

Prepared for:

**Surly Brewing Co**

4811 Dusharme Dr

Brooklyn Center, MN USA 55429

## C&C Ginger Mule MT003

Batch ID or Lot Number: <b>MT003</b>	Test, Test ID and Methods: Various	Matrix: Unit	Page 1 of 5
Reported: <b>22Nov2023</b>	Started: 21Nov2023	Received: 20Nov2023	


## Cannabinoids

Test ID: T000262536


Methods: TM14 (HPLC-DAD)

	LOD (mg)	LOQ (mg)	Result (mg)	Result (mg/g)	Notes
Cannabichromene (CBC)	0.146	0.530	ND	ND	# of Servings = 1, Sample Weight=355g
Cannabichromenic Acid (CBCA)	0.133	0.485	ND	ND	
Cannabidiol (CBD)	0.509	1.275	ND	ND	
Cannabidiolic Acid (CBDA)	0.522	1.308	ND	ND	
Cannabidivarin (CBDV)	0.120	0.302	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.218	0.546	ND	ND	
Cannabigerol (CBG)	0.083	0.301	<LOQ	<LOQ	
Cannabigerolic Acid (CBGA)	0.346	1.259	ND	ND	
Cannabinol (CBN)	0.108	0.393	ND	ND	
Cannabinolic Acid (CBNA)	0.236	0.859	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.412	1.499	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.374	1.362	5.050	0.00	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.331	1.206	ND	ND	
Tetrahydrocannabivarin (THCV)	0.075	0.274	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.292	1.064	ND	ND	
<b>Total Cannabinoids</b>			<b>5.050</b>	<b>0.00</b>	
Total Potential THC			5.050	0.00	
Total Potential CBD			ND	ND	

## Final Approval

 Sam Smith  
22Nov2023  
02:43:00 PM MST

PREPARED BY / DATE

 Karen Winternheimer  
22Nov2023  
02:49:00 PM MST

APPROVED BY / DATE

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### Pesticides


Test ID: T000262537

Methods: TM17

(LC-QQ LC MS/MS)	Dynamic Range (ppb)	Result (ppb)		Dynamic Range (ppb)	Result (ppb)	
Abamectin	308 - 2713	ND		Malathion	294 - 2663	ND
Acephate	58 - 2734	ND		Metalaxyl	61 - 2723	ND
Acetamiprid	59 - 2660	ND		Methiocarb	62 - 2711	ND
Azoxystrobin	63 - 2666	ND		Methomyl	58 - 2730	ND
Bifenazate	60 - 2672	ND		MGK 264 1	166 - 1630	ND
Boscalid	64 - 2660	ND		MGK 264 2	109 - 1067	ND
Carbaryl	60 - 2693	ND		Myclobutanil	25 - 2723	ND
Carbofuran	60 - 2702	ND		Naled	63 - 2709	ND
Chlorantraniliprole	57 - 2685	ND		Oxamyl	57 - 2723	ND
Chlorpyrifos	49 - 2768	ND		Paclobutrazol	62 - 2670	ND
Clofentezine	282 - 2707	ND		Permethrin	288 - 2797	ND
Diazinon	294 - 2688	ND		Phosmet	63 - 2568	ND
Dichlorvos	251 - 2742	ND		Prophos	293 - 2700	ND
Dimethoate	59 - 2686	ND		Propoxur	61 - 2689	ND
E-Fenpyroximate	287 - 2789	ND		Pyridaben	297 - 2760	ND
Etofenprox	62 - 2756	ND		Spinosad A	45 - 2099	ND
Etoxazole	291 - 2695	ND		Spinosad D	66 - 665	ND
Fenoxycarb	65 - 2675	ND		Spiromesifen	288 - 2753	ND
Fipronil	35 - 2735	ND		Spirotetramat	299 - 2717	ND
Flonicamid	66 - 2756	ND		Spiroxamine 1	22 - 1024	ND
Fludioxonil	314 - 2683	ND		Spiroxamine 2	34 - 1587	ND
Hexythiazox	56 - 2796	ND		Tebuconazole	274 - 2692	ND
Imazalil	286 - 2692	ND		Thiacloprid	60 - 2688	ND
Imidacloprid	61 - 2769	ND		Thiamethoxam	61 - 2732	ND
Kresoxim-methyl	60 - 2746	ND		Trifloxystrobin	62 - 2703	ND

### Final Approval

  
Sam Smith  
24Nov2023  
11:10:00 AM MST  
PREPARED BY / DATE

  
Karen Winternheimer  
24Nov2023  
11:13:00 AM MST  
APPROVED BY / DATE

Prepared for:

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## Microbial Contaminants


Test ID: T000262538

Methods: TM25 (PCR) TM24, TM26, TM27 (Culture Plating)

