-18.9	-2.02
28%	1.3046	-18.1	-0.58
29%	1.3084	-17.5	0.5
29.6%	1.3109	-17	1.4

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions about this report, or any future analytical needs, please contact: **James Hibbs**

2400410

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Source: LIQUID DEICER