	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10 <sup>0</sup> CFU/25g	NA	Absent	Free from visual mold, mildew, and foreign matter
<i>Salmonella</i>	TM25: PCR	10 <sup>0</sup> CFU/25g	NA	Absent	
Total Yeast and Mold*	TM24: Culture Plating	10 <sup>1</sup> CFU/g	1.0x10 <sup>2</sup> - 1.5x10 <sup>4</sup>	None Detected	
Total Aerobic Count*	TM26: Culture Plating	10 <sup>2</sup> CFU/g	1.0x10 <sup>3</sup> - 1.5x10 <sup>5</sup>	None Detected	
Total Coliforms*	TM27: Culture Plating	10 <sup>1</sup> CFU/g	1.0x10 <sup>2</sup> - 1.5x10 <sup>4</sup>	None Detected	

## Final Approval

  
 Brianne Maillot  
 24Nov2023  
 11:03:00 AM MST  
 PREPARED BY / DATE

  
 Brett Hudson  
 24Nov2023  
 12:16:00 PM MST  
 APPROVED BY / DATE

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### Residual Solvents

Test ID: T000262540


Methods: TM04 (GC-MS): Residual

Solvents	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	78 - 1555	ND	
Butanes (Isobutane, n-Butane)	154 - 3071	ND	
Methanol	54 - 1082	ND	
Pentane	83 - 1657	ND	
Ethanol	85 - 1698	>1698	
Acetone	86 - 1713	ND	
Isopropyl Alcohol	94 - 1876	ND	
Hexane	5 - 106	ND	
Ethyl Acetate	89 - 1775	ND	
Benzene	0.2 - 3.4	ND	
Heptanes	85 - 1696	ND	
Toluene	16 - 319	ND	
Xylenes (m,p,o-Xylenes)	116 - 2330	ND	

### Final Approval

 Sam Smith  
27Nov2023  
09:44:00 AM MST

PREPARED BY / DATE

 Karen Winternheimer  
27Nov2023  
09:46:00 AM MST

APPROVED BY / DATE

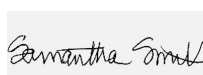
### Heavy Metals

Test ID: T000262539


Methods: TM19 (ICP-MS): Heavy

Metals	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.05 - 4.77	ND	
Cadmium	0.04 - 4.43	ND	
Mercury	0.04 - 4.30	ND	
Lead	0.05 - 4.72	ND	

### Final Approval

 Sam Smith  
29Nov2023  
12:02:00 PM MST

PREPARED BY / DATE

 Karen Winternheimer  
29Nov2023  
12:05:00 PM MST

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Prepared for:

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## Mycotoxins


Test ID: T000262541


Methods: TM18 (UHPLC-QQQ

LCMS/MS): Mycotoxins

	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	2.30 - 133.92	ND	N/A
Aflatoxin B1	0.94 - 32.44	ND	
Aflatoxin B2	0.94 - 32.73	ND	
Aflatoxin G1	1.00 - 32.92	ND	
Aflatoxin G2	1.10 - 33.08	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

## Final Approval

  
Samantha Smith  
29Nov2023  
02:03:00 PM MST  
PREPARED BY / DATE

  
Karen Winternheimer  
29Nov2023  
02:08:00 PM MST  
APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/c4fe243d-ceec-4b3e-ad1a-831c37534452>

**Definitions**  
LOD = Limit of Detection, ULOQ = Upper Limit of Quantitation, LLOQ = Lower Limit of Quantitation, PPB = Parts per Billion, % = % (w/w) = Percent (weight of analyte / weight of product). ND = None Detected (defined by dynamic range of the method). Total Potential Delta 9-THC or CBD is calculated to take into account the loss of a carboxyl group during decarboxylation step, using the following formulas: Total Potential Delta 9-THC = Delta 9-THC + (Delta 9-THCa \*(0.877)) and Total CBD = CBD + (CBDa \*(0.877)). Fail equates to a concentration level of Delta 9-THC, on a dry weight basis, higher than 0.3 percent + or - the measurement uncertainty. Total Potential THC is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step. Total THC = THC + (THCa \*(0.877)). ALOQ = Above Limit Of Quantitation (defined by dynamic range of the method), CFU/g = Colony Forming Units per Gram. Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form. Examples: 10<sup>2</sup> = 100 CFU, 10<sup>3</sup> = 1,000 CFU, 10<sup>4</sup> = 10,000 CFU, 10<sup>5</sup> = 100,000 CFU.

Testing results are based solely upon the sample submitted to SC Laboratories, Inc., in the condition it was received. SC Laboratories, Inc., warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of SC Laboratories, Inc. ISO/IEC 17025:2017 A2LA Cert #: 4329.02 Chemical; 4329.03 Biological. Some tests listed on this COA may not be within our scope of A2LA accreditation. Please visit [A2LA for more details](#).



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